2019 - 2020

History Taking & Physical Examination of
OBSTETRICS & GYNECOLOGY

@ccs.medbank

MedbanK

History taking & Physical examination of obstetrics and gynecology

بســـم الله الرحمن الرحيم

نضع بين أيديكم نحن **لجنة الطب والجراحة** – جامعة مؤتة

جهودنا المبذولة في صياغة النسخة الاولى من **دوسية النسائية والتوليد** لمساعدتكم

في اجتياز امتحان الـ OSCE

بأحسن صورة ممكنة .

ولأن من لا يشكر الناس لا يشكر الله ؛ نشكر الزملاء الذين قاموا بجمع هذه المادة :

ياسر لافي ، ابراهيم غياظة

منى أبازيد ، هاجر بني دومي

طارق أبولبدة ، نزار حداد

ونشكر الطالبة : **باسيل البزور** على جهدها في التنسيق والترتيب .

كما ونشكر كل من ساهم بهذا العمل من زملاء وزميلات

في كليات الطب الأخرى من لجان الطب البشري الذين اقتبسنا

من مراجعهم وأعمالهم لجمع محتوى هذا الدوسية .

ملاحظة : نترقب باهتمام تغذيتكم الراجعة لنطوّر معاً هذا العمل ..

فهرس المواضيع

Abbreviations

3β-HSD	3β-hydroxysteroid dehydrogenase
5-FU	5-fluorouracil
17α-OHP	17α-hydroxyprogesterone
ACTH	adrenocorticotropic hormone
AD	autosomal dominant
ADH	antidiuretic hormone
AED	antiepileptic drug
AFE	amniotic fluid embolus
AFI	amniotic fluid index
AFLP	acute fatty liver of pregnancy
AFP	α-fetoprotein
AGC	atypical glandular cells
AIDS	acquired immunodeficiency syndrome
ALT	alanine transaminase
AMA	advanced maternal age
AMH	Antimullerian Hormone
APA	antiphospholipid antibody
AR	autosomal recessive
ARDS	adult respiratory distress syndrome
AROM	artificial rupture of membranes
ART	assisted reproductive technology
ASC	atypical squamous cells
ASC-H	atypical squamous cells cannot exclude high-grade squamous intraepithelial lesion
ASC-US	atypical squamous cells of undetermined significance
AST	aspartate transaminase
AV	arteriovenous
AZT	analogs—zidovudine
β-hCG	beta human chorionic gonadotropin
BID	twice a day
BP	blood pressure
BPP	biophysical profile
BUN	blood urea nitrogen
BV	bacterial vaginosis
CAH	congenital adrenal hyperplasia
CBC	complete blood count
CCCT	clomiphene citrate challenge test
CF	cystic fibrosis
CHF	congestive heart failure
CIN	cervical intraepithelial neoplasia
CKC	cold-knife conization (biopsy)
CMV	cytomegalovirus
CNS	central nervous system
CPD	cephalopelvic disproportion
CRS	congenital rubella syndrome
CSF	cerebrospinal fluid
CT	computed tomography (CAT scan)
CVA	cerebrovascular accident
CVAT	costovertebral angle tenderness
CVD	collagen vascular disorders
CVS	chorionic villus sampling
CXR	chest x-ray
DA	developmental age
D&C	dilation and curettage
D&E	dilation and evacuation
DCIS	ductal carcinoma in situ
DES	diethylstilbestrol
DEXA	dual-energy x-ray absorptiometry
DHEA	dehydroepiandrosterone
DHEAS	dehydroepiandrosterone sulfate
DHT	dihydrotestosterone
DIC	disseminated intravascular coagulation
DMPA	depot medroxyprogesterone acetate (Depo-Provera)
DTRs	deep tendon reflexes
DUB	dysfunctional uterine bleeding
DVT	deep venous thrombosis
ECG	electrocardiogram
EDC	estimated date of confinement
EDD	estimated date of delivery EFW estimated fetal weight
EIF	echogenic intracardiac focus
ELISA	enzyme-linked immunosorbent assay
EMB	endometrial biopsy
ERT	estrogen replacement therapy
ESR	erythrocyte sedimentation rate
FAS	fetal alcohol syndrome
FH	fetal heart
FHR	fetal heart rate
FIGO	International Federation of Gynecology and Obstetrics
FIRS	fetal immune response syndrome
FISH	fluorescent in situ hybridization
FNA	fine-needle aspiration
FSE	fetal scalp electrode
FSH	follicle-stimulating hormone
FTA-ABS	fluorescent treponemal antibody absorption
FTP	failure to progress
G	gravidity
GA	gestational age
GBS	group B *streptococcus*

GDM	gestational diabetes mellitus
GFR	glomerular filtration rate
GH	gestational hypertension
GI	Gastrointestinal
GLT	glucose loading test
GnRH	gonadotropin-releasing hormone
GTD	gestational trophoblastic disease
GTT	glucose tolerance test
GU	genitourinary
HAART	highly active antiretroviral therapy
Hb	hemoglobin
HbH	hemoglobin H disease
hCG	human chorionic gonadotropin
hCS	human chorionic somatomammotropin
Hct	hematocrit
HDL	high-density lipoprotein
HELLP	hemolysis, elevated liver enzymes, low platelets
HIV	human immunodeficiency virus
hMG	human menopausal gonadotropin
HPL	human placental lactogen
HPV	human papillomavirus
HR	heart rate
HRT	hormone replacement therapy
HSG	hysterosalpingogram
HSIL	high-grade squamous intraepithelial lesion
HSV	herpes simplex virus
I&D	incision and drainage
ICSI	intracytoplasmic sperm injection
Ig	Immunoglobulin
IM	Intramuscular
INR	International Normalized Ratio
ITP	idiopathic thrombocytopenic purpura
IUD	intrauterine device
IUFD	intrauterine fetal demise or death
IUGR	intrauterine growth restricted
IUI	intrauterine insemination
IUP	intrauterine pregnancy
IUPC	intrauterine pressure catheter
IUT	intrauterine transfusion
IVC	inferior vena cava
IVF	in vitro fertilization
IVP	intravenous pyelogram
KB	Kleihauer-Betke test
KOH	potassium hydroxide
KUB	kidneys/ureter/bladder (x-ray)
LBW	low birth weight
LCHAD	long-chain hydroxyacyl-CoA dehydrogenase
LCIS	lobular carcinoma in situ
LDH	lactate dehydrogenase
LDL	low-density lipoprotein
LEEP	loop electrosurgical excision procedure
LFT	liver function test
LGA	large for gestational age
LGV	lymphogranuloma venereum
LH	luteinizing hormone
LIQ	lower inner quadrant
Lletz	large loop excision of the transformation zone
LMP	last menstrual period
LOQ	lower outer quadrant
LOT	left occiput transverse
LSIL	low-grade squamous intraepithelial lesion
LTL	laparoscopic tubal ligation
MAO	monoamine oxidase
MESA	microsurgical epididymal sperm aspiration
MHATP	microhemagglutination assay for antibodies to *T.pallidum*
MI	myocardial infarction
MIF	müllerian inhibiting factor
MLK	myosin light-chain kinase
MRI	magnetic resonance imaging
MRKH	Mayer-Rokitansky-Küster-Hauser (syndrome)
MSAFP	maternal serum α-fetoprotein
MTHFR	methyl tetrahydrofolate reductase
NPO	nil per os (nothing by mouth)
NPV	negative predictive value
NRFT	nonreassuring fetal testing
NSAID	nonsteroidal anti-inflammatory drug
NST	nonstress test
NSVD	normal spontaneous vaginal delivery
NT	nuchal translucency
NTD	neural tube defect
OA	occiput anterior
OCP	oral contraceptive pill
OCT	oxytocin challenge test
OI	ovulation induction
OP	occiput posterior
OT	occiput transverse
OTC	over-the-counter
P	parity
PCOS	polycystic ovarian syndrome
PCR	polymerase chain reaction
PDA	patent ductus arteriosus
PE	pulmonary embolus
PFTs	pulmonary function tests
PID	pelvic inflammatory disease
PIH	pregnancy-induced hypertension
PMDD	premenstrual dysphoric disorder
PMN	polymorphonuclear leukocyte
PMOF	premature ovarian failure
PMS	premenstrual syndrome
PO	per os (by mouth)
POCs	products of conception
POP	progesterone-only contraceptive pills
POP-Q	pelvic organ prolapse quantification system
PPCM	peripartum cardiomyopathy
PPD	purified protein derivative
PPROM	preterm premature rupture of membranes
PPS	postpartum sterilization
PPV	positive predictive value
PROM	premature rupture of membranes
PSTT	placental site trophoblastic tumor
PT	prothrombin time

PTL	preterm labor
PTT	partial thromboplastin time
PTU	propylthiouracil
PUBS	percutaneous umbilical blood sampling
QD	each day
QID	four times a day
RBC	red blood cell
RDS	respiratory distress syndrome
ROM	rupture of membranes
ROT	right occiput transverse
RPR	rapid plasma reagin
RR	respiratory rate
SAB	spontaneous abortion
SCC	squamous cell carcinoma
SERM	selective estrogen receptor modulator
SGA	small for gestational age
SHBG	sex hormone binding globulin
SIDS	sudden infant death syndrome
SLE	systemic lupus erythematosus
SNRIs	serotonin and norepinephrine reuptake inhibitors
SPT	septic pelvic thrombophlebitis
SROM	spontaneous rupture of membranes
SSRIs	selective serotonin reuptake inhibitors
STD	sexually transmitted disease
STI	sexually transmitted infection
SVT	superficial vein thrombophlebitis
TAB	therapeutic abortion
TAC	transabdominal cerclage
TAHBSO	total abdominal hysterectomy and bilateral salpingo-oophorectomy
TBG	thyroid binding globulin
TENS	transcutaneous electrical nerve stimulation
TFTs	thyroid function tests
TLC	total lung capacity
TNM	tumor/node/metastasis
TOA	tubo-ovarian abscess
TOLAC	trial of labor after cesarean
TOV	transposition of the vessels
TPAL	term, preterm, aborted, living
TRH	thyrotropin-releasing hormone
TSE	testicular sperm extraction
TSH	thyroid-stimulating hormone
TSI	thyroid-stimulating immunoglobulins
TSS	toxic shock syndrome
TSST	toxic shock syndrome toxin
TTTS	twin-to-twin transfusion syndrome
UA	urinalysis
UAE	uterine artery embolization
UG	urogenital
UIQ	upper inner quadrant
UOQ	upper outer quadrant
UPI	uteroplacental insufficiency
US	ultrasound
UTI	urinary tract infection
V/Q	ventilation/perfusion ratio
VAIN	vaginal intraepithelial neoplasia
VBAC	vaginal birth after cesarean
V_D	volume of distribution
VDRL	Venereal Disease Research Laboratory
VIN	vulvar intraepithelial neoplasia
VSD	ventricular septal defect
VZIG	varicella zoster immune globulin
VZV	varicella zoster virus
WBC	white blood cell
XR	x-ray

Definitions

Primigravida. : A woman who is pregnant for the first time
Multigravida: A woman who had more than one pregnancy.
Primipara: A women who gave birth to one child with fetal weight more than 500gm (life or dead).
Nullipara: A women that all her pregnancies ended with abortion**.**
Multipara: A women who gave birth to more than one child.
Grand multipara: A women who gave births to more than 4 children.
Birth: The complete expulsion or extraction of a fetus with a fetal weight more than 500 gm.
Live birth: A newborn that shows any signs of life after delivery
(heart beats, movements, breaths).
Still birth: A newborn that did not show any signs of life after birth.
Neonatal death: Any infant death that occurs before 29 days of life.
(early death: during the first 7 days).
Infant deaths: The number of deaths occurring to children less than one year of age (0-364 days).
Term infant: An infant born anytime after 37 completed weeks of gestation through 42 completed weeks (260 to 294 days).
Preterm infant: An infant born before 37 completed weeks of gestation.
Post-term infant: An infant born after completion of 42nd. Week.
Abortus: A fetus or embryo removed or expelled from the uterus with weight less than 500gm or body length of 25 cm (crown to heel) or gestational age of 24 weeks.
Duration of pregnancy: 280 days(40 weeks) from the first day of the last menstrual cycle in a woman with 28 days regular cycles or 266 days from the day of fertilization.
Trimesters of pregnancy: Duration of pregnancy from the last menstrual cycle is usually divided in to 3 equal parts:
First trimester: 0 to end of 13 weeks of gestation.
Second trimester: 14 to end of 27 weeks.
Third Trimester: 28 weeks till delivery.
Menarche : Age when periods commence Average age is 12 years in Western countries but is often later when girls are less well nourished
Primary amenorrhea : No periods by the age of 16 years
Secondary amenorrhea : No periods for 3 months or more in an woman who previously menstruated Regularly Investigate only after 6 months; menstruation often resumes Spontaneously. Excludepregnancy
Polymenorrhea : Abnormally frequent menses at <24 days (↑ frequency)
Oligomenorrhoea : Periods occurring at intervals longer than 35 days and/or being particularly light
Menorrhagia : Excessive blood loss extend to more than 6 days duration at normal intervals. (↑ amount **or** ↑duration)
Polymenorrhagia: ↑Amount. ↑Duration. ↑Frequency
Metrorrhagia: Irregular episodes of uterine bleeding (without any cyclic rhythm)
Flooding : Episodes of very heavy menstrual blood loss Embarrassing as may soak clothes, bedding or chairs. Passing clots simply indicates very heavy bleeding
Dysmenorrhea : Pain prior to or during the period Usually felt in the lower abdomen, the back or the upper thighs

Menopause : The final spontaneous menstrual period. Only known for certain after no further bleeding for 1 year Occurs on average at 51 years of age with a normal range 45-55 years

Perimenopause : Time around the menopause when periods become erratic and menopausal symptoms (hot flushes and sweats) occur , Lasts 2-5 years on average

Postmenopausal bleeding : Spontaneous vaginal bleeding more than 1 year after the final menstrual period Requires urgent investigation to exclude cancer in the genital tract

post-coital bleeding : non-menstrual bleeding that occurs immediately after sexual intercourse.

Intermenstrual bleeding : vaginal bleeding (other than postcoital) at any time during the menstrual cycle other than during normal menstruation

Lie: relation of longitudinal axis of fetus to that of mother.

Presentation: fetal part that occupies lower part of uterus and in relation to the cervix. Only normal presentation is vertex

Vertex: area of fetal skull bounded by anterior and posterior fontanelles and two parietal eminences.

Malpresentation: breech (podalic), occipitoposterior, face, shoulder and brow.

Position: relation of selected part of the fetus bears to maternal pelvis.

Attitude: relation of different parts of fetus to one another.

Quickening: first time when fetal movements had sensed by mother

Primigavida, quickening is 18^{th} to 20^{th} week.

Multiparous, 16^{th} to 18^{th} week.

Engagement: widest part of presenting part has passed successfully through pelvic inlet. Engagement in primigavide occurs after 36^{th} week while in multi occurs in 2^{nd} stage of labour.

Engaged head: largest diameter of fetal head is at level of ischial spines.

Effacement of cervix: shortening and thinning of cervix, this occurs during first stage of labour

Moulding: process by which diameters of fetal skull are reduced, and this encourages progress through bony pelvis without harming underlying brain.

Crowning: The encirclement of the largest diameter of the fetal head by the vulvar ring and head does not return to back.

Iliopectneal eminence: ridge on the hip bone making junction of ilium and pubis.

Caesarean Section: delivery of fetus, placenta and membranes through incision in the anterior abdominal wall.

Obstetric oedema: gravid, subcutaneous and pitting oedema**.**

Augmentation: irregular uterine contractions give oxytocin, contractions become regular

Induction: no uterine contractions

SHOULDER dystocia: difficulty with delivery of fetal shoulders.

Lochia: bloodstained uterine discharge from that is compromised of blood and necrotic tissue.

Show: bloodstained plug of mucus passed from cervix.

APH: bleeding from the genital tract after the 24th week (some authors define as 20th week) of pregnancy & before delivery of the baby.

Abruptio placetae: Normally situated placenta separates from the uterus prematurely and blood collects between the placenta and the uterus.

PPH: Loss of 500 ml of blood (or more) after completion of the third stage of labor (based on clinician's estimation of blood loss) after vaginal delivery, & > 1L post C/S.

Primary → immediate within 1st 24 h post delivery or

secondary →if more than 24 hours after delivery till 6 weeks

Stress incontinence: involuntary leakage of urine associated with increased intra-abdominal pressure.

Subtotal Hysterectomy: removal of fundus and body of uterus with conserving cervix.

Total Hysterectomy: removal of fundus, corpus and cervix.

Radical Hysterectomy: removal of uterus, nearby tissue, upper vaginal cuff and lymph nodes.

Myomectomy: removal of fibroid

Oophorectomy: removal of ovary

Transformation zone: area between old and new sequamocolumner junction and it is most common site for cervical cancer.

Planned pregnancy:

1- Patient consults his doctor about effect of disease on pregnancy

Such as control of blood sugar prior to and in first trim of pregnancy to avoid congenital anomalies.

2- Folic acid intake prior to and through out pregnancy in those with history of neural tube defects. 3- PAP smear

Oestrogen

Estradiol → non-pregnant and premenopause

Estroil → pregnancy

Estrone → menopause

Uterine rupture : Rupture of uterus usually occurs in lower uterine segment.

Perforation of uterus is considered as classical CS

Incomplete uterine rupture: disruption of membranes and myometrium.

Complete uterine rupture: defect through membranes, the wall of uterus and peritoneum.

Nuchal translucency (NT): fluid filled area on the posterior surface of neck.

It is a screening test for aneuoploidy & Down syndrome.

Normal NT is up to 3 mm.

11-14 weeks

Cord presentation: membranes are intact, on PV no presenting part only pulsating cord and there is labour pain.

Cord prolapsed: presenting part is breech or cephalic and the cord is compressed by presenting part. This appears on CTG as variable deceleration.

Placental migration:

Placenta moves toward upper uterine segment after formation of LUS.

Explanation:

1 - rich blood supply in upper uterine segment compared with low supply in LUS.

2 - Main increase in size of uterus occurs in upper uterine segment

Therefore push placenta upward.

Syntocinon: oxytocin agonist acting on smooth muscles of uterus. Vasodilator Route: injection or nasal spray

Ergometrine: alpha agonist that acts on smooth muscles of blood vessels and uterus vasoconstrictor

OB/GYN Hx & PE Hospital:_____

Admission: D/D: _____ - ____/____/_____ Time:_____(am / pm) Via:(Floor / Clinics / ER)

Hx Taking: D/D: _____ - ____/____/_____ Time:_____(am / pm)

Profile:

…… Is a …… Yr-old (married / divorced / widowed) patient,
Housewife / works as ……, lives in *……,
Her blood group is …… and she is (certain /uncertain) about it,
Her husband's blood group is …… and she is (certain / uncertain) about that.

G……. = P …… + …… (All were NVD / All by CS / ……)
Her LMP was on the ……/…../20_ _ , with (regular / irregular) menstrual cycles,
{ she is lactating / using CM ……}, Her EDD is on the … / .. / (20_ _ – 20_ _)
Her GA= ……

****

Cc: _____
_____

HPI:

- **Labor case:**
  The patient felt pain of contractions on the ….. /…… , at …… (am/ pm),
  in her (lower abdomen / ……), the contractions were every …… min(s),
  and each one lasted …… sec(s)/min(s), the pain (does / does NOT) radiate to the
  (back / shoulder / legs), increased by ……, and decreased by
  …… , She (felt / did not feel) leakage of (Fluid / Blood).
  On examination cervical dilation was …… cm.

Fever	
Headache	
Vomiting	
Nausea,	
Dizziness	
Others	

Notes……
……
……
……
……
……

- **Delivery:** her delivery was by (Vagina \ CS) went uneventful , till ……
……
……

  - She delivered a healthy (♂ / ♀), Who went to the NICU for …… (hrs / days) , and the reason(s) was/were: ……
  - She received painkiller by ……
  - Underwent episiotomy……
  - Needed stitches for ……

  Notes……
  ……
  ……

☐ **Post Delivery**: the patient is ..... (Hrs \ Days) post (Vagina \ SC) delivery . and she's:

___ Ambulated ___ Lactating ___ Passed urine (once \ ..... times)
___ Defecated (once \ ..... times) ___ Passed gases (flatus)
___ There is passage of (lochia \ fluid \ .....)
___ (Clots\ no clots) , changed..... (full \ .....) Soaked pads since the delivery.

Notes.....
.....

☐ **Pain** :

- S .....
- O .....
- C .....
- R .....
- A .....
- T .....
- E .....
- S .....

☐ **Other:**

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

[**Obstetric History**]

1. **Current pregnancy**

LMP :

EDD :

- ☐ The patient missed ..... period(s)
- ☐ **or** after ..... days/weeks/months after her last period
- ☐ And took home test on the ..... of ..... and she is (sure / not sure)
- ☐ Confirm it by Laboratory test on the ..... of ..... and she is (sure / not sure)
- ☐ Her first antenatal visit was :
    1. on the ..... of .....
    2. after ..... days / weeks after her pregnancy was diagnosed

Here ask about her booking visit, if they took her blood pressure, weigh her in , her requested any blood test , and the results .

.....

.....

.....

- Her last HG level is / was ..... mg/dl on the .....
- she takes (vitamins , iron , folic acid , calcium) supplements
- Last time she was weighed was on the ..... of ..... And she gained ..... Kg
- She felt quickening at .....week or at the GA of .....

Ask about	Yes or no	Notes
Morning sickness		
Nausea / Vomiting / heart burn		
Anti-emetic drugs use		
Breast fullness / Tenderness		
breast tenderness		
↑ / ↓ Urine frequency		
Dysuria		
Urgency		
Constipation		
Diarrhea		
Headache		
Joint pain		
Back pain		
Lower limb 1. Swelling 2. Pain 3. Redness		
Vaginal 1. Bleeding 2. Discharge		
Vulva Itching		

History of	Yes or no	Notes
X-ray exposure		
Drug intake		
Rubella vaccination		
Trauma		
Long travel		
Smoking during		
Others		

- This pregnancy was planned \ unplanned
- Went smoothly till ..... day(s) prior to admission when .....
  .....

2. previous pregnancies

- G ..... : P ..... + ...
- She was married at age of .....
- And she became pregnant after her marriage by ..... days\months\years
- Ask if she sought medical help to get pregnant? .....

#	*Sex*	*Year*	*GA*	*Place*	*Type*	*Weight*	*BF*	*Problems and notes*
1								
2								
3								
4								
5								
6								
7								
8								
9								
10								

- **Miscarriages**

#	Year	GA	Type	Days of bleeding after	Complications	D & C	notes
1							
2							
3							
4							
5							

- **Contraceptive methods**

#	method	Year Of after the child #	Duration of use	Reasons for using	Reason for stop using
1					
2					
3					

- Notes: .....

[**Gynecological History]**

- Menarche started at age of ..... , and it was regular/ irregular , Heavy \ Light , She changed ..... pads a day , fully / partially / ..... soaked, With / without clots. She (has / does not have) dysmenorrhea (she takes/ doesn't take drugs to reduce the symptoms .....).
- She has / doesn't have inter-menstrual bleeding
- She has / doesn't have vaginal discharge :
- She has / doesn't have post coital bleeding
- She has / doesn't have dyspareunia (superficial / deep)
- Gynecological OP :
    1. .
    2. .
    3. .
    4. .
- Infertility :

.....

.....

[**Past medical history]**

Blood transfusions , DM , BP , Hospital admissions , asthma , TB , epilepsy ,thromboembolic disease ,hypothyroidism.....

.....

[Past surgical history]

1- Past gynecologic surgeries

- **Colposcopy**: is a diagnostic tool used for further evaluation of abnormal Pap smears. This procedure provides a non-surgical way for your physician to visualize cervix .
- **Cryotherapy** is a gynecological treatment that freezes a section of the cervix. Cryosurgery destroys abnormal cervical cells that show changes that may lead to cancer.
- **LEEP Procedure:** The loop electrosurgical excision procedure (LEEP) is used when there is an indication of abnormal cells on the surface of the cervix.
- **Hysteroscopy**: provides a way for your physician to look inside your uterus.
- **Pelvic laparoscopy:** is usually performed under general anesthesia; however, it can be performed with other types of anesthesia that permit the patient to remain awake.
- **D&C (Dilation and Curettage)-** Often used to diagnose or treat abnormal uterine bleeding
- **Oophorectomy** ,**Salpingoophorectomy** , **Falloposcopy** ,**Salpingectomy** ,**Vaginectomy** ,**Caesarian section**.

2- Past non-gynecologic surgeries

.....

.....

[Drug and allergies history] (Drug/Indication/Dose/Duration/Route/Compliance /etc.)

- Prescribed medications , Contraception
- Over-the-counter medications
- Herbal preparations
- Allergies to medications and nature of reactions

.....

.....

.....

.....

[Family History]

- Patient and her husband are \ are not relatives
- Significant illnesses of family members , Known hereditary conditions in family , DM ,BP , cancer , pregnancy loss , pre-eclampsia
- .....

  .....

[Social History]

- She 's living with ..... people
- In a ..... bedrooms (owned \ rented) , (independent \ .... floor) house
- With ..... sun exposure , and ..... ventilation
- She's
  - ☐ Active smoker , she smokes ..... pack per day
  - ☐ Passive smoker
- Travel: .....

Review of Systems:

General
___Fevers/chills/sweats
___Unexplained wt (↑ / ↓)
___Fatigue/weakness
___Excess thirst/urination

Eyes
___Change in vision

Ears/Nose/Throat/Mouth
___Difficult hearing/ringing
___Problem with teeth/gum
___Hay fever/allergies

Cardiovascular
___Chest pain/discomfort
___Leg pain with exercise
___Palpitations

Chest (breast)
___Breast lump/discharge

Respiratory
___Cough/wheeze
___Difficulty breathing

Gastrointestinal
___Abdominal pain
___Blood in bowel movement
___N/ V /diarrhea/constipated
___Loss of appetite (food/drink)

Genitourinary
___Nighttime urination
___Leaking urine
___Unusual vaginal bleeding
___Discharge: penis or vagina
___Sexual function problems

Musculo-skeletal
___Muscle/joint pain

Skin
___ Rash or mole change

Neurological
___Headaches
___Dizziness/light-headed
___Numbness
___Memory loss
___Loss of coordination

Psychiatric
___Anxiety/stress
___Problems with sleep
___Depression

Blood/Lymphatic
___Unexplained lumps
___Easy bruising/bleeding

Other
_____
_____
_____
_____

ORAL QUSTIONS

Why you asked about:

- **Name**

- To be familiar with the patient
- To avoid misnomer
- To fill hospital records and facilitate follow up
- To know the cultural background of the patient

- **Age**

- Some diseases are common in certain age groups
  - Fibroids → 35-45 y
  - Cancer cervix → 40-50 y
  - Bleeding
    - Newborn → Estrogen withdrawal
    - <9y → precocious puberty
    - Peripubertal → DUB
    - 20-40y → abortion – ectopic – V.mole-PCOS- OCP – Fibroids
    - Perimenopausal → DUB
    - Postmenopausal → considered endometrial carcinoma till proved otherwise
- Diagnosis of certain condition depends on age → amenorrhea
- Treatment depends on age
  - Ovarian tumors
    - Young patient → ovarian cystectomy
    - Old patient → panhysterectomy
- Prognosis depends on age → fibroids

- IN obstetrics
  - <20y
    - During pregnancy: more liable to preterm labor, V.mole
    - During labor: more liable to PPH
  - >35y
    - During pregnancy: more liable to preeclampsia, DM, V.mole and congenital anomalies

- **Similar conditions**
  - Because some conditions are recurrent as prolapse

- **Operations**
  - To know if the condition is recurrent (prolapse may recur after repair with worse prognosis)
  - To exclude presence of adhesions as a cause of infertility

- **Trauma or diseases of spine and pelvis**
  - To exclude contracted pelvis

- **Blood transfusion**
  - To exclude blood borne diseases as HCV, HBV ….etc.
  - To know her Rh and exclude sensitization

- **Why you asked about 1st day of LMP**
  - To exclude pregnancy
  - Most gynecological procedures are done post menstrual to decrease congestion and blood loss .
  - Some procedures are done pre menstrual as PEB.
  - To calculate GA and EDD in case of pregnancy .

- **Occupation**
  - To know social class and level of education
  - Some diseases are job related (radiation exposure → teratogenic / healthcare workers → infectious diseases

- **Residence**
  - To know social class and environmental background
  - To contact the patient for follow up
  - Some diseases are endemic (TB , bilharziasis)

- **Marital status**
  - No PV in virgins
  - May affect the choice of treatment

- **Gravidity and parity**
  - Long period of infertility followed by pregnancy → precious baby
  - May help diagnosis
    - Low parity →endometriosis – fibroid
    - High parity → prolapse – cancer cx
  - May affect ttt
  -

- **Special habits**
  - Smoking → Increase incidence of cancer cx , IUGR , IUFD , PROM , preterm labor and accidental he.
  - Alcohol → IUGR , fetal alcohol syndrome and fetal menat retardation.
  - Drug obuse → STDs , UTI , fetal and neonatal dependence and withdrawal and increased incidence of congenital anomalies , IUGR and IUFD .

- **What is normal and abnormal menstrual cycle :**

Menarche	10-14 years	- <10 → precocious puberty - >16y→ 1 amenorrhea
Rhythm	Within 1w before or after expected day	
Length	28d +- 7d	- <21d→polymenorrhoea - >35d→oligomenorrhoea
Duration	4d +- 2d	- <2d→ hypomenorrhoea - >6d→menorrhagia

- **What is the importance of intermenstrual symptoms ?**
  - Their presence is suggestive of ovulation

- **What is the menstrual index?**
  - Duration / length of the cycle (eg4/28)

- **What are characteristics of menstrual blood ?**
  - Color → Dark red as the vaginal acidity acting on some blood turn its Hb into met-Hb (Brown).
  - Odor → Offensive due to decomposition of blood elements mixed with sebaceous secretion at the vulva .
  - Clotting → Normally no clots due to fibrinolytic activity of the endometrium.
  - Composition → Endometrium , RBCs , cervical mucus , cervical and vaginal epithelium and enzymes .

Physical Examination Of OBS & GYN

As in any PE start always by introducing your self to the patient,ask for permission, achieve adequate privacy ,explain to her.

(note I will talk about specifically the abdominal exam, but you should know how to do general full examination)

To examine the patient abdomen she should be lying supine position on bed exposing the area from the nipple to the midthigh but as the dr said you should mention this in the exam and only allowed to expose the area from xiphisternum to symphsis pubis

General Examination:

1- **General description of the patient:** e.g. a middle age, thin built, intelligent patient.
Well oriented in time and place, co-operative, etc.

2. **Appearance**: e.g. the patient is lying comfortable over the couch.

3. **Vital signs**: temp. , pulse rate, B.P, breath rate.

4. **Face**:
- Appearance: e.g. normal not pallor or cyanosed, not exhausted.
- Eyes: e.g. no signs of jaundice (yellow) or anemia (pale).
- Mouth: - angular stomatitis (painful red angels) due to iron def.
- glossitis (beefy red tongue) due to B12 def.
- Mouth hygiene (good or bad)
- central cynosis.
- This should includes examination of eyes and ears as part of systemic examination of the eyes and ears.

5. **Neck**:
- Lymph nodes:
a- Stand behind the patient.
b- Palpate from anterior to posterior (including all lymph node groups in the neck).
c- Find any tenderness e.g. occipital node tenderness (rubella infection)
- Thyroid gland:
a- inspection from anterior. b- palpate from posterior.
- JVP: In pregnancy (0-12)cm above the normal values (5-9)cm considered normal.

6. **Hands**:

-Nails:Clubbing, koilonychia(spoon shape) iron def., lukonychia (white nail) hypoalbumenia, tar staining (brown) smoking.

-Fingers: cyanosis (bluish) tissue hypoxia due to resp. & circulatory dis.

-Palms: palmar erythema, sweaty.

-Skin: temperature.

7. **Arms**: Any deformities or abnormalities

Systemic examinations:

1. **Chest & breast**. This should include:

- Breasts examination. Look for size, symmetry, signs of pregnancy (dilated veins, deep color nipples and areola, Montdomery's tubercles). Positions of the nipples, any signs of infection and discharge.
Examine for galactorrhea. Palpate for any mass. Examine axillary's lymph nodes.
- Heart examination.
- Lungs examination.

2. **Abdomen**:

- ***Inspection:***

- Shape: examination from the end of the bed, looking for distension and asymmetry.

- Movement: with breathing and epigastric pulsation.

- Skin:

***a- Look for the scars*:**

-Transverse supra pubic.

- Sub –umbilical (median or paramedian).

- Right iliac fossa(grid-iron incision).

- Right upper quadrant (cholecystectomy).

Note:
low transverse c/s an incision is made transversely in the lower uterine segment
classical c/s a vertical incision is made into the upper contractile portion of the uterus.

Here some info from SNELL anatomy:
A midline skin incision is made that extends from just below the umbilicus to just above the symphsis pubis .the following structure are to be incised :superficial fascia, fatty layer.(fascia of camper),membranous layer(scarpa's fascia),deep fascia (thin layer),linea alba, fascia transversalis , extraperitoneal fatty layer, parietal peritoneum.

Pfannenstiel incision :muscle-sparing ,low transverse abdominal incision commonly used for cesarean cection

b- Look for stria:
- Stria gravidrum (pink)indicate presentpregnancy.
- Stria albicantes (white) indicate past pregnancy
- Linea nigra (black line on the midline extends from the symphesispubis to the umbilicus).

c- Look for hernias:
- Ask the patient to cough.
- Look at suspected regions.

Note: umbilical hernia commonly occurs during pregnancy.

d- Look for the hair distribution: Normally there is no hair (fine hair) on the abdominal wall. Hair distribution should be looked for only in the pubic area.

e- Look at the umbilicus:
- Position to the midline.
- Appearanceinverted, flattened or averted.

f- Look for any noticed abnormalities: spider nevi, skin rash, dilated veins…etc.

Palpation:

a- Do the superficial palpation (preferred in anti clock wise manner). Strating from the left iliac fossa.
b- If normal: the abdomen is soft lax, no guard no tenderness.
c- A large mass like pregnant uterus is felt on superficial abdominal examination and it should be palpated also to feel for softness, tenderness, fetal parts and may be fetal movements.
d- Deep palpation for deep tenderness and deep mass. Examination for organomegaly should be included.

Obstetric examination:

-Measure fundal height:
After 20 weeks measure the SFH in centimetres. With a tape measure.
fix the end at the highest point on the fundus (not always in the midline) and measure to the top of the symphysis pubis.

The length in centimetres roughly corresponds to how far along she is in weeks; i.e. 36cm roughly equals 36 week…etc.

Leopold's Maneuvers

Leopold's Maneuvers are a common and systematic way to determine the position of a fetus inside the woman's uterus; they are named after the gynecologist Christian Gerhard Leopold.

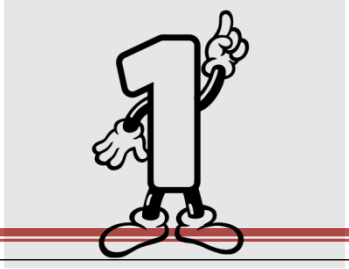
The maneuvers consist of four distinct actions, each helping to determine the position of the fetus. The maneuvers are important because they help determine the position and presentation of the fetus, which in conjunction with correct assessment of the shape of the maternal pelvis can indicate whether the delivery is going to be complicated, or whether a Cesarean section is necessary.

Leopold's Maneuvers are difficult to perform on:

· 1) Obese women

2) Women who have polyhydramnios

To aid in this, the health care provider should first ensure that the woman has recently emptied her bladder.



First maneuver: Fundal Grip

While facing the woman, palpate the woman's upper abdomen with both hands.

Findings:

1) *The level of uterine fundus and GA*

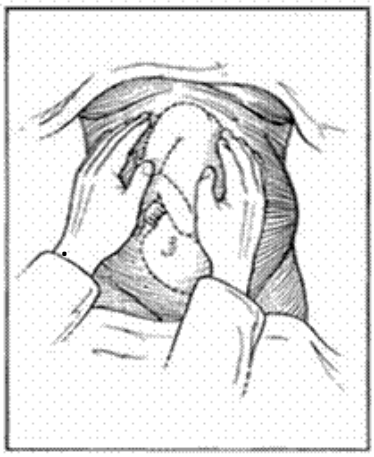
2) which part of fetus occupying the fundus ?

The fetal head is hard, firm,

independently of the trunk

the buttocks feel softer,

shoulders and limbs have small bony processes; unlike the head, they move with the trunk..



Second maneuver

Second maneuver: Lateral Grip

Attempts to determine the location of the fetal back. Still facing the woman.

Both hands are placed on the lateral surfaces of uterus at the level of umbilicus .First the right hand remains steady on one side of the abdomen while the left hand explores the right side of the woman's uterus. This is then repeated using the opposite side and hands

Findings :

1) lie

2)position

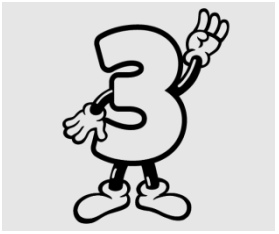
3)uterine tone

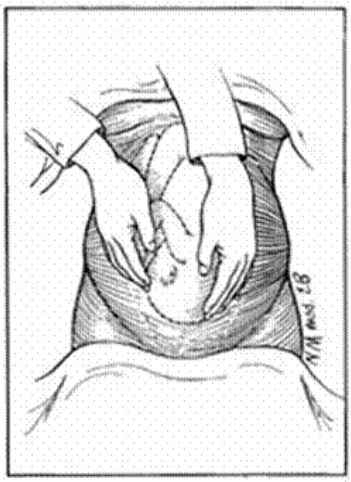
4) *quantity of amniotic fluid*

5) fetal movement

The fetal back will feel firm and smooth

fetal extremities (arms, legs, etc.) should feel like small irregularities and protrusions.





Fourth maneuver

Third maneuver: Pawlick's Grip(1st pelvic grip)

Your thumb is placed on one side of the **pelvis** while the remaining 4 other fingers are placed on the other side. Deep but gentle palpation is required till the presenting part is felt. In the majority of cases we can palpate a round and hard object – the fetal head.

Findings :

We do this :

1 - To identify the presenting part.

2- To assess if the presenting part has engaged or not.

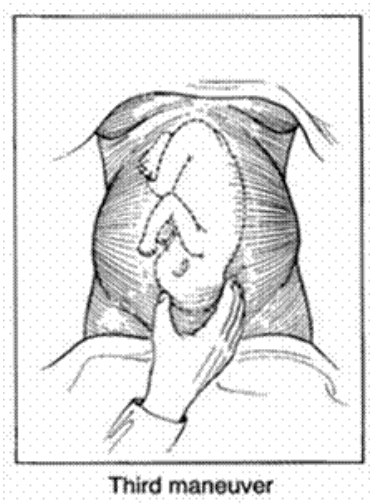
Hard rule :
the umbilicus level is 20-22 wks and every cm above this level =1week.

Easy rule :
read the whole measure and this is equal to the weeks of gestational age.
e.g 29cm=29 wks.

Notes :

-a primipara uterus fundus at term(40wks) is at the level of xiphysternum which is the same level for multipara but at 36 wks which means that the uterus of primipara is at a lowr level than multipara.

-primipara gets the head of the uterus down at 36-37wks. While for multipara the head gets down on labour.


Third maneuver

Fourth maneuver:
2nd Pelvic Grip

A doctor is standing towards patient's feet. The fingers of both hands are located on the lateral surfaces of lower uterine segment and carefully try to insert the fingers between presented part and pelvic inlet.

Findings :

We can determine :

1)The presented part

2) Station .

If the head of the fetus is well-flexed, it should be on the opposite side from the fetal back. If the fetal head is extended though, the occiput is instead felt and is located on the same side as the back.

Rule of 5:

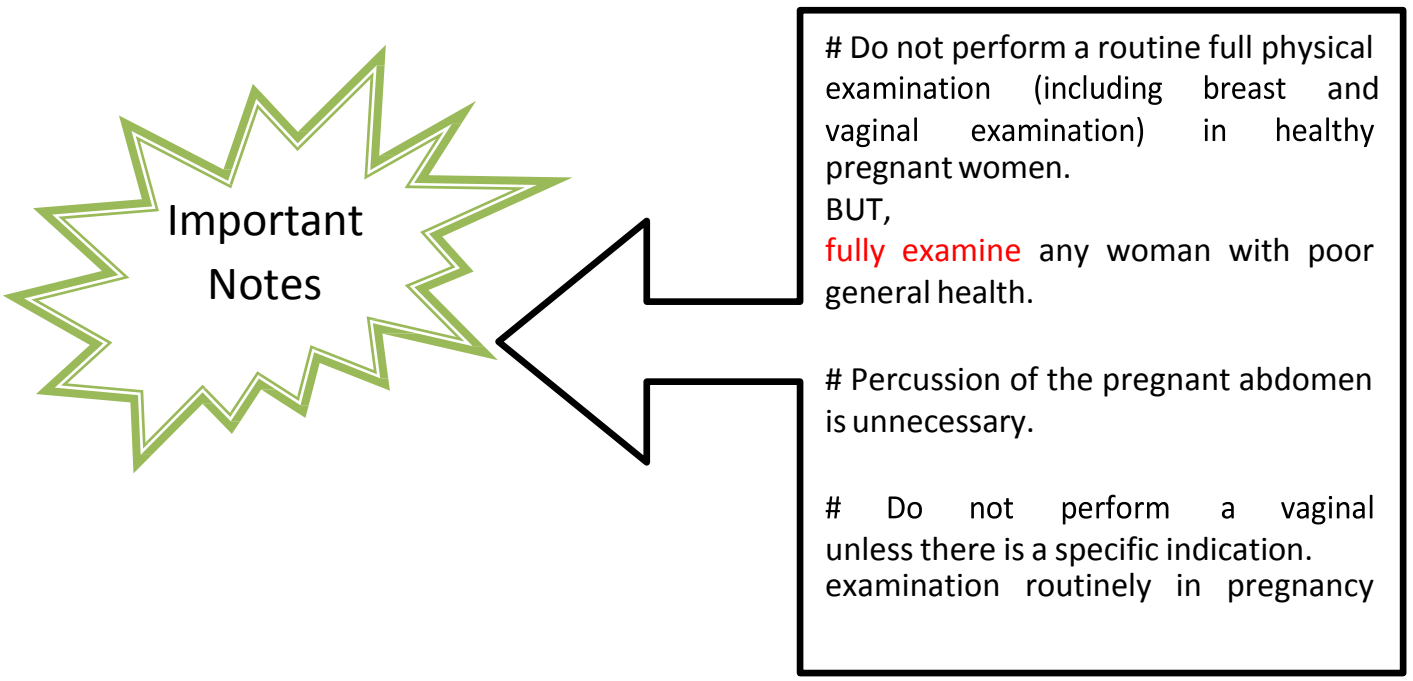
If you can feel the whole of fetus head above the pelvic brim so it is (free) and recorded as 5/5. But it is (engaged) if you feel only 2/5th or less(method for diagnosis of engagement on abdominal exam).

You should Know that Leopold maneuvers are part of the (Palpation step) in pregnant Abdominal Examination:

-Measure blood pressure (It's very Important and has it's own mark on check list/OSCE)

-Auscultating the baby's heart:

This is best heard over the baby's shoulder. If you have correctly identified the lie you should roughly know where this is. Put either your Doppler ultrasound or Pinard stethoscope over this area and listen. The baby's heart rate should be between 110-160bpm (ensure you are not incorrectly hearing the transmission of mum's, remember her's will be slower).



- **Indications for emergent vaginal examination :**

1. fetal distress as cord prolapse .
2. bleeding
3. urge to push by the mother which indicates full dilatation
4. spontaneous rupture of membrane
5. before giving analgesia.

Lower limb:

Inspection:
for symmetry, any deformity, varicose veins for the signs of DVT: swelling, redness &tempreture.

Palpation:
Press against the bony surface of the shin of tibial bone by your thumb for at least 20-30 seconds for edema. Palpate for dorsalis pedis pulse
(in the 1st interosous space)

Pelvic Examination

Introduction

Wash hands, Introduce self, ask Patients name & DOB & what they like to be called, Explain examination , why its necessary ang get consent , Get chaperone
Explain procedure :

- Be impersonal e.g. " internal exam from down below. It will involve placing 2 fingers into the vagina . also explain about , for speculum (" small plastic tube to look at the cervix .

- It shouldn't be painful but , if at any point you are uncomfortable or want to stop, just say so. One of the nurses will also be present to ensure you are comfortable and act as a chaperone

- Patient shouldn't lying flat in lithotomy position but cover up until needed "You will need to undress from the waist down, put your heels together and touching your bottom then flop your knees down".

A few questions before starting: LMP, intra-menstrual bleeding, discharge, contraception, last smear Ask if patient wants to go to the toilet first.

NB. Keep talking to and reassuring patient, using their name, throughout.

General Inspection
Patient look ill?
External genitalia and secondary sexual characteristics including hair distribution etc

Abdominal Exam
Inspect: distension, scars
Feel abdomen for masses and tenderness
Feel groin for inguinal lymphadenopathy

External examination

- Put on gloves
- Hair distribution
- Part labia with forefinger and thumb of left hand
- Inspect vulva: tumours, lesions, warts/ ulcerations, cysts (sebaceous, Bartholin's), erythema, atrophy, labial fusion, whitening, scarring, discharge, bleeding, demonstrable stress incontinence Clitorus ,Urethral meatus ,Vaginal introitus
- Get patient to cough for uterovaginal prolapse
- Palpate labia majora with index finger and thumb (should feel plaint and fleshy)

Speculum exam

1- Gather equipment
- Gloves
- KY lubricating gel
- Speculum
- Swabs :
  - Charcoal media swabs x2 (high vaginal and endocervical)
  - White Chlamydia swab pack (endocervical)
- Cervical smear brush
- Cervical smear sample bottle
- Wash tray and place equipment inside in partially open packets

2- Performing the swabs
- Apply gloves
- Lubricate speculum and warn the patient
- Part labia and insert speculum with screw sideways
- Rotate speculum so screw is facing upwards and open it and tighten screw

- Hold in place (so it doesn't slide out) with your left hand
- Use light to visualize cervix – look for erosions, ulcerations, growths, cervicitis, blood, polyps, ectropion
- To take each swab in turn:
  - Use your right hand to pick up the swab's sample tube and place this in your left hand (also holding the speculum) and remove the lid (put this back into the tray for the meantime)
  - Pick up and take the swab with your right hand
  - Place the used swab back into its tube in your left hand, tighten the lid and place this back in the tray
- Order and detail of swabs to take:
  - **Hi-vaginal charcoal media swab (BV, TV, Candida, group B strep):** circle around the high vaginal wall once (lateral formix to posterior fornix to other lateral fornix)
  - **Endocervical charcoal media swab (gonorrhoea):** place in endocervical canal and do one full 360˚ sweep (not rotation) .
  - **Endocervical Chlamydia swab:** scrub endocervical region in and out for 10-30 seconds. Once done break off bottom half into its sample tube.
- Close speculum blades (but leave open slightly so don't pinch vaginal walls) and remove speculum while rotating it back sideways.
- Fill in the sample pots and details on request form Name, DOB, hospital/clinic number, address, GP name and address , Specimen site ,Clinical details .

3- Performing cervical the smear

- Apply gloves
- Lubricate speculum and warn the patient
- Part labia and insert speculum with screw sideways
- Rotate speculum so screw is facing upwards and open it and tighten screw
- Hold in place (so it doesn't slide out) with your left hand
- Use light to visualise cervix - look for erosions, ulcerations, growths, cervicitis, blood, polyps, ectropion
- Use your right hand to open the sample pot and place it in your left hand (which is also holding the speculum)
- Take the smear using your right hand
- Place the centre piece of the brush in the endocervical canal and rotate the brush 5 times in the endocervix
- Remove and, depending on type of brush, either snap it into the pot in your left hand or turn it in the bottle 10 times .

- Place the lid on the sample pot with your right hand and place the pot back in the tray .
- Close speculum blades (but leave open slightly so don't pinch vaginal walls) and remove speculum while rotating it back sideways.
- Fill in the sample pot and details on request form Name, DOB, hospital/clinic number, address, GP name and address , Date of last smear , Reason for smear (e.g. routine recall, first smear etc) , Sampling device , Specimen site , Condition (pregnant, postnatal, IUCD, other hormones, oral contraceptives, postmenopausal) , Appearance of cervix , Clinical details .

Internal (bimanual/ PV) exam

- Explain and comfort patient
- Lubricate fingers
- Place index finger first then introduce middle finger. Enter with palm facing sideways then rotate so it is facing up.
- With the 2 fingers facing upwards, move along posterior wall of vagina. Move up and over cervix (cervical excitation = PID, ectopic) and feel it (smooth, bleeds, mobility, firm (normal)).
- Now place 1 finger under cervix and push upwards while simultaneously pushing fundus down abdominally with the other hand.
- Assess uterus size (pear is normal 6 week uterus, 20 weeks is just below umbilicus, 22 weeks is at umbilicus),
- Determine if anteverted/retroverted (uterus not touching fingers/ easily felt)

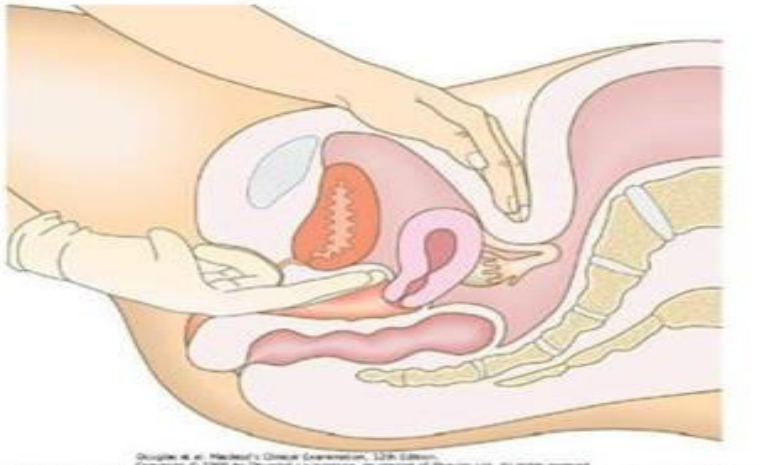


Figure 10.29 **Bimanual examination of the uterus. (A)** Use your vaginal fingers to push the cervix back and upwards, and feel the fundus with your abdominal hand. **(B)** Then move your vaginal fingers into the anterior fornix and palpate the anterior surface of the uterus, holding it in position with your abdominal hand.

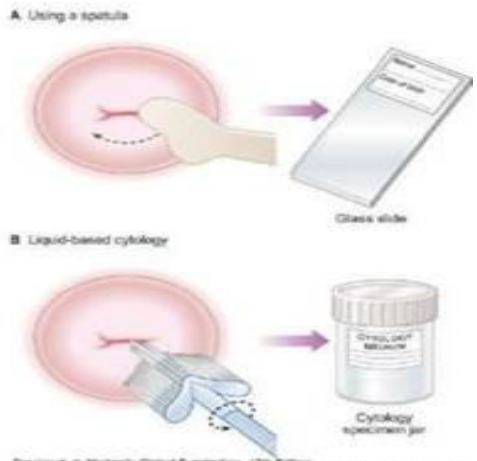
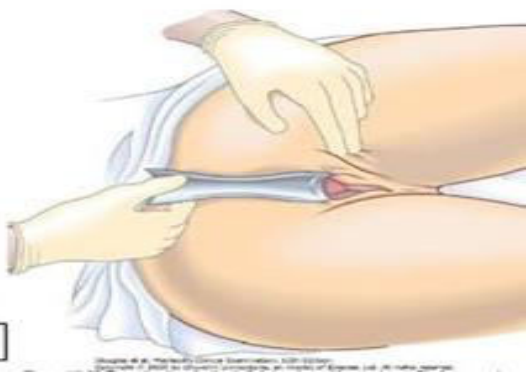


Figure 10.28 **Taking a cervical smear.**



Differential Diagnoses of Common Presentations

#	Common Presentations		
	DDx	**Suggested by**	**Confirmed by**
A- Incontinence of urine alone (not faeces)			
1	**Uterine prolapse**	incontinence of urine, 'feeling like something coming down	pelvic examination: cervix observed in lower vagina.
2	**Urinary tract infection with cystitis**	vomiting, fever, abdominal pain, blood in urine, nitrites, white cells, and blood on urine dipstick	MSU microscopy and culture. US scan for possible anatomical abnormality
3	**Weakness of pelvic floor muscles**	incontinence during coughing, sneezing, laughing	urodynamic studies.
# Initial investigations (other tests in Confirmed Above): urine dipstick , MSU(Midstream specimen of urine), CBC .			
B - Secondary amenorrhea			
1	**Pregnancy**	presentation during childbearing age	pregnancy test +ve, pelvic US scan.
2	**Normal menopause**	>40y of age, hot flushes.	↑FSH.
3	**Premature ovarian failure**	hot flushes, <40y of age, and no signs of other endocrine disease (adrenal failure, hypothyroidism, etc.).	↑LH, ↑FSH, ↓oestradiol, ovarian biopsy: atrophic.
4	**Polycystic ovary syndrome (PCOS)**	oligo-/amenorrhoea, hirsutism, head hair thinning, acne, obesity, impaired fasting glucose o type 2 diabetes mellitus, acanthosis nigricans, skin tags, infertility.	↑testosterone, ↓SHBG, ↑LH, LH>FSH, cystic ovaries on pelvic US scan.
5	**Hyperprolactinaemia due to macro- or micro-adenoma, or idiopathic (no apparent adenoma)**	galactorrhoea, amenorrhoea. Headache or bitemporal visual field defect (if large prolactinoma).	↑serum prolactin. Expanded pituitary fossa on skull X-ray or CT scan. MRI scan: visible micro- (<10mm) or macro-adenoma (>10mm).

6	**Thyrotoxicosis due to Graves' disease, single or multiple toxic nodules**	amenorrhoea alone, anxious-looking, thin,lid retraction and lag, tremor, hyper-reflexic, diffuse goitre in Graves', visible or palpable nodule(s) if toxic nodules.	↓TSH and ↑T3 or ↑T4 or both. Thyroid antibodies +ve if Graves'. US scan or isotope scan appearance.
# Initial investigations (other tests in Confirmed Above): pregnancy test, FSH, LH, testosterone, and sex hormone binding globulin (SHBG), prolactin			
C - Excessive menstrual loss , menorrhagia (in excess of 80mL per cycle)			
1	**Fibroids**	menorrhagia alone , urinary frequency, pelvic pain, constipation, recurrent miscarriage, infertility. Mass on bimanual pelvic examination.	US scan or CT appearance
2	**Endometrial carcinoma**	abnormal uterine bleeding, bloodstained vaginal discharge, postmenopausal bleeding.	pelvic US scan, hysteroscopy with tissue sampling of endometrium
3	**endometriosis**	dysmenorrhoea, heavy periods, abdominal pains, dyspareunia, infertility, pelvic mass.	appearance of peritoneal deposits at laparoscopy
4	**Chronic pelvic inflammatory disease**	lower abdominal pain, fever, vaginal discharge, dysuria. ↑ESR and ↑CRP, leucocytosis	organisms on high vaginal swab, adhesions on pelvic US scan and laparoscopy
5	**Intrauterine contraceptive device (IUCD)**	history of its insertion, painful periods	symptoms subsiding after removal of IUCD.
6	**Primary hypothyroidism**	menorrhagia alone , cold intolerance, tiredness, constipation, bradycardia	↑TSH, ↓FT4.
7	**Bleeding diathesis**	anticoagulant therapy, easy bruising, or other bleeding sites.	abnormal clotting screen. FBC: ↓platelets
# Initial investigations (other tests in Confirmed Above): FBC, TSH, US scan of abdomen/pelvis.			

D - Intermenstrual or post-coital bleeding			
1	**Endometrial carcinoma of the uterus**	abnormal uterine bleeding, bloodstained vaginal discharge, postmenopausal bleeding	pelvic US scan, hysteroscopy with tissue sampling of endometrium.
2	**Carcinoma of cervix**	irregular vaginal bleeding, offensive, watery or bloodstained vaginal discharge, obstructive uropathy, and back pain in late stage	appearance on vaginal speculum examination, biopsy of cervix.
3	**Cervical or intrauterine polyps**	intermenstrual spotting or postmenstrual staining.	appearance on vaginal speculum examination, hysteroscopy, histology of resection specimen
# Initial investigations (other tests in Confirmed Above): pelvic US scan			
E - Vulval skin abnormalities			
1	**Thrush: Candida albicans (often in pregnancy, contraceptive, and steroids, immunodeficiencies, antibiotics, and diabetes mellitus)**	by: vulva and vagina red, fissured, and sore.	mycelia or spores on microscopy and culture.
2	**Allergy**	being worse after contact with some substances, e.g. nylon underwear, chemicals, and soap.	response to avoidance of precipitants.
3	**Lichen sclerosis**	being intensely itchy. Bruised, red, purpuric appearance. Bullae, erosions, and ulcerations. Later, white, flat, and shiny with an hourglass shape around the vulva and anus.	above clinical appearance and biopsy

4	**Leukoplakia**	itchiness and white vulval patches due to skin thickening and hypertrophy.	above clinical appearance and histology on biopsy.
5	**Carcinoma of the vulva**	indurated ulcer with an everted edge.	appearance biopsy.
6	**Other rarer causes**	(Obesity, incontinence, diabetes mellitus, psoriasis, lichen planus, scabies, pubic lice, and threadworms.)	
#Initial investigations (other tests in Confirmed): urine dipstick for glucose and blood, vulval swab for microsopy and culture.			
F - Vaginal discharge			
1	**Excessive normal secretion**	women of reproductive age, milky white, or mucoid discharge.	normal investigations
2	**Vaginal thrush**	pruritis vulvae with a white discharge in a well patient.	high vaginal swab.
3	**Bacterial vaginosis**	fishy odour discharge, itching, irritation	high vaginal swab + wet saline microscopy shows presence of cells.
4	**Cervical erosions (ectropion)**	no other obvious symptoms.	speculum examination.
5	**Endocervicitis (gonococcus, Chlamydia)**	symptoms in partner of urethritis	inflamed cervix on speculum examination and endocervical swab result.
6	**Carcinoma of cervix**	bloodstained discharge, irregular vaginal bleeding, obstructive uropathy, and back pain in late stage.	cervical smear, cytology, colposcopy with biopsy.
7	**Foreign body**	bloodstained discharge, use of ring pessary, intrauterine contraceptive device, tampon	speculum examination or colposcopy or hysteroscopy.
8	**Endometrial polyp**	bloodstained discharge, intermenstrual spotting, postmenstrual staining.	hysteroscopy
9	**Trichomonas vaginitis**	profuse, greenish yellow, frothy discharge, dysuria, dyspareunia.	protozoa and WBC on smear.

10	**Gonococcal cervicitis**	purulent discharge, lower abdominal pain, fever, cervix appears red and bleeds easily	Gram stain of cervical or urethral exudates shows intracellular Gram -ve diplococci.
11	**Chlamydia cervicitis**	purulent discharge, lower abdominal pain, fever, cervix appears red and bleeds easily.	endocervical swab.
# Initial investigations (other tests in Confirmed above): urine dipstick, high vaginal swab			
G - Lumps in the vagina			
1	**Cystocoele**	frequency and dysuria. Bulging, upper front wall of the vagina.	cystogram showing residual urine within the cystocoele
2	**Urethrocoele**	stress incontinence ('leaks' when laughing or coughing).Bulging of the lower anterior vaginal wall.	micturating cystogram showing displaced urethra and impaired sphincter mechanisms
3	**Rectocoele**	patient may have to reduce herniation prior to defaecation by putting a finger in the vagina. Bulging, middle posterior wall	barium enema or MRI scan showing rectum bulging through weak levator ani
4	**Enterocoele**	bulging of upper posterior vaginal wall	barium enema or MRI scan showing loops of intestine in the pouch of Douglas
5	**Uterine prolapse (made worse by obesity, chronic bronchitis, or COPD)**	'dragging' or 'something coming down', worse by day. Frequency, stress incontinence, and difficulty in defaecation.	cervix well down in the vagina (1st degree prolapse) or protruding from the introitus when standing or straining (2nd degree) or the keratinized uterus lying outside vagina, the cervix ulcerated (3rd degree prolapse or procidentia).
6	**Vaginal carcinoma**	vaginal bleeding, mass in the upper third of the vagina.	squamous cell carcinoma on biopsy

H - Ulcers and lumps of the vulva			
1	**Vulval warts (condylomata acuminata) due to human papilloma virus (HPV)**	warts on vulva, perineum, anus, vagina, or cervix (florid in pregnancy or if immunosuppressed)	
2	**Urethral carbuncle caused by meatal prolapse**	small, red swelling at the urethral orifice. Tender and pain on micturition	
3	**Bartholin's cyst and abscess caused by blocked duct**	extreme pain (cannot sit) and red, hot, swollen labium	
4	**Herpes simplex (herpes type II) complicated by urinary retention**	vulva ulcerated and exquisitely painful	
5	**Other causes**	(Local varicose veins, boils, sebaceous cysts, keratoacanthomata, condylomata, latent syphilis, primary chancre, molluscum contagiosum, abscess, uterine prolapse or polyp, inguinal hernia, varicocoele, carcinoma. Also causes of vulval ulcers: syphilis, herpes simplex, chancroid, lymphogranuloma venereum, granuloma inguinale, TB, Behcet's syndrome, aphthous ulcers, Crohn's disease.)	
I - Ulcers and lumps in the cervix			
1	**Cervical ectropion (' erosion' innocuous)**	red ring of soft glandular tissue around cervical opening often found with puberty, combined pill, during pregnancy ,bleeding, producing excess mucus,or infected	(in cases of doubt) histology showing columnar epithelium
2	**Nabothian cysts**	appearance of smooth spherical cyst (mucus retention)	
3	**Cervical polyps**	increased mucus discharge or post-coital bleeding	histology of resected, pedunculated, benign tumour arising from endocervical junction

4	**Cervicitis**	increased mucus discharge or post-coital bleeding. Very red swollen cervix with overlying mucus and blood.	histology showing follicular or mucopurulent changes. Vesicles in herpes. Culture showing Chlamydia, gonococci, etc.
5	**Cervical intraepithelial neoplasia (CIN)**	overlying cervicitis, in older woman, smoker, underprivileged background, prolonged pill use, high parity, many sexual partners or a partner having many other partners, early first coitus, past sexually transmitted diseases	papanicolaou smear showing dyskaryosis; no malignancy on cervical biopsy.
6	**Carcinoma of cervix**	irregular vaginal bleeding, offensive, watery or bloodstained vaginal discharge, obstructive uropathy, and back pain in late stage. Firm or friable mass which bleeds on contact	appearance on vaginal speculum examination, biopsy of cervix
J - Tender or bulky mass (uterus, Fallopian tubes, or ovary) on pelvic examination			
1	**Pregnancy**	amenorrhoea in sexually active woman. Uterus at 6wk of pregnancy is like an egg, at 8wk like a peach, at 10wk like a grapefruit, and at 14wk, it fills the pelvis.	pregnancy test +ve, pregnancy sac seen on abdominal or transvaginal US scan

2	**Ovarian mass (benign tumour, functional cysts, the ca lutein cysts, epithelial cell tumours (serous and mucinous), cystadenomas, mature teratomas, fibromas malignant cystadenomas, germ cell or sex cord malignancies, 2°s from the uterus or stomach, Krukenberg tumours spreading via the peritoneum)**	painless pelvic mass, often to one side and amenorrhoea	abdominal or transvaginal US scan appearances.
3	**Endometritis (uterine infection) after abortion and childbirth, IUCD insertion, or surgery May involve Fallopian tubes and ovaries. Low-grade infection is often due to chlamydia**	lower abdominal pain and fever, uterine tenderness on bimanual palpation.	transvaginal US scan, endocervical swabs, and blood cultures
4	**Endometrial proliferation due to oestrogen stimulation**	heavy menstrual bleeding and irregular bleeding (dysfunctional uterine bleeding), and polyps	'cystic glandular hyperplasia' in specimen after dilatation and curettage.
5	**Pyometra (uterus distended by pus, associated with salpingitis or 2° to outflow blockage)**	lower abdominal pain and fever, uterine tenderness on bimanual palpation	transvaginal US scan, cervical swabs, and blood cultures

6	**Haematometra due to imperforate hymen in the young, carcinoma, iatrogenic cervical stenosis after cone biopsy**	lower abdominal pain and uterine tenderness on bimanual palpation	no fever, WCC normal. Transvaginal US scan appearance.
7	**Endometrial tuberculosis (also affects the Fallopian tubes with pyosalpinx)**	infertility, pelvic pain, amenorrhoea, oligomenorrhoea	transvaginal US scan, cervical swabs, and +ve smear or cultures for AFB.
8	**Ectopic pregnancy**	abdominal pain or bleeding in a sexually active woman with a history of a missed period. Gradually increasing vaginal bleeding, shoulder-tip pain (diaphragmatic irritation), and pain on defecation and passing water (due to pelvic blood). Sudden severe pain, peritonism, and shock with rupture	hCG >6,000IU/L and an intrauterine gestational sac not seen on pelvic US scan, or if hCG 1,000-1,500IU/L and no sac is seen on transvaginal US scan
9	**Fibroids (uterine leiomyomata)**	heavy and prolonged periods, infertility, pain, abdominal swelling, urinary frequency, oedematous legs and varicose veins, or cause retention of urine	normal hCG and transvaginal US scan showing discrete lump(s) in the wall of the uterus or bulging out to lie under the peritoneum (subserosal) or under the endometrium (submucosal) or pedunculated.

10	**Acute salpingitis often associated with endometritis, peritonitis, abscess, and chronic infection**	being unwell, with pain, fever, spasm of lower abdominal muscles (more comfortable lying on back with legs flexed). Cervicitis with profuse, purulent or bloody vaginal discharge. Cervical excitation and tenderness in the fornices bilaterally, but worse on one side. Symptoms vague in subacute infection	laparoscopy
11	**Chronic salpingitis (unresolved, unrecognized, or inadequately treated acute salpingitis) leading to fibrosis and adhesions, pyosalpinx, or hydrosalpinx**	pelvic pain, menorrhagia, secondary dysmenorrhoea, discharge, deep dyspareunia, depression. Palpable tubal masses, tenderness, and fixed retroverted uterus	laparoscopy to differentiate between infection and endometriosis

First antenatal visit

- When pregnant women comes to you as her first antenatal visit, you should know everything about her, take a history in details, but here you will find most important points.

- History Taking:

 # Patient profile

Name, age, occupation, residency, Gravda and Para, LMP , expected date of delivery, gestational age, blood group (Rh +/-).

Gravidity: the total number of pregnancy including the present one, regardless of the outcome.
Parity: the number of livebirths and stillbirths delivered after the age of viability.
Age of viability: 24 weeks

To calculate **EDD** :
28 – her period = X days
(LMP + X days) – 3 months + 1 year = **EDD**

 # Current pregnancy

when did you know you are pregnant? And how? is the pregnancy confirmed ? and how ? is this pregnancy wanted ? planned?

Ask about pregnancy symptoms :

- Tender, swollen breasts. Early in pregnancy hormonal changes might make the breasts tender, sensitive or sore.
- Nausea with or without vomiting.
- Increased urination.
- Fatigue.

Ask about urinary symptoms (dysuria, frequency, urgency) , the urinary symptoms are common in pregnancy but maybe UTI .

Ask about bowel habit (constipation, diarrhea) change in bowel habit common in pregnancy.

Ask about vaginal bleeding (vaginal bleeding is common during first trimester).

 # Gynecological history

ask about age of her menarche

Ask about menses : is it regular/ irregular, heavy/ light, comes every…days, and last for … days how much pads she changes every day? Is it fully soaked? Is there flooding? Is there any clots?

Ask about history of :

-**intermenstrual bleeding**
- **post coital bleeding**
- **dyspareunia** "post coital pain" (superficial/ deep)
- **vaginal discharge** (Nature, amount, color and odor)
- **dysmenorrhea** (Primary/ secondary)

- **contraceptive use(** method and duration)
- **gynecological operation**
- **infertility period last Pap smear**

 # Obstetric history

What year did she get married?

Ask about each baby : year of birth , wanted/ unwanted, Planned / unplanned , gestational age (term/preterm), type of delivery (Spontaneous normal vaginal delivery/ induced vaginal delivery/ assisted delivery/ CS) .- If not normal vaginal ask about the cause- , antenatal or postpartum complication. , if the baby was admitted to ICU and why, if followed by D&C .

- **details about the baby**:
  - baby's gender
  - weight at delivery
  - viability of baby
  - baby abnormality
  - breastfeeding

If there are miscarriages ask about the cause.

Ask about past medical and surgical history and about hypertension , DM , and pelvic surgery

Ask if she take any medication

Ask about her family history (history of twins in her relatives or history of recurrent miscarriages)

Ask about smoking and Alcohol.

##Calculate the BMI

##Take the blood pressure every visit.

Investigation:

- **Blood test**: to know her blood group, CBC to look for anemia or infection
- **Urine test**: analysis and culture
- **Rubella IgG**
- **RPR**: looking for syphilis
- **Hepatitis B tests**
- **HIV test**

Postpartum Report

To write a postpartum report you should be with the mother in the labor room, OR you can take history from the mother and midwife. Here you will find most important points to write a postpartum report.

- History Taking:

#patient profile

Name, age, occupation, residency, Gravda and Para, blood group (Rh +/-). When did she deliver her baby? Sex of the baby? What was age of gestation when she delivered? Mode of delivery? (Normal vaginal spontaneous or assisted , CS)

 # Current pregnancy

When was LMP? Certain about it? How was the pregnancy confirmed?
Was the pregnancy wanted? Planned?
Did she have regular antenatal visit? Did she was on tonic (multivitamins, folic acid, iron, …) ?

#Labour

labour began by? (Painful uterine contractions, increasing in duration and frequency)
When did the contraction start? Followed by? (a show and spontaneous rupture of membrane / a show but no spontaneous rupture of membrane / a spontaneous rupture of membrane / neither show nor spontaneous rupture of membrane).
When was she admitted to the hospital?
Was her cervix dilated at the time of admission? And how much "by cm"?
When was she sent to delivery? Time, and how much the cervix was dilated at this time?
first stage lasted for? Second stage lasted for?
Was she given induction? (oxytocin, PGE, ….)
Which type of analgesia she was given?
The delivery was? (Spontaneous, instrumental, CS). If instrumental OR CS why?
Time of delivery ? Weight of baby? And if he/she was admitted to the ICU? And why?

 # Lochia

Color? (Red, brown, white,..) Odor? (Odorless, pungent odor), are there clots?

 # Since she returned from delivery

Is she ambulatory now? Did she empty her bowels? did she experience some flatus? Did she void her bladder? Is there pelvic pain? Any other pain? Is she breastfeeding? Or planning to? Is she planning for contraceptive?

- **Then continue with gyne, past obstetric, surgical, medical and family history.**

Ultrasound (U/S)

- Two types :

1) Tansvaginal:

Used in the 1st trimester of pregnancy

5 wks → sec	hCG 1,500 IU/L
6 wks→ pole	hCG 5,200 lU/L
7 wks→ heart activity	hCG 17,500 IU/L

2)Transabdominal:

— Used after the 2nd trimester (14 wks)

- U/S Benefits:

- **1St trimester →**
  1. accurate dating of pregnancy
  2. visualizing the gestational sac
  3. site of implantation (intrauterine or not), R/O ectopic pregnancy
  4. single tone or multiple (# of gestational sacs)
  5. fetal viability (fetal heart)
  6. nuchal translucency measurement (<3mm→NL, >3mm →screen for Downs)
- **2nd trimester →**
  1. cervical length and changes
  2. cervical incompetence
  3. ruling out fetal anomalies, echo
  4. amniotic fluid index
     - — at 14-16 wks →placental growth start to complete
     - — heart oscillation start at 1 3 wks
- **3 trimester →**
  1. placental location in relation to the internal cervical os
  2. assessing Fetal growth and age growth ratio (biometric measurements), and to r/o IUGR.
  3. estimation Fetal weight
  4. presentation after 37wks (bcz 5-10 chancy that breech change to cephalic btw 37-39wks)
  5. blood flow in the umbilical cord
  6. biophysical profile
  7. post mature placenta signs i.e. calcifications
  8. if u suspect IUFD
- **others**
  1. trophoblastic diseases
  2. vaginal bleeding or abdominal pain
  3. fibroids
  4. Locate IUCD that was in uterus at time of conception
  5. chorionic villus sampling or amnocentesis under the guide of U/S
  6. hx of exposure to toxogenic, teratogenic materials.

Cardiotocography (CTG)

- It assesses fetal wellbeing by measuring the relationship between fetal heart and uterine contractions during labor.

- How to read it?

1. Name of the patient
2. Date and time
3. GA
4. Base line heart rate 5. Variability

→ **Nl 120—160b/min**
Tachy >160
Brady <120

1) Short-term or beat-to-beat variability: intervals btw successive mechanical event of cardiac cycle.
nl 5 — 25 b/min <5 b/min → Fetal distress
2) Long term variability: frequency and- amplitude of change in the baseline rate. Nl 3 — 10 cycles/min

6. Fetal heart changes in relation to uterine contractions:
   - No change
   - Accelerations: the normal response

At least 2 acc. of> 15 b/m over the baseline that lasts 15 sec within 20 mm

   - Decelerations

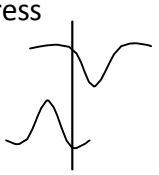
A. Early decelerations

- Benign. doesn't indicate fetal distress
- Fetal response to head compression (when head is engaged. (?CPD, internal monitoring, sterile PV exanimation). head pressure → ICP → vagal response

(seen on head engorgement)
— Mirror image of uterine contractions →
Onset of decal. Coincident with and ends with it

B. Late decelerations

- Uteroplacental insufficiency → hypoxia, acidosis → fetal distress
- Onset of decel. to the right of UC (i.e. starts after UC ends)
- Severity is graded by amplitude of drop in



FHR Mild <15 beats/min
Moderate 15—45 beats/min
Severe > 45 beats/min

— Are ass ē low scalp blood pH and high base deficit indicating metabolic acidosis (anaerobic metabolism). Nl PCO2 and PO2 slightly decreased due to Bohr effect (shift to the left of the O2 dissociation curve caused by acidosis)
— Fetal hypoxia arid acidosis are more pronounced with severe decelerations.

C. Variable decelerations (most common seen)

— Umbilical cord compression (partial or complete)

– Cord compression causes sudden in BP in the central circulation of the fetus.
  – Fetal blood gases shows respiratory acidosis with a low pH and high CO2
  – If compression is prolonged then hypoxia is also present → combined respiratory + metabolic acidosis.
  — Decelerations are not related to the UC
  — severity is graded by the duration of deceleration
    Mild <30 sec
    Moderate 30 — 60 sec
    Severe > 60 sec
    When FHR < 80 bpm →loss of P wave in fetal ECG →nodal rhythm or 2nd heart block
  — Most commonly seen in 2nd stage of labour

D. Mixed patterns

— Are difficult to define and may exhibit characteristics of any of the mentioned patterns.

This is CTG of was taken on day, date, hr, GA is _____
FHR baseline is _____
Good/ decreased beat to bat variability.
It is reactive/ non-reactive (according to the accelerations)
There is no / there is decelerations (specify the type).

Causes of decreased variability:

1. fetal acidosis (pH nl 7.25— 7.30)
2. fetal sleep (usually lasts for 25 mins)
3. maternal sedation with drugs
4. premature < 28 wks

Causes of fetal tachycardia (>160 bpm):

1. excessive use of oxytocin for augmentation/ induction of labor
2. ↑maternal temperature (fever)
3 Intrauterine infection
4. Hypoxia (in the 1st few mins)
5. fetal movement/ stimulation (if there are accelerations without UC)
6. medications: terbutaline, epinephrine
7. anxiety
8. maternal hyperthyroid
9. prematurity (as the nervous system is not yet well integrated, also there is less variability)

Cases of fetal bradycardia (< 120 bpm):

1. Hypoxia
2. Medications : narcotic + sedation Epidural anesthesia
3. maternal supine hypotension syndrome
4. corde prolapse/ prolonged compression
5. maternal hypothyroid
6. sleeping cycle (not more than 40 mm)

- **Causes of <u>fetal distress:</u>**

1. Fetal:
   - Anemia
   - infection
   - Twin-twin transfusion

2. Umbilical
   - one artery
   - hematoma
   - true knot
   - short cord
   - vasa previa
   - nuchal cord

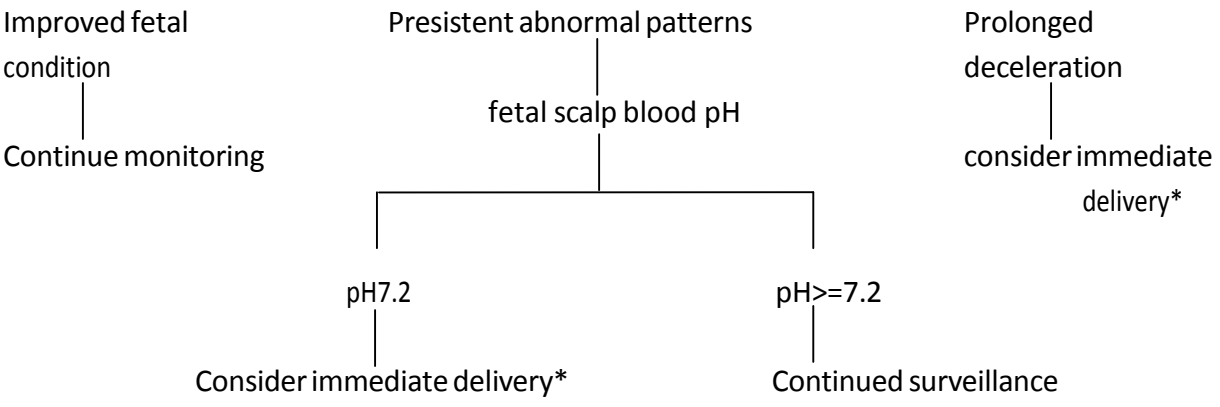
3. Placental
   - Abruption
   - infarction
   - postmature placenta

4. Uterine
   - tetanic contractions
   - hyperstimulation

5. Maternal
   - HTN
   - Hypotension
   - Severe anemia
   - Cardiac diseases
   - Pulmonary
   - Seizures

Management:

1. Change maternal position from supine to lt. or rt. Lateral (to avoid. hypotension due to pressure on IVC).
2. Give 100% O2 by facemask
3. Discontinue Oxytocin (excludes uterine hyperstimulation)
4. Consider tocolytics (Terbutaline) to relieve uterine atony
5. Monitor maternal BP (excludes hypotensive episodes due to epidural anesthesia),and correct hypotension.



* if stage 1 of labour → emergent C/S
  if stage 2 → assisted NVD

Amniocentesis

- **Definition:**

Removal of amniotic fluid by transabdominal aspiration for diagnostic and therapeutic causes.

- It's the most common invasive prenatal procedure.

- **Indications:**

1- to detect genetic diseases and chromosomal (single gene defect)anomalies at the 20th weeks of GA. (e.g.: cystic fibrosis, sickle cell disease, fragile X syndrome)

2- biochemical testing >> αFP level
- normally it's found in trace amounts
- elevated αFP >> fetal dorsal or ventral wall defects. NTD (neural tube defects, gastroschesis) even if the U/S is normal

3- neonatal lung maturity (minimal risk of RDS):
- phosphatidyl glycerol
- L/S ratio

4- bilirubin

5- infection:
- diagnosis of preterm chorioaminitis in the amniotic fluid >> (gram stain, WBC count)

6- drug administration

7- amnioreduction
- polyhydramnios:
  a- increase fetal urination
  b- decreased swallowing
- T to T transfusion

- **Complications:**

1- early amniocentesis >> increased risk of abortion (1%) 2- post procedure leakage

2- club foot (<1%)

3- infection

4- preterm labor

5- injury to the baby or the mother

❖ **Women who have significant risk of genetic diseases**:

- ≥ 35 years old
- Family history of certain birth defects
- Abnormal U/s - Previous child with birth defect

- It can detect:
  - down syndrome
  - sickle cell disease
  - Tay Saches disease
  - CF
  - Musculal dystrophy

- amniocentesis is done at 15-18th weeks of gestation
- Cordocentesis (percutanous umbilical sampling):
  1- fetal hematocrite in hemolytic diseases >> replaced by U/S, Doppler
  2- rapid fetal karyotype evaluation

Gynecological & obstetrics Instruments

Hegar's Dilator/ Das's dilator

Uterine sound

Its a long instrument with blunt tip (To avoid perforation)

The angle helps to negotiate **curvature of the uterus** (Anteflexion).

It is used for **measuring uterocervical length , length of the cervix** ,To feel for any pathology inside the cavity like fibroid (Sub mucus, polyp) Congenital anomalies like septa or bicornuate ut., Adhesions. To feel for the misplaced IUCD.

Uterine Curette

Flushing curette

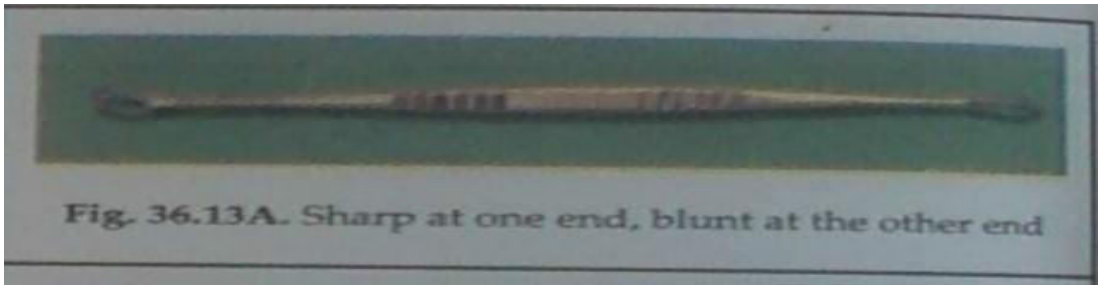


Fig. 36.13A. Sharp at one end, blunt at the other end

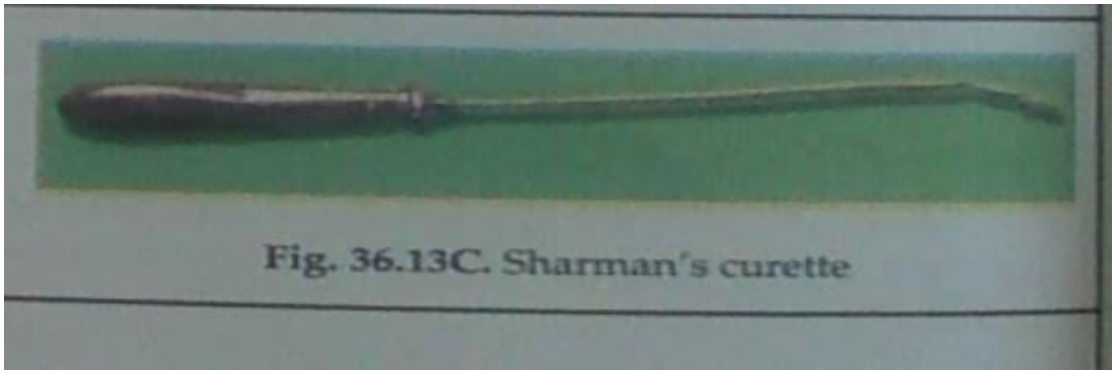
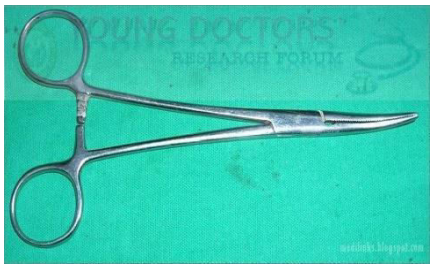


Fig. 36.13C. Sharman's curette

Use for scraping endometrial cavity to obtain sample for histopathology.

Artery forceps

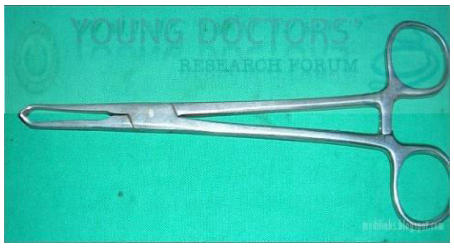


1) It can be used as a hemostat used for clamping bleeding vessels during haemorrhage.

2) grasping tissue at the time of operation(Opening and closing peritoneum) .

3) It is also used to hold stay sutures.

Allis' Forceps



This instrument is used for grasping tough structures like Rectus sheath or fascia in operations like tubectomy, LSCS (lower segment caesarean section) ,abdominal hysterectomy.

Ayre's Spatula

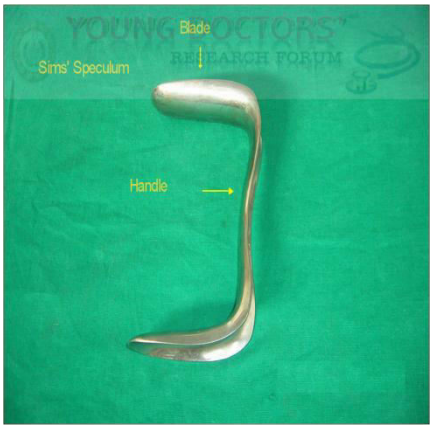
Is Used for taking Pap Smear for screening of carcinoma cervix.

Cusco's Speculum (Duck's Speculum)

Used for routine examination. Because of limited opening only few procedures like taking of Pap smear, insertion and removal of Copper T can be done

Wider area for inspection

Sims' Speculum



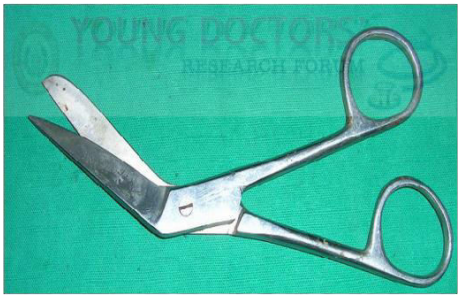
Sims Speculum is used for inspection of vagina and cervix in.
1)Used in Gynae OPD for following procedures : Taking Pap Smear , Insertion and removal of Copper T , Colposcopy ,Taking swabs, (HSG).
2)Used in Gynae Operations : D&C , Cervix Biopsy , Vaginal Hysterectomy , Repair of Vesico vaginal fistula, Hysteroscopy. 3) Use in Obstetrics : For inspection (Bluish discoloration in early pregnancy, local cause for threatened abortion, local cause in APH.

Curved mayo scissors

Straight mayo scissors

Bonney scissors

Metzenbaum scissors



Episiotomy Scissors/ perineorrhaphy

Dissecting forceps (toothed)

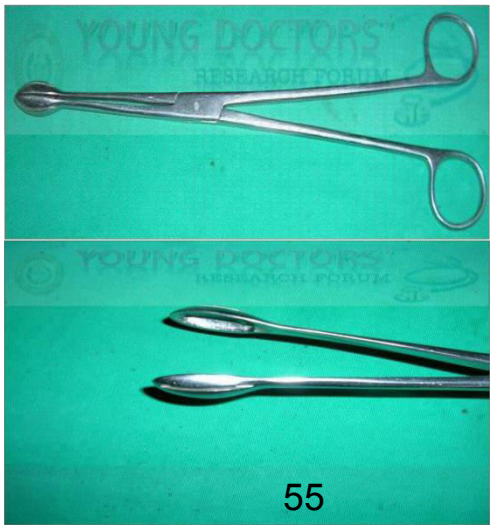
Dissecting forceps (non toothed)

Kocher's Forceps (Clamp)

1)This instrument is used for holding fallopian tube in hysterectomy.

2)for salpingectomy in ectopic or oophorectomy in ovarian mass.

Ovum Holding Forceps



This instrument is used for removing the products of conception in inevitable, incomplete abortion and in MTP operations

Suction Curette

This instrument is used for first trimester MTP, suction of vesicular mole.

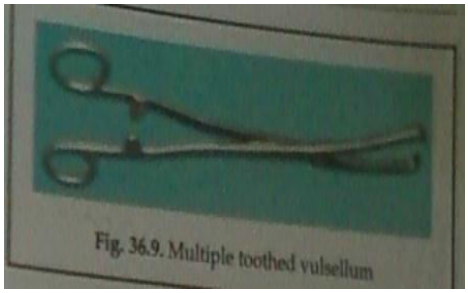
Shirodkars Cerclage Needle

This is specially designed needle for putting stitch around the cervix.

Punch biopsy forceps

To take biopsy from the cervix.

Multiple toothed Vulsellum

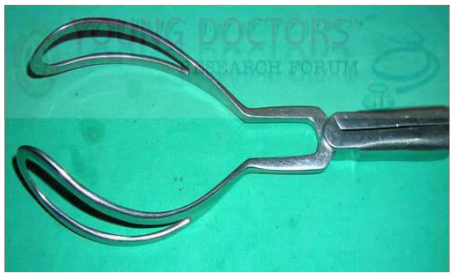


This instrument is used for grasping the cervix, in procedures like **Insertion of IUCD , Cx Biopsy D&C, First trimester MTP with Suction Evacuation. Cx Biopsy , Fothergills operation, Vaginal Hysterectomy**

Single toothed Vulsellum

To hold the cervix after opening the vault of vagina and to give traction while the remaining vault is being cut in total abdominal hysterectomy

Wrigley's Forceps



Obstetric forceps for out let forceps delivery

Simson's Short forceps is straight forceps with only cephalic curve and no pelvic curve

Simpson

Piper

Kieland

Vaccum Extractor (Vantouse) - Sialastic Cup/

Metallic cup

Alternative to forceps delivery

Can be used when rotation is not complete.

Produces artificial caput called chignon.

Not to be used in pre term

Pinard's Fetal Stethoscope

This is used for auscultation of fetal heart

Now rare used!

Umbilical Cord Cutting Scissors

Umbilical Cord Clamp

General notes

-Pregnant lady >35 yrs → higher risk of toxaemia and the complication.
-Pregnant lady >40 yrs → very high risk, you have to screen for chromosomal abnormalities.
-Pregnancy is 40 wks from the last menstrual period.
-EDD nighler rule +7days, -3 months, +1 yr ror regular 28days period,
If 21days→ EDD-7
If 35 days→ EDD+7
- Term 37-42 weeks
- post term > 40wks
- Post mature>42 wks
- The father's blood group is only important if the mother is O+ve or Rh-ve.
- labour pain:-
- Colicky pain -starts mild and increases in severity and freguency.
- gradual onset -from the lower back to the lower abdomen.

- moderate contractions every 10 minutes.
- false labor pain: come at irregular periods.
- normal fetal movements are 10-15 kick/ hr.
- FTNVD i.e full term normal vaginal delivery:
1- 1 fetus. 2- alive. 3- vertex presentation. 4- not induced labor.
5-no use of instruments. 6- with or without episiotomy.
7- no post-partum complications.
8- the baby goes home with his mother.

-postnatal ward follow up:
1- bleeding:
Normal bleeding is <500ml. Lochia is < 100ml.
If > 500ml → postpartum hemorrhage (PPH).
2-passage of urine.
3-after pain.
4-lactation.
5- Postpartum sepsis.
6- Pain at episiotomy site.
7-consider contraception.
8- Fundal height and uteru (consistency).

-Missed period → for 4 weeks.
-Amenorrhea→ for 8 weeks.

-baseline investigations for pregnant lady:

1-Hb. 2-hepatitis screen. 3- sugar. 4- rubella titer(IgM, IgG)
5-blood group. 6-urine analysis. 7-protein.
8-assymetric bacterurea → increase the risk of abortion.

-1st trimester 12wks.
-2nd trimester 12-28wks.
-3d trimester 28-40wks.

-HCG contribute for N/V in pregnant lady.
- increase in: -twins. →may lead to hyperemesis gravidarum.
- molar pregnancy.

-gestational DM →24wks.

-If DM at 18-22 wks → detailed morphology scan to diagnose congenital anomalies.

- **PP is C/I for NVD or PV.**

-causes of fetal anomalies:
- Rh incompatibility →D → major due to female –ve and male +ve.
→E,C → minor due to blood transfusions

-polyhydraminos : 1- increase in urine →DM
2- decreased absorption →GI obstruction.
3- increase -------- increase surface area in ------
And amp----------

-after c/s we discharge the patient after exposure of the wound on the 3d day post operation .
- **normal baby weight 2.5kg -4.290kg.**
- **ddx of fundal height less than date:**
1. wrong dating.
2. ROM and loss of lichor.
3. oligohydrominos.
4. SGA. Ask abt the weight of the previous baby.
5. IUGR * maternal - CVD-smoking
- antiphhospholipid syndrome
- respiratory - alcohol addiction
* Placental *fetal

Active management of third stage of labour:

Syntometrine (IM) (Syntocinon 5u, Ergometrine 0.5mg) with delivery of anterior shoulder
OR *Syntometrine* (IV) with crowning of head.
Controlled cord traction

Signs of placental separation:

1- Gush of fresh blood
2 - Elongation of uterus
3 - Elongation of cord

Rule: never ever to induce labour in breech.

Forces during normal vaginal delivery:

Uterine contractions	50%
Gravity	20%
Pushing down by mother	30%

Couvelaire uterus: Blood may force its way through the uterine wall into the serosa and this occurs in abruption.

Risk factors:

Hypertension
Trauma
Over distension of uterus
Smoking
Folic acid deficiency
Short cord
Prolonged rupture of membranes
Increasing maternal age (> 35 y) and parity or < 20 y
Abruption in previous pregnancies

Symptoms of pelvic prolapse :

Something coming down
Frequency
Urgency
Dysuria
Recurrent UTI

Diabetes in pregnancy

Never ever allow diabetic baby to pass into postdate

Indications for GTT:

Obesity
Family history of DM
Congenital anomalies
Polyhydromnios
Macrosomia
Unexplained stillbirth, intrautrine death and early neonatal death
Glucosuria: one reading in 1st trim and two readings in 2nd trim.
Recurrent UTI

Effect of diabetes on the fetus:

Congenital abnormalities
Hypoglycemia
Hyper viscosity syndrome
Macrosomia
Stillbirth
Polyhydramnios
Hyaline membrane disease
Hypocalcaemia, hyperbilirubinemia
Apnea and bradycardia
Traumatic delivery
1st trim abortion

Polyhydromnios:

Multiple pregnancy
Inability to swallow (esophageal and duodenal atresia) Maternal DM
Anencephaly and spina bifida
Idiopathic

Oligohydromnios:

Postdate
Rupture of membranes Idiopathic
IUGR
Placental insufficiency Urinary tract anomalies Maternal drugs

Iron requirements during pregnancy:

Body store of iron is 1000 mg 150 mg for placenta
150 mg for lactation 500 mg for fetus
500 mg for mother (increase in red cell mass)

Uterus returns to be pelvic organ after 14 days.
Uterus returns to normal size after 6 weeks.
CS is performed at 34th week in previous repair of uterine rupture.

Conditions that cause early maturity of surfactant:

Hypertension (PET)
PROM
Chorioamnionitis
Corticosteroids: 12mg twice IM 12 hours apart DM causes delay in maturity of surfactant.
Maturity of surfactant is determined by ls RATIO
Normal is 2:1
5 cc is taken from amniotic fluid and mixed with 90% 5CC alcohol

HCG

Secreted by trophblastic tissue
Shares alpha subunit with LH, FSH and TSH
HCG stimulates progesterone production by corpus lutum In 1st trim suppresses immunity.
Two peaks occur in first trim and 22-26th week
Normal levels double every 36-48 hours
Low levels occur in ectopic pregnancy.
Abnormally high levels occur in molar and multiple pregnancy.

First baby examination: examination immediately after delivery of baby to discover congenital anomalies which can be corrected early.
Such as: DDH PDA undescended testis imperforated hymen Spina bifida testicular feminization crainiosynostosis **Adequacy of pelvis:**

By abdominal examination: head is engaged By PV: sacral promontory (diagonal diameter) Sacrosiatic notch accommodates two fingers Curve of pelvis
Ischial spines are not prominent
Subpubic angle accommodates two fingers

Rupture of membranes:

Infectio
n
Trauma
CPD
Occiptoposterior presentation

ULTRASOUND

Tools used for estimating gestational age:

Last menstrual period
Fundal height
Ultrasound
Previous medical notes

Biophysical profile:

Breathing movements
Tone
Gross body movement
Amniotic fluid volume
FHR

CTG

Early deceleration:

deceleration begins and ends with contraction

Early deceleration is benign and caused by head compression

Late deceleration:

Variable deceleration: comes sometimes before contraction and other times after contraction and results from cord compression.

Perioperative care

Tests prior to general anaesthesia

CBC

Blood sugar

Urea and creatnine (KFT) Liver function test

MSU

Tumour markers (if indicated) e.g CA-125 is nonspecific

Endometriosis, fibroid and epithelial ovarian tumours.

CXR, ECG and ultrasound

Complications of anaesthesia Cardiac arrest

Respiratory arrest Malignant hyperthermia Scolin apnoea

Surgical complications:

Bleeding

Injury to bladder, ureters and bowel.

Postoperative follow up:

Analgesia

IV fluid 3 liters

Nill by mouth till defecation Diuretics

Early Ambulation Try to cough Taping on chest

Ask about: Cough

Vaginal Bleeding or from incision Vomiting

Defecation Flatus

Abdominal pain

Urination

Vital signs

Abdominal examination:

By **inspection**:

shape of abdomen (distension)

Dressing: if oozing and look for signs of cellulitis By **palpation**:

Level of uterus

Guarding and tenderness Mass

By **percussion***:* gas

By **auscultation**: Bowel sounds Lower limb for sings of DVT **Causes of fever postoperative**

Day one: reactionary fever due to stress and anaesthesia

Day two: chest infection, atelectasis, UTI and wound infection

Day three: breast engorgement, chest infection, UTI, wound infection and DVT

Most common time for DVT is early 2nd week postoperative

Folleys catheter

Reduce risk of injury during operation by maintaining bladder empty.
Full bladder interferes with contraction and retraction of uterus, empty bladder allow Colour of urine gives clues about hydration status and injury to bladder and ureter
It is used in artificial rupture of membranes and IOL.

Bleeding after 24th week of gestation:

Onset is sudden or gradual
Amount of blood Associated with pain or not Uterine contractions
Vaginal discharge
Hypertension Smoking
Trauma
Folic acid intake Fetal movements
Last sexual intercourse Last cervical smear Last antenatal visit

Fundal height

More than gestational age:

Wrong date Multiple gestation Macrosomia
Pelvic mass: full bladder and fibroid in LUS Fibroid in fundus
Polyhydromnios

Less than GA: Wrong date Small fetus
Oligohydramnios
Transvers lie

2nd trim

Cervical incompetence Fibroid
Thrombophilia Infection
Bicornuate uterus RH incompatibility

Recurrent miscarriage: Cervical incompetence Submucus fibroid
Balanced translocation PCOS
Syphilis
Uterine anomalies

Watery vaginal discharge:

Pure watery or mixed with other discharge Amount
Oder
Previous vaginal discharge Last intercourse Symptoms UTI
Foetal movements Use of

IUCD History of trauma
Cough and bronchial asthma

Dysmature baby: Height is increased Long hair and nails
Wrinkled skin
Low birth weight

Braxton-hicks contractions:

MgSo4:

Used to terminate convulsions in PET and as tocolytic drug.
Dose is either 6g over 10 minutes then 2g every hour for 24 hours OR 4g over 10 minutes then 1g every hour for 24 hours **Monitoring levels of MgSo4:**

1. Plasma levels
2. Respiratory rate
3. Reflexes

Effects of MgSo4 can be reversed by **calcium gluconate**
Aim of antenatal care is to save health of mother and baby.
After CS or NVD, uterus should be one finger above or below umbilicus All physiological changes of pregnancy occur in first 8 weeks of gestation.

How can you differentiate between growth retarded and premature baby? IUGR cries loudly and has wrinkled skin
Premature baby has normal skin and cries weakly.

How can you differentiate between Sheehan syndrome and premature ovarian failure?

Features of normal labour:

Spontaneous onset
Single cephalic presentation 37-42 weeks of gestation No artificial interventions Unassisted
Duration less than 12 hours in nulliparous and less than 8 in multiparous.

Preterm labour pain:

pain due to uterine contractions before 37th week of gestation. Cervical dilatation of at least 2cm and effacement is 60%.

Effects of fibroid:

Menorrhagia Recurrent miscarriage Pressure symptoms
Malignant transformation (less than 1%)

Labor Terminology

- Labor is defined as contractions that cause cervical change, either effacement or dilation. It requires accommodation between fetal head and pelvic canal. (Largest and least compression: important in both cephalic and breech).
Fetal head: the fetal skull consists of a base and a vault (cranium). The
base to protect brain stem

Frontal, sagittal, coronal and lambdoid sutures are present in the cranium and close at 6-8 weeks. Anterior & posterior fontanelle found at the intersection of the sutures

- **Landmarks:**
  - Nassion: the root of the nose
  - Glabella: the elevated area between the orbital ridges
  - Sinciput (Brow): area between the anterior fontanelle & Glabella
  - Anterior fontanelle: diamond shaped intersection between frontal, coronal, & sagittal suture.
  - Vertex: area between fontanelle and parietal eminences??
  - Posterior fontanelle: Y or T shaped between ???? & sagittal suture.
  - Occiput: area between lamboid sutures

- **Diameters:**

1- Suboccipitobregmatic (9.5 cm)
2- Occipitofrontal (11cm)
3- Supraoccipitomental (13.5 cm)
4- Submentobregmatic (9.5 cm)
5- The transverse diameters of the fetal skull are as follow:
- Biparietal (9.5 cm)
- Bitemporal (8 cm)

The pelvis is divided into true and false by levator ani:

- ***True*** being above (supports uterus in pregnancy)
- ***False*** being below (important during birth)

- Pelvic planes include:

1. Pelvic inlet: the fetal head enters the pelvis through this plane in transverse position.
2. Plane of greatest diameter: the fetal head rotates to the anterior position in this plane.

3. The plane of least diameter: is the most important from a clinical point of view, because arrest of descent may occur here.
4. Pelvic outlet.

- **Presentation**: the portion of the fetus that descends first through the birth canal i.e. vertex, breech, and face

- **Position**: the relationship of some definite part of the fetus (the dominator) to maternal pelvis i.e. occipitoanterior, occipitoposterior when denominator=occipit.

- **Engagement**: when the widest diameter of the fetal presenting part has passed through the pelvic inlet. In cephalic presentation, the widest diameter is biparietal. In breech presentation, it is intertrochanteric.

- **Lie**: the relationship between the long axis of the fetus to the long axis of the mother i.e. longitudinal.

- **Station**: the station of the presenting part in the pelvic canal is defined as its level below the plane of the ischial spines (the level defines 0 station, above it is negative and below it is positive), and it is measured in cm.

- In the majority of women, the fetal head becomes engaged when the bony presenting part is at the level of the ischial spines.

- The head position is considered to be synclitic when the parietal diameter is parallel to the pelvic plane, and the sagital suture is midway between the anterior and posterior planes of the pelvis. When this relationship is not present, the head is considered to be asynclitic.

- The advantage of asynclitism lies in that the biparietal diameter entering the pelvis measures 9.5cm in case of synclitism. But when the parietal bones enter in an asynclitic manner, the presenting diameter measures 8.75 cm. Therefore, asynclitism permits a larger head to enter the pelvis than would be possible in a synclitic presentation.

- Clinical pelvimetry (to assess the pelvic dimensions by clinical measurement) the pelvic dimensions by comical measurement) :

1-Diagonal conjugate: for AP diameter of pelvic inlet, the obstetric conjugate can be estimated from the diagonal.

*Conjugate which is obtained on clinical examination

The diagonal conjugate: is approximated by measuring from the lower border of the pubis sacral promontory using the tip of the 2nd finger of the point where the index finger meets the pubis.

If diagonal conjugate is >= 11.5cm. The anteroposterior diagonal is adequate.

2-Sacrum curvature – should be concave not flat or convex,

3- Midpelvis :

- Pelvis side walls should be parallel not convergent.
- Ischial spines prominence and bispinous diameter.
- Sacrospinous ligament and three fingerbreadths

4-Sacrospine and ischial notch

5-Outlet

1. Transverse diameter = bituberous diameter = at least 8.5 cm (using fist)
2. Pubic angle >= 90 (using thumbs)

- There are 3 measurements for anteroposterior diameter of the pelvis inlet:

1. ***True conjugate***: anatomic diameter that extends from sacral promontory to the top of the symphysis pubis, and has no obstetric value.
2. ***Obstetric conjugate***: extends from sacral promontory to the middle of symphysis pubis, and represents the actual space available for the fetus.
3. ***Diagonal conjugate***: extends from sacral promontory to the bottom of symphysis pubis, and is the only diameter that can be measured clinically.

* Obstetric conjugate = diagonal conjugate – (1.5 -2 cm)
But if the middle finger could not reach the sacral promontory while measuring the diagonal conjugate, the obstetric conjugate is considered adequate.

- **Radiological Indications (Pelvimetric x-rays):**

1 - History if pelvic trauma
2 - Clinical evidence or obstetric history of pelvic abnormalities

Do not do a radiological scan unless these two indications are present.

- Preparation of labor:

1. Lightning (2 or more weeks before labor)
2. False labor (Braxton Hicks; no cervical change accompanying irregular painless uterine contractions that occur in the last 4-8 weeks of pregnancy.
3. Cervical effacement (thinning of cervix as it is taken up by LUS).

- The fetal head in most primigravid women settles in the brim of the pelvis, while in multigravid women, this occurs at the beginning of labor.

Stages of labor

Stage 1: From onset of pain till complete dilation of cervix.
Duration: primi 6-18 hours multi 2-10 hours , It involves two phases:

Latent: - During which the effacement and early dilation occur.
-Till 3-4 cm, longer in primi
- It may overlap with the preparatory phase of labor, so its duration is highly variable.
- It may be influenced by many factors such as sedation and stress.

Active: - During which more rapid cervical dilation occurs.
- It begins when the cervix is 3-4 cm dilated, in the presence of regularly occurring uterine contractions.

-The minimal dilation during the active phase of the first stage is nearly the same in primigravid and multigravid females.

(1 and 1.2 cm/hour respectively).
- In order to measure the progress of labor, we look at: cervical effacement and dilation, descent of the fetal head, and the clinical pattern. Note that uterine contractions are not adequate alone.
- In case of slow progression, evaluation for uterine dysfunction, fetal malpostion, and cephalopelvic disproportion should be taken.

- **Management:**

1-Maternal position: if she is lying in bed, the lateral recumbent position should be encouraged to ensure perfusion of the uteroplacenta line.

2-Fluid: due to decrease in gastric emptying. Oral fluids are avoided. Use the IV route and place a canula for hydration, oxytocin and emergence.

3-Investigations: Hct, Hb, cross matching, blood type, Rh, etc…

4-Maternal monitoring: every 1-2 hours, monitor vital signs; blood pressure, pulse rate, respiratory rate, and temperature plus fluid giving.

5-Analgesia: should be adequate in first stage.

6-Fetal monitoring: fetal heart rate (external or internal) --- Delee stethoscope.

* FH monitoring --- in risky fetus; every 15 min but in 1st stage every 5 min Non risky; every 30 min but in 1st stage 15 min

7-Uterine activity: look at frequency, duration, and intensity every 30 min done by palpation. But for high risk pregnancies uterine activity should be monitored along with fetal heart.

8-Vaginal examination for cervical effacement and dilation, fetal station and position: in the latent phase and esp. if ROM, this examination should be avoided to decrease risk on infant. While in the active phase, examination is done every 2 hours.

9-Amniotomy: increases risk of chorioamnionitis in case labor is prolonged, and of umbilical cord compression and prolapsed if the presenting part is not engaged (this is artificial rupture of membrane).

Stage 2 : From complete dilation till the delivery of the baby. Durations : Primi : 30min – 3 hours multi : 5-30 min

- Forces involved in expelling the fetus are: abdominal pressure, uterine contraction and gravity.

* 6 movements of the baby enable him to adapt to the maternal pelvis:

1 - Descent by the 3 aforementioned forces, where the baby's head enters the pelvis in transverse position.

2 - Flexion (chin on chest) that is done by:

a) Natural muscle tone of the fetus (so flexion is present during labor)

b) Due to resistance from the cervix, walls of the pelvis and the pelvic floor

- The occipitoanterior position; the effect of flexion is to change the presenting diameter from the occipitofrontal to the smaller suboccipitobregmatic.

3 - **Internal rotation**: occurs when the fetal head meets the muscular sling of the pelvic floor (levator ani). This is not often accomplished unless the presenting part has reached the level of ischial spines (zero station), and is therefore engaged.

- Fetal head rotates from transverse to occipitoanterior or occipitoposterior.

4 -**Extension**: because the vaginal outlet is directed upward and forward, the extension must occur before the passage of the head through it (so the head emerge by extension in occipitant delivery)

- In occipitoposterior position, both flexion and extension must occur

5-**External extension:** returns back to its original position at time of engaged to align itself with the fetal back and shoulders (so the head becomes transverse again, and one shoulder becomes anterior with the other becoming posterior).

6- **Expulsion**: the anterior shoulder is first delivered under the symphysis pubis then the posterior shoulder over the perineal body.

Clinical management of second stage of labor :

Position: avoid supine position.
Fetal monitoring: every 5 min in risky fetal, and every 15 min if not.
Bearing down: hold breath with expulsion effort with each contraction. **Vaginal exam**: every 30 min for fetal descent, flexion,…etc
Delivery of the fetus: in lithotomic position, cleaned with antiseptic to facilitate the delivery of the head, apply Ritgen maneuver.
Do suction to the oral cavity and nares to clear the airways.
Clamp the cord 15- 20 seconds, holding the baby above the mother introitus.

Stage 3: From the delivery of the baby to the delivery of the placenta. This usually occurs 2-10 min after the second stage.

Signs of placental separation:

1. Fresh show of blood from the vagina.
2. The umbilical cord lengthens outside the vagina.
3. The fundus of the uterus rises up.
4. The uterus becomes more globular and firm.

- Only then you should attempt traction of the cord.

Stage 4: From the delivery of placenta to the stabilization of the patient It could take 6 hours postpartum.

- Ensure complete removal of placenta
- Manage any uterine bleeding
- Monitor patient status (blood pressure and pulse rate, e.g. increased pulse rate may indicates hypovolaemia)
- Repair episiotomy and lacerations.
- It is a routine to add 20 units oxytocin to IV fluid after delivery of the baby.

Perineallacerations:

1st degree: invades vaginal epithelium or perineal skin.
2nd degree: extends to subepithelial vaginal tissue in perineum and perineal body.
3rd degree: involves anal sphincter.
4th degree: involves rectal mucosa.

E.g :

Mrs._____is a_____year old female patient, G. P., admitted on____with labor pain. The pregnancy was terminated by a NVD of an alive male/female baby. The patient is stable.

INDUCTION OF LABOR

- 10-20% of all pregnancies

Indications:

- Postdate & post-term
- PROM
- IUGR, IUFD
- Rh-isoimmunization
- PET, DM
- Chorioamnionitis
- Fetal anomalies
- Placental abruption

Contraindications:

Absolute	Relative
- Previous classical C/S - Previous 2 C/S - Previous C/S with recurrent cause - Abnormal CTG – Fetal distress - Transverse or oblique lie Contracted pelvis - Placenta previa - Active genital herpes infection - Tumor occupying the pelvis / cervical cancer - Previous successful pelvic floor repair or incontinence surgery	- Severe PET - Breech resentation - Multiple gestations - Grand multiparity - Polyhydramnios Still not engaged

BishopScore				
	0	1	2	3
Cervical Dilatation	Closed	1-2cm	3-4cm	>=5cm
Cervical Length	>2 cm	2-1 cm	1-0.5cm	<0.5cm
Cervical			Soft	
Cervical Position	Posterior	Central	Anterior	
Station	-3	-2	-1-0	+1ormore

- Unfavorable score is < 7, start with prostaglandin followed by ARM +/- oxytocin
- Favorable score is>7, start with ARM +/- oxytocin

- Steps should be taken before induction

- History (assess GA & any contraindication for induction)
- Obstetric examination (lie, presentation & engagement)
- Vaginal examination (Bishop score, pelvic adequacy & position)
- U/S (GA, fetal wellbeing, weight, AFV, placenta)
- CTG

- Complications of Induction

- Failure& increased risk for C/S
- Uterine hyperstimulation and risk for rupture & fetal distress
- Prolonged labor & increased risk for instrumental delivery, C/S & PPH
- More painful so requiring more analgesia

- Prematurity
- Infection

- Prostaglandin

- PGE2 (prostin): vaginal pessary 3 mg or intra-cervical gel 0.5 mg
- PGE1 (cytotec): vaginal tablet 25 μg
- Dose can be repeated every 4-6 hours for a maximum of 3 doses
- If cervix becomes favorable start ARM
- If remains unfavorable after 3 doses, repeat in next morning if no urge to deliver
- Complications:
  - Uterine hyperstimulation
  - Diarrhea & hyperthermia (rare)

- ARM

- Indicated with favorable cervix
- Acts through Ferguson reflex
- Complications:
  - Cord prolapse & compression (if not engaged, so controlled ARM is advised)
  - Abruption (sudden decompression)
  - Infection (prolonged rupture before delivery)

- Oxytocin

- Indicated if effective uterine contractions are not reached after 1-2 hours of ARM
- Effective contractions (3-4 contractions, each lasting 50-60 seconds in 10 minutes)
- 10 units are diluted in 500 ml N/S (20 mU/ml)
- Start by 2 mU/min, doubling every 30 min until effective contractions are reached
- Maximum dose for Multipara is 32 mU/min & 64 mU/min for Primigravida
- Complications:
  - Uterine hyperstimulation
  - Hypertension
  - Neonatal jaundice
  - Water intoxication
  - After effective contractions are reached for 30 min, reduce dose to minimum dose required to maintain these contractions

- Management during Induction

- Explanation & support
- Good selection of method
- Proper doses of PG or oxytocin
- Monitoring of labor (fetal wellbeing, uterine activity, progress of labor, maternal wellbeing)
- Adequate analgesia (epidural)
- Management of uterine hyperstimulation & fetal distress

- Management of Uterine Hyperstimulation & Fetal Distress

- Immediately:
  1. Stop oxytocin infusion
  2. Give oxygen by mask
  3. Turn patient on her side
  4. Give rapid infusion of 250-500 ml N/S
- If persisted, give Terbutaline 0.25 mg bolus IV
- If persisted despite all measures, go for emergency C/S
- If controlled, you can restart oxytocin at low doses
- Persistent fetal distress:
  - Scalp blood sampling to measure fetal pH, If pH is > 7.25 this excludes hypoxia & acidosis, continue with vaginal delivery If pH is < 7.2, go for emergency C/S , If pH is between 7.25 & 7.2, repeat after 30 min, if becoming > 7.25 continue with vaginal delivery, but if persisted or worsened go for emergency C/S

Post Date Pregnancy

***Previable < 24weeks**
***Preterm 24 – 37 weeks**
***Term 37 – 42 weeks**
***Post term >42 weeks**
***Date 40 weeks**
***Post date 41-42 weeks**

- **Post date** is important because it's associated with:

1- IUFD
2- Oligohydramnios
3- Advanced maternal age (>40 years)
4- Congenital anomalies: anencephaly, fetal adrenal hyperplasia, absent fetal pituitary.

- Incidence: 12% of all pregnancies.
- Complications:

1-*Fetal postmaturity syndrome:*
a) Due to aging & infarction of placenta
b) Features (low subcutanous fat, 3lonf finger nails, dry peeling yellow skin (meconium stained), abundant hair, hyprthermic, hyperbilirubenia.

2-Macrosomia
3-Perinatal maturity (2-3 X higher)
4- Shoulder dystocia, birth trauma
5- C/S incidence higher, so is AVD
6- Oligohdramnios
7- Meconium aspiration
8-Placental maturation
9- IUFD

- Evaluate a patient who is 41 weeks + 2 days:

Hx:

1. Age
2. Confirm GA: sure at LMP, booked/unbooked, any discrepancies between uterine size
3. Previous hx of post date pregnancy
4. Family hx of recurrent prolonged pregnancy
5. Any previous U/S done that showed congenital anomalies, oligohydramnios
6. Any medical diseases that complicate prolonged pregnancy:
   - DM
   - Thyroid
7. Fetal movement (to exclude IUFD)

- U/S for:

1. Fetal biometry
2. AFI
3. Congenital anomalies
4. Placental maturation: a- Grade I: < 20%
   b- Grade II: 20-50% c-
   Grade III: > 50%

- Fetal monitoring: Assess fetal well being with BPP or modified BPP (NST & AFI)

- BPP:

1. AFI
2. NST
3. Fetal tone
4. Fetal breathing
5. Fetal movement

- Week 41: do NST
  a- Reassuring: conservative management b- Nonreassuring: induction
- Week 42: do NST + Bpp

- P/V exam.:
  To determine if cervix is inducible or not and obtain bishop score If the score >6 >> induction

- At 41 weeks + 5 days:
  Regardless of fetal monitoring or bishop score to avoid complications of delayed delivery >> induce labor

  - Note: induction of labor may increase risk of prolonged deliveries.

Cervical incompetence

- **(2nd trimester abortion)**

- Causes:

1. **Idiopathic** (mostly)
2. **Congenital**: uterine (Mullarian duct) anomalies
3. **Connective tissue disorders** e.g. Ehlers-Danlos syndrome
4. **Hx of cervical surgery** e.g. cone biopsy, dilatation of the cervix and cerclage (D&C), colposcopy, cautery
5. **Hx of cervical lacerations or trauma with vaginal delivery**: large baby, forceps use (complicated labour) (sx and trauma are the most common causes)
6. **Precipitate labour?**
7. **Hx of DES (diethylstilbestrol) exposure**

- Risk factors: (in addition to the mentioned above)

1. previous hx of cervical incompetence (hx of abortions in 2nd trimester)
2. macrosomia
3. multiple gestations
4. abortions
5. preterm labour and use of oxytocin and PG
6. Family hx

- Presentation:

— recurrent 2nd trimester abortion

1. Sudden ROM, gush of fluid
2. Painless (or mild labour pain) cervical dilation and effacement mostly in the 2nd trimester (? Or early 3rd trimester) → clinical: patient feels pressure in the vagina with amniotic membrane bulging into the vagina
3. may present with short term cramping and contractions
4. infection (vaginal discharge) — bcz mmbs are exposed

- Diagnosis:

— Routine examination?

— Insertion the Hegar dilator # 8 (if the patient is not pregnant)

— Hysterosalpingogram (HSG) → funneling of the cervix (also if nonpregnant)

— U/S looking at cervical length and funneling (in pregnancy)

- Management and Treatment:

a. If the patient is pregnant

< 24 wks previable fetus) → expectant management and elective termination (Blueprints) or emergent cerclage

> 24=wks (viable fetus) → - Bed rest
- Betamethasone
- Tocolysis (if there is contractions)

- Cerclage

b. If the patient wants to get pregnant and has hx or risk factors:

- Elective Cerclage (Stitch) at 12 — 14 wks of gestation, and is removed at 36 — 37 wks of gestation. (why stitch is not placed in the 1st trimester? Because the 1st common cause of abortion in 1St trimester is chromosomal abnormities, and cervical incompetence is a cause 2nd trimester abortion so we do cerclage at the beginning of the 2nd trimester)

— **types:**

1. McDonald stitch →at the cervical-vaginal junction
2. Shirodkar stitch →at the internal os (submucosal)
3. Transabdominal cerclage (TAC) →a permanent stitch, done if the previous 2 have failed, delivery by C/S

- Complications of cerclage during pregnancy:
  1. Infection (discharge)
  2. ROM
  3. PTL
  4. Lacerations or trauma

- **D.Dx:**

  1. preterm labour
  2. PROM
  3. Chorioamnitis
  4. uterine contractility

❖ **Case**:

- A 25 yr old female pt, p12 came to your clinic asking about precautions to be taken preconceptional to improve her chaces of live birth.
- Take hx to assess the cause recurrent abortions and what is your advice for her.

- OR A 20 yr old pregnant lady GA 10 wks $P0^{+2}$, came to your clinic asking abbot cervical cerclage :

1. introduce yourself
2. Age, G P, GA, LMP (if not given)
3. Details of abortion

— At which trimester → 1^{st} at 5^{th} month, 2^{nd} at the end of 4^{th} month
— pain, bleeding, liquor → sudden passage of liquor, no labour pain
— passage of tissues, histology
— D&C

4. Hx of P1 → vaginal delivery with the use of forceps
5. risk factors:
    - cervical lacerations (تقرحات).
    - Past cervical sx; cone bx (عينة لعنق الرحم), D & C
    - hx of DES use (not V. imp) → have you been told if your mother had taken any drugs that affect the cervix.
    - Congenital uterine abnormlities:
    - (biconruate uterus)
    - **Advice**:

You have cervical incompetence. عندك ضعف أو ارتخاء بعنق الرحم
We can help you by the placement of a cerclage at 12— 14 wks of Gestation, also explain types & when the cerciage is removed. بنساعدك إنو نحطلك قطبة بأول الشهر الرابع من الحمل
I'll give you folic acid (prepregnancy)
And follow up with me once you get pregnant

DDx:

(A) Obstetric causes of abdominal pain:

1. **Abortion:** before 20th week of pregnancy
   - Most common cause.
   - Inevitable: lower abdominal colicky, cramping pain.
   - Incomplete: persistent, cramping abdominal pain and vaginal bleeding
   - More dramatic picture if septic abortion is the case. (septic abortion ← result in)
   - Threatened abortion in many cases subside
2. **Placental abruption**
   - Painful vaginal bleeding
   - Uterine tenderness and back pain
   - Uterine contractions
   - Fundal tenderness
   - High frequency of contractions or hypertonus
   - Ttt: vaginal delivery is indicated urgently after the resuscitation of the mother.

   ↳ - passage of tissue - fever - foul discharge - tenderness - bleeding - abdominal pain
   - risk factors
   - past hx
3. **Uterine rupture**
   - Severe abdominal pain that may decrease after the rupture.
   - Bleeding (intra abdominal or vaginal)
   - Signs; -shock
     - -abdominal distention/free fluid
     - -tenderness
     - -easily palpated fetal parts
     - -absent fetal movements and heart sounds
     - -maternal tachycardia
   - ttt; immediate caesarean delivery with probable hysterectomy
   - prognosis: maternal mortality less 1%, but fetal mortality is 35%

   • ask about previous uterine surgery
4. **Fulminating PET**
   - Associated with severe upper abdominal (epigastric or right upper quadrant) pain due to edema and stretching of liver capsule which might even perforate.

   high Bp with sever epigastric pain, due to ① hepatic subcapsular hemorrhage ② liver hepatic hemorrhage ③ hepatic rupture
5. **Normal pregnancy**

   ttt: deliver no matter what the GA was.

Medical Committee
The University of Jordan

True labour pain : a colicky severe abdominal pain starting at the fundus and spreading downwards , regular in frequency and intensity, progressive, associated with back pain and producing gradual cervical dilatation and effaceement, with fetal movements and abdominal distention.

5. Round ligament strain
Occurs at 16-20 weeks due to rapid elongation of the ligament, could be unilateral or bilateral iliac fossa pain, radiating to the groin or thigh and improves on lying down.

7. Ruptured ectopic pregnancy
* Most common cause of maternal mortality in the first trimester.
Fourth common cause of maternal mortality over all the pregnancy (1/150 live births)
Hx and P/E :
Pain (abdominal or pelvic) + amenorrhea + vaginal bleeding
If rupture occurs, peritoneal signs and symptoms are present, and shock ensues.
Definite diagnosis is by laparoscopy.
Ttt: expectant, medical or surgical.

* pain: • Sever intermittent lancinating pain in LQ
• sudden onset
• Doesn't radiate
• backache is common

* ask about :
• IVF • IUCD • Previous Hx • vaginal bleeding

8. HELP syndrome

9. Urinary retention due to retroverted uterus
Chorioamnionitis → PROM, foul discharge, ↓ fetal movement

B. Gynecological Causes of Abdominal Pain

11. Rupture of ovarian cyst
Mild chronic lower abdominal discomfort > suddenly intensifies
History of mild trauma , or it may occur spontaneously (trauma → fall, intercourse)
Peritoneal signs and tenderness with guarding may be present
Other: hemorrhage into cyst and torsion
If corpus luteum in early pregnancy you have to give progesterone maintain pregnancy

* previous hx of ovarian cyst

2. Adnexal torsion
Pregnancy predisposes to it
Patient presents acute sever colicky unilateral lower abdominal pain , sudden onset
A tender adnexal mass is palpated , low grade fever
Ultrasound can be used , otherwise laparoscopy is performed
Ttt: surgery with preservation of as much ovarian tissue as possible

• affects teenagers in the 1st trimester

3. Degenerating myoma (Fibroid)
It occurs in 5-10% of pregnant women wit myomas, and occurs in the 12-20 weeks
Patients present with an acute onset of pain that is localized
Tenderness over a mass in the uterus , vomiting , low grade fever

• Previous hx of fibroid
• bleeding + fever

U/S shows mixes echo dense or echo lucent appearance
Ttt: medical with NSAID's or narcotics, or indomethacin but up to 32 weeks.

Non-obstetrical non-gynecological pain

1. Bowel obstruction
   Mostly associated with postoperative adhesions, and occurs in late pregnancy due to traction.
   Ttt:NG suction
   Fluids and electrolytes
   Laparatomy if not resolving in 2 to 3 days

2. Peptic ulcer
   Uncommon, or even improves in pregnancy
   If perforation or substantial bleeding occurs, surgery is not to be delayed

3. Acute cholecystitis and cholethiasis
   An increase in serum cholesterol and lipid levels in pregnancy, along with biliary stasis leads to a higher incidence of GB obstruction
   Nausea and vomiting along with right upper quadrant tenderness and guarding suggests biliary tract disease
   Ttt:medical or surgical with peritonitis

4. Acute pancreatitis
   Occurs due to increased lipids and GB stones
   Severe noncolicky epigastric pain radiating to the back, relieved by leaning forward
   Ttt:NG suction, fluids, pain relief and rest

5. Acute appendicitis
   Worse in prognosis and rupture is more common
   Diagnosis is masked by:
   -less prominent typical Sx
   displacement of the appendix superiorly and to the Rt
   leukocytosis is already there & suggestive
   ttt: surgery

6. Reflux esophagitis
   Due to:
   -increasaed intra gastric pressure
   -increased progesterone leading to a decrease in the sphincter tone

7. Acute fatty liver of pregnancy
   A serious complication that is peculiar to pregnancy with high mortality rate
   Presents late in pregnancy with pain, n&v and jaundice and elevated liver enzymes

Pyelonephritis
Most frequently in the 3rd trimester –
Flank pain fever rigours and urinary complaints ; progressive pain
premature uterine contractions are frequent if sepsis occurs
ttt:IV abs
monitoring for preterm labour

• previous hx of dysuria • previous urine culture

Ulcerative colitis Intestinal cramping with bloody diarrhoea or frequent bowel movements with pus, fever, dehydration and anaemia. Active disease should be controlled with steroids and/or sulfasalazine.

Crohn's disease Abdominal pain with fever and non-bloody diarrhoea. Treat with low residue diet, 5-ASA; maintain with sulfasalazine.

Cystitis Suprapubic pain and tenderness with malaise, flank pain, low back pain, nausea, vomiting, urinary symptoms, fever and chills.

Diverticulitis Mild cases have intermittent, diffuse abdominal pain which may be relieved by defecation or passing flatus and worsened by eating.

Gastroenteritis Cramping/colicky pain may be diffuse, starts in left upper quadrant and moves to other quadrants, often accompanied by diarrhoea and vomiting.

Intestinal obstruction Short periods of intense, colicky/cramping pain with other signs and symptoms of obstruction.

Pleurisy, pneumonia, pneumothorax These can cause severe upper abdominal pain referred from the chest.

Acute pyelonephritis Presents with progressive, pain in lower quadrant on one or both sides with flank pain and tenderness.

Renal calculi Classically presents with severe, colicky pain travelling from costovertebral angle to flank, suprapubic region and external genitalia. May be excruciating or dull and constant.

Sickle cell crisis Sudden severe abdominal pain with chest, back, hand or foot pain.

Splenic infarction Fulminating left upper quadrant pain, chest pain can worsen on inspiration.

always ask about: 1. anorexia 2. trauma 3. ↓ wt (PET).

↓ Contin. Cholecystitis :
- relatively common in pregnancy, occuring usually late
- 90% ↓ cases have gall stones, most ↓ which are visualized under US
- severe continous pain, localized to the epigastrium or RUQ
- vomiting, fever, jaundice in 25% ↓ cases
- WBC's are normal 12,000 – 15,000 /l
- frequently occurs following a fatty meal
- cholecystectomy only necessary in complicated cases, such as obstruction as can cause 15% perinatal mortality.
- cholecystectomy & Lithotomy ~~is~~ may be possible in advanced pregnancy
- ERCP and endoscopic retrograde sphincterotomy are possible if exposure to radiation minimized

1 trimester Vaginal Bleeding

D.Dx:

1. Abortion
2. Molar pregnancy
3. infection
4. cervical polyps or malignancy
5. Ectopic Pregnancy

Hx:

PP:

— Age(> 20,<40are at more risk)
— G P
— LMP(sure,cycleregularity,lactation,OCP),GA,EDD
— Systemic diseases
— Blood group,husbands bid grp

HOPI:

— Detailsofbleeding:
    1. amount:#ofpad,soakedornot,clots
    2. colour(freshred/ brown)
    3. onset,duration
    4. circumstancesofonset(e.g.postcoitalbleeding)
— Associatedsymptoms:
    1. passageof tissues/vesicles
    2. Abdominalpain+characteristics(SOCRATES)
    3. bleedingtendency
— Drugs :aspirin,heparin
— Risk factors:
    1. previoushx
    2. smoking,alcohol
    3. infection,PID
    4. DM.SLE,hypothyroid
    5. Surgeries
    6. intrauterinemanipulation
    7. IUCD
    8. IVF
    9. bloodgroup
— Askaboutpreviousinvestigations

Ask about each DDx

1) Abortion:

- Passage of tissues
- labour pain
- contractions
- Liquor
- Previous hx of abortions + details of the abortions (GA,cause…)
- hx of trauma, Fever, foully discharge
- Dilated / closed cervix upon examination

- **Risk factors**

1. smoking, alcohol
2. consanguineous marriage
3. maternalage
4. infection(TORCH)
5. DM,h ypothyroidism,SLE
6. cervicalincompetence
7. fibroid,previousD&C
8. Hx of DESuse

- Types:

1. Threatened
2. Inevitable
3. Incomplete
4. complete
5. septic
6. missed abortion

Diagnosis of recurrent pregnancy loss

Patients are often screened in the following manner:
First, a karyotype of both parents is obtained, as well as the karyotypes of the POC from each of the SABs if possible
Second, maternal anatomy should be examined, initially with a hysterosalpingogram (HSG). If the HSG is abnormal or nondiagnostic, a hysteroscopic or laparoscopic exploration may be performed.
Third, screening tests for hypothyroidism, diabetes mellitus, antiphospholipid syndrome, hypercoagulability, and systemic lupus erythematosus should be performed.
These tests should include lupus anticoagulant, factor V Leiden deficiency, prothrombin G20210A mutation, ANA, anticardiolipin antibody, Russell viper venom, antithrombin III, protein S, and protein C.
Fourth, a level of serum progesterone should be obtained in the luteal phase of the menstrual cycle
Finally, cultures of the cervix, vagina, and endometrium can be taken to rule out infection.

2) Molar pregnancy
1. Bleeding, passage of vesicles
2. Nausea & vomiting (↑pregnancy symptoms) PET<24 wks GA
3. Hyperthyroid

3) Infection
1. Discharge→ smell, colour
2. Fever
3. Previous hx of STD
4. dyspareunia

4)cervical polyps or cancer :
- Intermenstrual bleeding
- Post coital bleeding
- Previous Pap smear
- Weight loss

- Management: (according to the cause)
  — If the patient is already seen and examined, the ask about:
  — If not, do:
  - Admission
  - General examination and vital signs
    - Cbc ,Blood grouping and cross match for resuscitation
  - Vaginal examination for cervical motion tenderness ,assessment of the cervix (open or not), any visible sourse of bleeding

- Abdominal U/S→ uterine/extrauterine pregnancy
- Vaginal U/S → see fetal heart
- Speculum → local lesions
- Repeat βHCG for doubling

If it is missed abortion → ↓ in βHCG

5) Ectopic Pregnancy :

1. Abdominal pain, shoulder tip pain, painful defecation , Amenorrhea
2. Bleeding
3. Previous hx of ectopic pregnancy
4. hx of IUCD
5. hx of tube or pelvic sx
6. PID
7. IVF
8. Emergency OCP

☒ **Ectopic pregnancy**:

Pregnancy outside the endometrial cavity 95-97 % in the fallopian tubes (ampulla then isthmus).

- A common cause of maternal mortality in 1st trimester.
- Presentation: acute (20%) ,sub-acute(75%), silent(5%)

— Presentation

1. Classic triad (abdominal pain, vaginal bleeding, amenorrhea)
2. Shock
3. Sepsis
4. Shoulder-tip pain(lying supine)
5. Bathroom sign (blood in the pouch of Douglas)

- O/E: abdominal tenderness, adnexal mass, cervical excitation (unilateral) ,normal-sized uterus
- (If D&C was done: Arias Stella is pathognomonic)

— Hx. :

A-triad:

1) Amenorrhea: LMP and you must ask about the cycle: sure, days, regular, amount, intermenstrual bleeding, OCP, lactation, and how was she diagnosed to be pregnant.

2) Abdominal pain:

- Character of pain, site, severity, radiation esp. to the shoulder and hip
- associated symptoms such as dizziness
- Ipsilateral shoulder pain--------suspected rupture
-unilateral pelvic or lower abdominal pain

3) Vaginal bleeding: Color, amount passage of tissue, usually it is spotting and in the case of r rupture intraperitoneal bleeding

— Risk factors:
1-previous hx of ectopic
pregnancy 2-PID and infection
3-Previous tubal surgery ex. Tubal ligation, tubal adhesions
4-Use of associated technologies ex. IVF
5-Smoking (deero balkom feee nas bydakhnooo be elser)
6-Exposure to DES (diethylsilbiesterol)
7-Use of contraceptive methods, IUCD,PILLS THAT CONTAIN only progesterone

— Obs hx: G??P??
— Surgical and medical hx
— E-ddx:
- abortion:
  - previous hx of abortion
  - passage of tissue
  - passage lector
  - later pain

- ruptured corpus luteal cyst (complicated ovarian cyst) 3-adnexial torsion
  --- sever colicky abdominal pain then dull pain

- acute PID:
  - Previous STD: Urogenital discharge ,smell, amount, color
- Fever ,rash

- degeneration or liomyoma------previous hx of fibroid
  1-appendiicites------hx of appendectomy
  2-pancreatitis
  3-pyelonephritis------urinary symptoms:
  -Paravertebral pain
  - change in urine color
  - Change in amount

— P\E:
- Vital signs, hemodynamic stability, abdominal examination +PV
- Uterus is soft, normal size or slight increase, adnexial mass which represents ruptured corpus leutum
- Cervical tenderness

— Investigation:
- Beta HCG (to confirm pregnancy if positive
- If its level is>1500 iu/ml u can see by vaginal probe
- If it is level>3000 or 4000 by abdominal probe

- Quantitave measurement:
  - It must increase after 48hours>66%
  - It must increase after 72hrs> double

— U/S
- may show IUP so you are dealing with abortion
- may see adenexial mass (ovarian or tubal)
- Coledocal sac fluid (fluid in the pouch of doglus)
- Fetal heart activity in the adnexia

— Progesterone level:
>20 micro g/ml------good pregnancy
<5microg/ml----------bad pregnancy (ectopic or abortion)

— Culdocentesis (not done any more)
Dactson clotted blood-----ectopic pregnancy

— uterine curettage:
Used when the lady has history of passing tissue this tissue shows no chorionic villous e\p

— Laparoscopy definitive dx

— Management depends on:
1-patient condition stable, and if not stable interfere immediately
2-desire of future fertility
3- Site of ectopic pregnancy
4- State of e/p (ruptured or intact)
5-experience of surgeon

— Management

☒ Expected :no significant bleeding ,no significant pain, falling in beta hcg, no evidence of rupture (peritonitis), e\pin the tube, ectopic mass is less than4 cm by u/s

☒ Medical : used when
1-the patient is stable
2-no fetal heart activity
3- ectopic pregnancy less than 4 cm
4-beta HCG< 1000IU/ml
5- U/S shows no intrauterine pregnancy 6- D&c report no vilie

- drugs of choose: Methotroxate one shot 50mg/m2 IM then follow B HCG after 3-7days.
B HCG decrease by>15%after3-7days:ifB HCG decrease by<15% or platue repeat dose after 2 weeks

- If B HCG increases then surgery

☒ surgical:
- Salpingectomy, salpingiostomy, salpingectomy
- By laparoscopy if stable or by laparotomy if not stable.

Intrauterine Growth Restriction (IUGR)

- **Definitions :**

— **Small for gestational age (SGA):** fetuses whose estimated fetal weight. (EFW) is <10% for a given GA.(like any baby, the abnormality is in the wt only and all other parameters are normal→ the baby is healthy). It is familial in 85% of cases.

— **Large for gestational age(LGA):**fetuses whose EFWis>90% for a given GA.

— **IUGR:** when the estimated fetal weight (EFW)is< 10%for a given GA due to apathological process in utero caused by an external or internal insult with a resultant increased perinatal morbidity and mortality (6-10 times more than that for a normal grown fetus)

- It is often associated with smaller placenta and ↓amounts of AF.

- **Problems affecting IUGR fetuses**:
  1. Meconiumaspiration
  2. Intrapartum asphyxia
  3. polycythemia
  4. hypoglycemia
  5. mentalretardation
  6. Intrapartum fetal distress
  7. Hypocalcaemia and seizures
  8. IUFD
  9. ↑bilirubinemia?, hypothermia?

- **Incidence:**
  - IUGR→5-l0%
  - SGA→5%
  - both by using U/S for diagnosis to15%

- **Types of IUGR:**
  1. Symmetrical→ early onset(all parameters are affected)accounts for about 25% of cases.
  2. Asymmetrical→ late onset (some parameters are affected .some are normal ,the brain is frequently spared)

  Accounts for about 75% of cases

  (Caused by ↓nutrition and oxygen being transmitted across placenta)
  - Fetal wt is estimated at 28wks of GA, so early<28wks and late>28wks.(Inbooks,itis20wksbutwecan'testimatefetalwtat20wks)

- **Etiology:**

A. **Fetal factors**:→ causing Symmetrical IUGR

1. Congenital anomalies:
   - CVS anomalies(TGA & teratology of fallot)
   - OTT anomalies (gastoschisis & omphalocele)
   - CNS anomalies
   - Renal abnormalities

2. Chromosomal abnormalities:
   - trisomy21(Down syndrome)
   - trisomy 18 (Edwards syndrome), trisomy 13 (Patau syndrome)
   - Turner syndrome
   - Osteogenesis imperfect, achondroplasia neural tubes defects
   - Anencephaly y ,and others.

3. Intrauterine infections
   - (TORCH: toxoplasmosis, other infections ,rubella ,cytomegalovirus herpes simplex)
   - Accounts for 10-15% of IUGR

4. Uterine crowding :
   - Multiple gestations
   - Uterine anomalies (fibroids, bicornuate uterus)

B. **Maternal factors**:→ causing Asymmetrical IUGR

1. Chronic infections such as TORCH
2. low socioeconomic status
3. poor maternal nutrition
4. reduced uteroplacental blood flow:
   a. cardiovascular diseases
   b. HTN,PET
   c. Chronic renal disease
   d. Anemia ,sickle cell anemia, hemoglobinopathies
   e. collagen vascular disease (e.g. SLE, antiphosphlipid antibody syndrome)
   f. DM(in case of advanced severe DM due t extensive vascular disease and vasoconstriction)
5. Respiratory failtue || (pulmonary insufficiency)

6. Drugs, teratogenic exposure and substance abuse
    a. Cigarettes
    b. Alcohol abuse
    c. Antiepileptic & antimetabolite
    d. Chemo therapeutic agents
    e. Radiation exposure

C. **Placental factors**:→ causing Asymmetrical IUGR
(Any cause that causes↓placental flow → placental insufficiency→inadequate nutrients or blood supply to nourish the fetus)

1. Placenta abruption
2. Placenta previa
3. Placental calcifications
4. Placental thrombosis with/without infarction
5. Marginal cord insertion
6. Velementous cord insertion
7. Membranous placenta
8. Chorioangioma (aplacental tumor that may act like AV—malformation)

Low risk grp→1risk factor High risk grp→2 risk factors

- **Mechanism**: (how these factors lead to IUGR):

— Infection→ interfere with cellular development
— Chromosomal &congenital abnormalities→↓in cellular number
— Smoking →↓uteroplacental bld flow(SGA↑3x over nonsmokers)
— Cocaine→ vasospasm →↓uteroplacental bld flow (30% assē IUGR)
— Maternal diseases→↓ uteroplacental bld flow
— Placental abnormalities→↓placental mass→↓fetal O2and nutrients
— Multiple gestation→↓placental surface/ fetus ratio (18% of twins→IUGR)

* **Case**:
- 24 yr old pregnant lady, P1 GA 32 wks unbooked, sie vas , informed in a private clinic that her fetus is small.
What is your diagnosis and management?

Hx:
PP→
— Age. (risk <20,>40)
— Occupation (housewife ,worker) +nature of work
— Medical diseases
— Parity (if not mentioned in the question)
— Exact GA by LMP ,sure/not sure ,regularity ,lactating ,OCP
— Blood group(Rh isoimmunisation predisposes to IUGR)
— Booked/unbooked (if not mentioned in the question)

HOPI→

— Analyze the condition
— Predisposing factors
— Previous similar conditions(recurrence of IUGR is 25%in the next attack)
— Bad habits(smoking ,alcohol)
— Weight gain and nutritional status
— The whole family is of small size (SGA can be constitutional means familial)
— Drug intake (e.g. antihypertensives like Betablockers→↓bld flow to the fetus , heparin, cocaine, warfarin→IUGR and dysmorphic fetus)
— Teratogenic exposure (e.g. radiation and chemotherapy)
— Family hx of IUGR ,chromosomal or congenital anomalies

P/E:

— Vital signs→ BP (Gestational HTN)
Temp (infections, febrile and dehydrated)
— Fundal height (every 1 wk = 1 cm after 2O wks of GA) (↓ "Fundal height lag"→>3cm difference, in wrong date, Malposition and malpresentationm, IUGR, and oligohydramnios). It detects only 15% of IUGR.

— Fetal heart auscultation by sonicade (r/oIUFD)
— U/S:

1. Confirm GA
2. Singleton .twins,...
3. fetal heart
4. Presentation
5. Amniotic fluid

- Polyhydramnious + IUGR→ symmetrical chromosomal or infection
- Oligo + IUGR — asymmetrical, maternal or placental70 -80% of IUGR) (shunting of bld to brain →
↓ bld flow to kidneys→↓Urine output→↓AF)

Nl	10-15
↓	5—10
Oligo	<5
↑	15—20
Poly	>20

6. Placental abnormality
   - Placental grading:
     1. Ca2 + deposit
     2. Indentation in chorionic plate
   - Grade 0— no calcifications, no indentations
   - Grade 1— few calcifications,
   - Grade 2— calcifications along uterine wall+ indentation
   - Grade 3— significant Ca2+ deposit +indentation outline individual cotyledons Placenta of higher grade for GA may indicate ↓ placental function and IUGR.

7. Congenital anomaly
8. Estimated fetal weight (EFW)
9. Biometry → - Femur length (FL)
   - Head circumference(HC)
   - Abdominal circumference(AC)(the most imp one)
   - Biparietal length
10. HC/AC ratio

In nl fetus: < 32wks → HC> AC
32-34 wks → HC = AC, ratio =1
> 34wks→ HC<AC, ratio <1

In IUGR: symmetrical→ HC↓, &AC↓, ratio around 1
asymmetrical→ HC not affected & AC↓, ratio>1

11. Doppler study for the umbilical artery blood flow (looking at systolic filling and diastolic emptying)
   - Nl Doppler+↓ biometry→SGAvs . Symmetrical IUGR
   - Nl systolic and Reversed diastolic flow→Asymmetrical IUGR ,means heart decompensation with severe hypoxia and acidosis ,terminate pregnancy regardless he GA (bcz the nervous sys is damaged)
   - NI systolic and absent diastolic flow →asymmetrical IUGR, Ttt is according to liquor and placenta.
     - Average liquor+nl placenta tissue : expectant management
       Oligohydramnious OR abnl/ mature placenta :delivery

12. Middle cerebral artery study (MCA Doppler) for Rh-ve mothers
   - ↑ diastolic/systolic flow→means redistribution of blood flow (cephalization)→↑IUGR
   - If > certain number then if
     GA>34→deliver
     GA<34—U/S guided intrauterine bld trx
     (If no experienced doctors then deliver and give bld in NICU)

- Conservative management
  1. Bed rest→left lateral position to compression on the IVC
  2. Change bad habits(smoking ,alcohol)
  3. daily V/Sand maternal nutrition
  4. start certain medications
     — B ASA
     — Anticoagulation: LMW heparin(maintenance dose for mild cases and therapeutic dose for severe cases)
  5. Fetal monitoring:

  - Biophysical profile→weekly
  - NST→frequency depends on severity(once weekly to twice daily)
  - Estimated fetal weight ,Biometry →every 2wks

  - If there is continuous growth □Conservative management If there is static growth→Delivery

  Mode: 1. NVD (if instrument is needed in 1st stage, forceps are better to be used than vacuum bcz the latter has a risk of hematoma).
  2. C/S (2nd stage & there is even minor hypoxia and no dilatation)

- Outcome:
  - SGA→normal like any baby but small weight
  - IUGR continue as failure to thrive and will have some neurological abnormalities
  - ‘‘Catch up growth": is following up IUGR patients at age of 6 months.

    Asymmetrical → will catch up, nl ht and wt, nl utero examination

    Symmetrical → earing and visual problems, seizure attacks, the cant catch up

ABNORMAL EXAMINATION: LARGE FOR DATE

- A 23 years old, G1P0, 32 weeks of GA. On examination, fundal height was 37 cm. How to manage this patient?

- **DifferentialDiagnosis**
  - Wrong dates
  - Multiplegestations
  - Polyhydramnios
  - Fibroid
  - Macrosomia
  - Full bladder

- **History:**
  - **History of Present Pregnancy:**

    - LMP & history of previous menstrual cycles Diagnosis of pregnancy & U/S findings Singleton or multiple, fetal anomalies, previous assessment of amniotic fluid Any history of vaginal bleeding, abdominal pain, preterm labor

- **Risk Factors :**

  - Multiple gestations: Multipara, increased age, black race, family history, ovulation induction
  - Polyhydramnios: DM, multiple gestations, fetal anomalies
  - Macrosomia: DM, previous macrosomia, obesity, prolonged pregnancy
  - Multipara: DM, Age > 30, family history, previous macrosomia, obesity, PET, non-gestational DM

- **Examination (In additiontoincompatiblefundal height)**

  - Multiple gestations: Multiple fetal poles, different fetal hearts, presentation of 1st on
  - Polyhydramnios: Difficult to feel fetal parts or to listen to fetal heart, tense abdomen, fluid thrill
  - Fibroid: Asymmetric uterus, pelvic mass

- **Investigations**
  - U/S: Singleton or multiple AFI
  - HC, AC, FL (age & size) Glucose tolerance test

MULTIPLE GESTATIONS

- **Types:**
  - Dizygotic :fertilization of two ova, 2/3 of twins
  - Monozygotic :fertilization of one ovum, 1/3 of twins

- **Factors that increase incidence for dizygotic twins**
  - Race(blacks>whites)
  - Parity
  - Maternal age
  - Family history (mother being part of a twin)
  - Ovulation induction

- **Factors that increase incidence for monozygotic twins**
  - Incidence is constant

- **Placentation**
  - In dizygotic twins the placenta is always dichorionic –diamniotic
  - In monozygotic ,placentation depends on the time of fertilization

Fertilization	4days	8days	13days
Dichorionic Diamniotic	Monochorionic Diamniotic Monoamniotic	Monochorionic	Conjoined Twins
30%	70%	1%	1/600

- **Complications**

1. Increased rate of all pregnancy complications except post-term delivery
2. Increased risk of perinatal mortality due to preterm delivery &prematurity
3. Mortality rate is 2-3 times higher in monochorionic compared to dichorionic twins :
   Twin-twin transfusion syndrome(TTTS)
   Cord accidents (50% of monochorionic twins)
   Conjoined twins
4. Low birth weight (50% <2500g) & IUGR (40%)
5. Anomalies
6. TTTS
7. Increased risk for operative deliveries
8. APH&PPH

- Preterm labor
  - The most common contributor to prematurity
  - 50% of twins deliver preterm
  - Bed rest may prevent preterm labor
  - Cervical cerclage can be used only in cases of cervical incompetence
  - Tocolytics can be used like in singleton

- TTTS
  - Shunting of blood through AV malformations in the placenta
  - Occurs in monochorionic diamniotic twins (5-10%)
  - Donor twin is small, anemic & may have oligohydramnios
  - Recipient twin is large, polycythemic & may have polyhydramnios
  - Mortality rate is >50%

- Delivery of Twins
  - Continuous fetal monitoring is needed
  - Mode of delivery depends on presentation:

    Vertex-vertex :can be delivered vaginally

    Breech-vertex: C/S

    Vertex-non vertex:
    - Deliver vertex twin vaginally

      Turn non vertex twin to vertex and deliver vaginally
    - Vaginal breech ,deliver of 2nd twin if criteria for vaginal breech are met
    - Breech extraction
    - C/S of both twins

- HX:
  1. age
  2. parity
  3. LMP,EDD,GA
  4. Conception after ocp use
  5. 5-Fertility rx (ovulation induction rx)
  6. Rapid wt gain
  7. P.hx
  8. Hyper emesis
  9. Anemia
  10. APH/PPH
  11. PIH
  12. Spt. abortion
  13. u/s cong. anomalies ,IUGR,TTTS ,mal presentation ,IUFD ,placenta previa ,placental abruption

- P/E:
  1. Uterus large for delivery
  2. 2 fetal heart sounds
  3. Increase AFP ,B-HCG ,HPL for GA
  4. 3 fetal poles

- U/S:
  1. Determine chronicity : T sign→MC, λsign→DC
  2. Exclude fetal anomalies
  3. check fetal lie
  4. check placental site

Polyhydramnios

- **Definition:** Anatomically, polyhydramnios is defined as a state where liquor amnii exceeds 2,000 mL.

- **Clinical definition states**—the excessive accumulation of liquor amnii causing discomfort to the patient and/or when an imaging help is needed to substantiate the clinical diagnosis of the lie and presentation of the fetus.

- **Sonographic diagnosis** is made when amniotic fluid index (AFI) is more than 24 cm (more than 95th centile for gestational age) and a deepest vertical pocket (DVP) is more than 8 cm.

- **Incidence**: Because of different criteria used in the definition of polyhydramnios, the incidence varies from 1–2% of cases. It is more common in multiparae than primigravidae.

- **Etiology**: It may be the result of deficient absorption as well as excessive production of liquor amnii, which may be temporary or permanent.

- While certain maternal or fetal factors are found to be associated with hydramnios, yet the cause remains unknown in about 60%.
- The composition of the liquor amnii, however, remains normal.

1- **Fetal anomalies:** Congenital fetal malformations (structural and chromosomal) are associated with polyhydramnios in about 20% cases.
   - **Anencephaly—Hydramnios** is found in association with anencephaly in about 50% cases.
   - **The causes of excessive production of liquor amnii may be due to:**
     (a) transudation from the exposed meninges
     (b)) absence of fetal swallowing reflex and
     (c) possible suppression of fetal antidiuretic hormone leading to excessive urination.
   - **Open spina bifida**—increased transudation from the meninges.
   - **Esophageal or duodenal atresia**—preventing swallowing of the liquor. However, hydramnios is associated only in about 15% cases of esophageal atresia.
   - **Facial clefts and neck masses**—by interfering normal swallowing.
   - **Hydrops fetalis** due to Rhesus isoimmunization, nonimmune hydrops, cardiothoracic anomalies, fetal cirrhosis and fetal infections with TORCH and parvovirus B19 infection are often associated with hydramnios.
   - **Aneuploidy and genetic syndromes**

2- **Placenta**: Chorioangioma of the placenta: Tumor growing from a single villus consisting of hyperplasia of blood vessels and connective tissue results in increased transudation.

3- **Multiple pregnancy:** Multiple pregnancy is about 10 times more common than its overall incidence. Hydramnios is more common in monozygotic twins, usually affecting the second sac. In TTTS the recipient twin develops polydramnios.

4- **Maternal**:
a) Diabetes—It is more common in hydramnios. Hydramnios is associated with diabetes in about 30% cases. However, with adequate supervision, the incidence of hydramnios can be lowered. It is presumed that a raised maternal blood sugar → raised fetal blood sugar → fetal diuresis → hydramnios.
b) Cardiac or renal disease—may lead to edema of the placenta leading to increase in transudation.

5- **Idiopathic:** 50–60%

- **Polyhydramnios** may be:
  (a) mild: DVP more than 8–11 cm
  (b) moderate: DVP: 12–15 cm and
  (c) severe: DVP more than or equal to 16 cm.

- Clinical types: Depending on the rapidity of onset, hydramnios may be:
  (a) Chronic (most common)—onset is insidious taking few weeks.
  (b) Acute (extremely rare)—onset is sudden, within few days or may appear acutely on pre-existing chronic variety. The chronic variety is 10 times more common than the acute one.

- **Chronic Polyhydramnios**
  - *Symptoms*: The symptoms are mainly from mechanical causes.
  * Respiratory—The patient may suffer from dyspnea or even remain in the sitting position for easier breathing.
  * Palpitation
  * Edema of the legs, varicosities in the legs or vulva and hemorrhoids

  - *Signs*: The patient may be in a dyspneic state in the lying down position.
  * Evidence of preeclampsia (edema, hypertension and proteinuria) may be *present*.

- **Abdominal examination**

  - Inspection:

    * Abdomen is markedly enlarged, looks globular with fullness at the flanks.
    * The skin is tense, shiny with large striae.
    * Palpation: Height of the uterus is more than the period of amenorrhea.
    * Girth of the abdomen round the umbilicus is more than normal.
    * Fluid thrill can be elicited in all directions over the uterus.
    * Fetal parts cannot be well-defined; so also the presentation or the position.
    * External ballottement can be elicited more easily.

  - Auscultation: Fetal heart sound is not heard distinctly, although its presence can be picked up by Doppler ultrasound.

- **Internal examination:** The cervix is pulled up, may be partially taken up or at times, dilated, to admit a fingertip through which tense bulged membranes can be felt.

- **Investigations :**

  * Sonography: Sonography is helpful
    (1) to detect abnormally large echo-free space between the fetus and the uterine wall (largest vertical pocket more than 8 cm)
    (2) . Amniotic fluid index (AFI) is more than 25 cm
    (3) to exclude multiple fetuses,
    (4) to note the lie and presentation of the fetus,
    (5) to diagnose any fetal congenital malformation. (Especially the central nervous system, gastrointestinal system and musculoskeletal system).

  * Blood:
    (1) ABO and Rh grouping — Rhesus isoimmunization may cause hydrops fetalis and fetal ascites.
    (2) Postprandial sugar and if necessary glucose tolerance test.

  * Amniotic fluid: Estimation of alpha fetoprotein which is markedly elevated in the presence of a fetus with an open neural tube defect

- **Complications:**

  - The complications of hydramnios are grouped into:

  * Maternal
  * Fetal Maternal: During pregnancy—There is increased incidence of:
    1- Preeclampsia (25%)
    2- Malpresentation and persistence of floating head
    3- Premature rupture of the membranes

4- Preterm labor either spontaneous or induced
5- Accidental hemorrhage due to decrease in the surface area of the emptying uterus beneath the placenta, following sudden escape of liquor amnii.

- **During labor**:
  (1) Early rupture of the membranes
  (2) Cord prolapse
  (3) Uterine inertia
  (4) Increased operative delivery due to malpresentation
  (5)) Retained placenta, postpartum hemorrhage and shock. The postpartum hemorrhage is due to uterine atony.

- **Puerperium:**
  (1) Subinvolution
  (2) Increased puerperal morbidity due to infection resulting from increased operative interference and blood loss.

- **Fetal**: There is increased perinatal mortality to the extent of about 50%. The deaths are mostly due to prematurity and congenital abnormality (40%).

❖ Other contributing factors are cord prolapse, hydrops fetalis, effects of increased operative delivery and accidental hemorrhage.

- **Management: Treatment** of polyhydramnios is usually tailored according to the underlying cause.

- Mild Polyhydramnios (DVP: 8–11 cm**): It is commonly found in midtrimester and usually requires no treatment, except extra bed rest for a few days. The excess liquor is expected to be diminished as pregnancy advances (transient).**

- **Severe Polyhydramnios (DVP: ≥16 cm):** In view of the risks involved and the high perinatal mortality rate, the patient should be shifted in a hospital equipped to deal with "high-risk" patients.

- **Principles:**
  (1) To relieve the symptoms
  (2) To find out the cause
  (3) To avoid and to deal with the complication.

- **Management**
  - Fetal U/S looking for a cause
  - Glucose tolerance test looking for DM
  - Indomethacin can be beneficial if no cause was found Therapeutic amniocentesis in severe cases

Gestational Diabetes Mellitus (GDM)

-Most common complaints of pregnancy

- **Tests**:

1- RBS:

At booking & at 28 weeks (normal < 6.7 mmol/L, if ≥ 7.2 do GTT)

2- Osullivan test (best screening test):

Nonfasting pregnant women >> give 50 g glucose >> measure RBS after 1 hour >> if > 7.8 mmol/L >> GTT Note: to correct mmol/L into mg/dl just multiply by 18

3- Oral GTT (diagnostic):

-WHO: fasting pregnant women >> give 75 g glucose in 250-300ml water within 5-15 min (orally) >> take FBS Impaired GTT:

	blood	Plasma
FBS	5-7	6-8
2 hours	7-11	8-11

Diabetes:

	blood	Plasma
FBS	≥ 7	≥ 8
2 hours	≥ 10	≥ 11

-USA:

fasting pregnant women (at least 8 hours) >> take FBS >> give 100g oral glucose >> measure blood sugar at 1, 2, & 3 hours If FBS or ≥ 2 postprandial values are high >> gestational diabetes

Normal:

Time	Plasma glucose
FBS	< 95 mg/dl
1 hour	< 180 mg/dl
2 hours	< 155 mg/dl
3 hours	< 140 mg/dl

-Definition of GDM: impairment in carbohydrate metabolism that 1st manifests during pregnancy, usually in 3rd trimester.

- **Risk Factors:**

1- Family Hx of DM in 1st degree relatives
2- Previous Hx of gestational diabetes
3- Maternal weight > 90 Kg
4- Hx of large baby > 45 Kg
5- Hx of unexplained intra uterine death or neonatal death
6- Hx of congenital abnormality in previous pregnancy
7- Uterus large for date
8- Recurrent candidal vulvovaginitis
9- Polyhydramnios
10- Glucosuria in 2 or more occasions, at least fasting (could be normal in pregnancy due to decreased renal threeshould)

Note: it's recommended to screen all pregnant ladies at 28 weeks.

- **Effects of diabetes on pregnancy:**

1- Spontaneous abortion
2- Inflammation (UTI)
3- Vulvovaginitis
4- PROM
5- PET
6- Polyhydramnios
7- Preterm labor
8- Preinatal death
9- Unexplained IUFD
10- Macrosomia
11- Congenital anomaly (CVS, caudal regression)
12- RDS

-These usually occur in pregestational diabetics who become pregnant because gestational diabetes usually appears in 3rd trimester, after organogenesis. Still they are at increased risk of: macrosomia, birth trauma, shoulder dystocia, and neonatal hypoglycemia, hypocalcemia, hyperbilirubenemia, & polycythemia.

- **Effect of pregnancy on DM:**

1- Decrease renal threshold for glucose reabsorption >> glucosuria
2- Decreased insulin sensitivity
3- N & V
4- Infection >> increase insulin resistance
5- Antepartum: insulin requirements increase with GA (may double at term)
6- Intrapartum: glucose requirements increase & less insulin needed
7- Postpartum: prepregnancy dose of insulin

- **Infant of diabetic mother may have:**

1- Asphyxia
2- RDS
3- Transient tachypnea
4- Hypoglycemia, hypocalcemia, hypokalemia, hypomagnesemia
5- Polycythemia
6- Hyperbilirubinemia
7- Juvenile DM (2x)

- **Management:**

1- Early booking & pregnancy dating

2- Control blood sugar by:

a- Diabetic diet (best):

Decrease CHO to 120 g/day >> for obese
140 g/day >> normal; weight
160 g/day >> < 905 of normal weight

b- Insulin injections:

-3-4 times / day of short & intermediate acting insulin
--- 1st trimester: 0.8 mic/ Kg
--- 2nd trimester: 1.0 mic/Kg
--- 3rd trimester: 1.2 mic/Kg

-Aim: plasma glucose 3.5 – 6.0 mmol/L & HbA_1c < 4.5%

3- Self monitoring of glucose level by measuring capillary glucose preprandial

4- Markers:

a- HbA_1c:

--- false positive in anemia & chronic renal failure

--- high means that there's increased risk of congenital anomalies & abortions

b- Serum fructose amine (more specific)

5- Frequent antenatal visits

-Monthly till 28 weeks, then weekly till term

6- Admit if above complications occurred

7- U/S associated starting from 34 weeks

8- NST, BPP, AFI: starting from 32 weeks

9- Urine culture at 28, 32, 36 weeks

10- Delivery:

-Aim: NVD within 12 hours, if > 4 Kg >> C/S

-Timing:

--- if not complicated >> at 40 weeks

--- If bad obstetric Hx >> at 38 weeks

--- if C/S indicated >> at 38-40 weeks

-Use dextrose & insulin drips to maintain blood sugar within normal

11- Postpartum:

-If pregestational DM >> return to prepregnancy dose

-If gestational DM >> screen for type 2 DM

--- if normal: cease insulin immediate

--- if abnormal: start treatment

-Encourage breast feeding

-Increase CHO intake 50 g/day

- Oral hypoglycemic are contraindicated during pregnancy & breast feeding due to their teratogenic & hypoglycemic effect.

• LMP, GA, EDD, any new complaint?
-Any hx of previous GDM, if so how long?
-Chronic diseases: DM, HTN (before pregnancy) if so controlled or not
-Hx of low birth weight (LBW), if so how much did he/she weight?
-Hx of unexplained IUFD
-Hx of congenital anomalies
-Hx of PTL
-Weight of patient (above or below 90 Kg)
-UTI symptoms: dysuria, frequency, chills, fever
-Vulvar infection: pain, itching, discharge (color, foul smell)
-Have you done U/S, is there polyhydramnios, macrosomia, congenital anomalies
-PET: headache, blurring vision, increased BP, dyspnea, oligouria

• **Screening:**

1- RBS
2 - Osuliven test (modified GTT)
3- OGTT

Hypertensive disorders in pregnancy

1. History of chronic hypertension/renal disease/DM/SLE/Antiphosopholipid syndrome
2. History of previous PET or gestational hypertension in previous pregnancy/hydatiform mole / hydrops fetalis
3. Family history
4. First pregnancy or multiple pregnancy
5. Flashing lights
6. Photophobia
7. Headache
8. Visual field loss
9. Epigastric pain
10. Vomiting and nausea
11. Bleeding tendency
12. Epigastric or RUQ pain
13. Rapid oedema (periorbital)
14. Decrease amount of urine (oliguria)
15. Vaginal bleeding
16. Last reading of blood pressure
17. seizure

- Question analysis:-

  (1-4) ----- > risk factors

  (5-17) --- > symptom of hypertension /mostly with severe PET

- **PET Risk factors** include :
  - PE occurs in about 4% of pregnancies that extend beyond the first trimester.
  - Two thirds of all PE cases occur in nulliparous women.
  - PE in a previous pregnancy (25-65% in cases of severe 2nd trimester PE, 5-7% in cases of mild PE)
  - age >40 years or <18 years
  - family history of preeclampsia
  - chronichypertension
  - chronic renal disease
  - Antiphospholipid antibody syndrome or inherited thrombophilia
  - Diabetes mellitus (pre gestational and gestational)
  - Multifetalgestation
  - High body mass index
  - Black race
  - Hydrops fetalis
  - Fetal growth restriction, abruptio placentae, or fetal demise in a previous pregnancy
  - Molar pregnancy (preeclampsia is diagnosed before 24 weeks gestation)

- **Investigations :**

1. **CBC**
2. URINE ANALYSIS
3. LFT
4. COAGULATION PROFILE
5. LDH (marker for haemolysis)
6. Protein in urine/24h

- **Complications :**

Maternal	Fetal
- placentalabruption	- fetal growth restriction
- Acute renal failure	- Prematurity
- Cerebralhemorrhage	- Respiratory distress
- Hepatic failure or rupture	- Intraventricular hemorrhage
- Pulmonaryedema	- Necrotizing enterocolitis
- DIC	
- Maternaldeath	

Antepartum hemorrhage (APH) :

"Bleeding from or in to the genital tract from the 240 weeks of pregnancy & priornto delivery of the baby"

*Patient profile:

- Name, age, occupation, residency,
- Gravda and Para, LMP blood group (Rh +/-).

*Chief complaint:

- Vaginal bleeding + Duration

*H.O.P.I:

- Onset: spontaneous, following trauma, following PV exam or intercourse.
- Duration
- Course: continuous\intermittent, single attack\recurrent.
- Amount: spotting or excessive (presence of clots) No. of pads\day (soaked or not??) Need for blood transfusion?
- Color: bright red or dark red.
- Aggravated by: movement, household activities.
- Relieved by: lying down, resting.
- Severity (consequences): dizziness, loss of consciousness, SOB, palpitation, oliguria. {Anemia}
- Associated symptoms: Painless VS Painful\uterine contraction

❖ If it's painful >> Ask:

-Onset with bleeding? -Site & radiation. -Character.
-Duration, frequency, duration. -Severity.
-Aggravating & Relieving factors.
-Passage of liquor\Gush of fluid?? : Amount, color, smell, timing.
-Fever??
-Fetal movement, if it's affected or not??
-Hx of vaginal bleeding (APH) during current pregnancy or previous pregnancies.
-Multiparous?? {3X more common than primiparous}.

*DDx:

1- **Abruptio placenta AP >>** Sudden localized abdominal pain with\without vaginal bleeding, uterine contraction, shock or fetal ditress.

- **Risk factors** { ask about : Hx of previous AP, HTN diseases, direct trauma, RTA, chronic chorioamnionitis, thrombophilias, increasing maternal age (> 35 y) & age < 20, smoking, Cocaine use, anemia, prolonged rupture of membranes (> 24 h), short umbilical cord, multiparity }.

2- Placenta praevia PP >> Painless & recurrent bleeding.

-Risk factors { Hx of PP with a previous pregnancy, Scars in the uterus (previous C/S, D&C, myomectomy), large placenta (multiple pregnancy), abnormally shaped uterus, Age >35 (9x > 40yrs), Asian, smoking, multiparity }

3- Vasa previa >> Classic triad {membrane rupture, painless vaginal bleeding, fetal bradycardia}

-Risk factors {multiple pregnancy, abnormal insertion of the cord}.

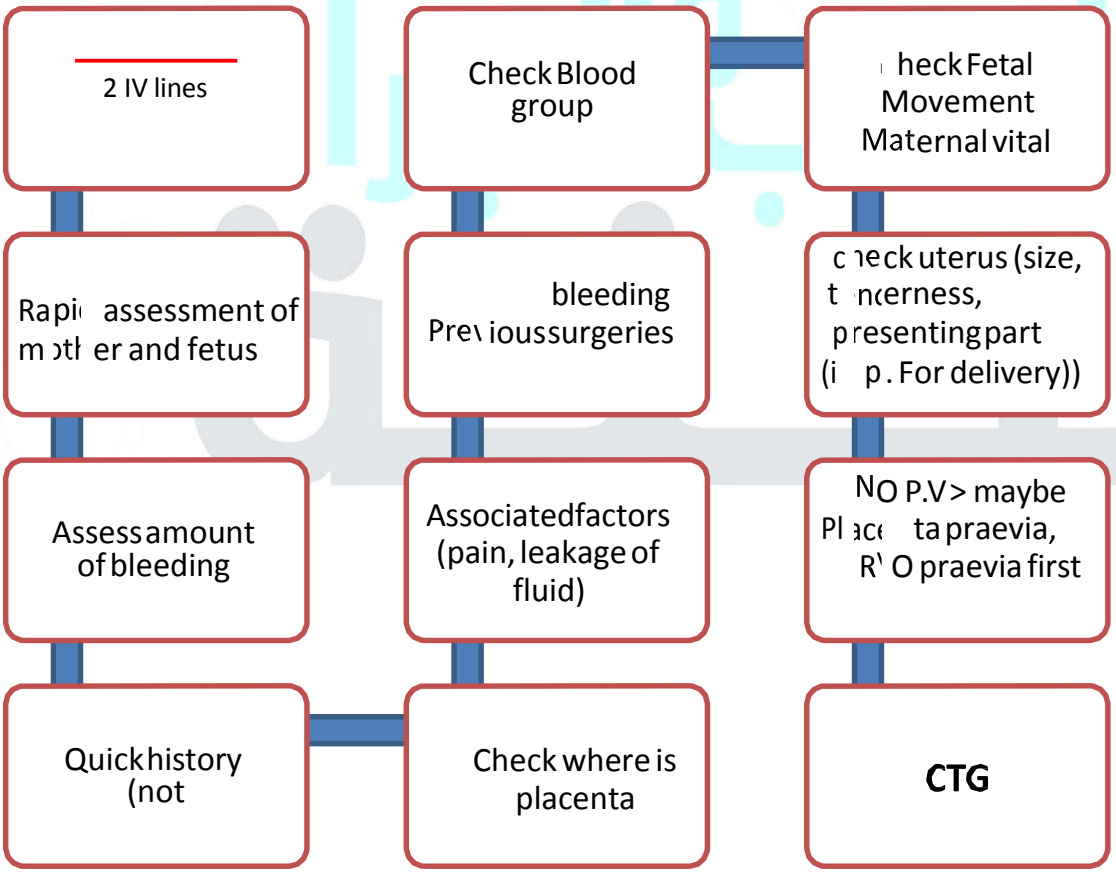
4- Uterine rupture >> Sudden pain, vaginal bleeding, abnormal CTG.

-Risk factors { Classical CS, multiparity, uterine distension **}.**

5- Show

6-Local causes { Vulval or cervical infection, trauma or tumors, Cervical polyp, haematuria, haemorrhoids **}**.

*Management for all presenting with APH:



Complications

- Premature labour.
- Disseminated intravascular coagulopathy.
- Renal tubular necrosis.
- Postpartum haemorrhage.
- Placenta accreta: this complicates approximately 10% of all cases of placenta praevia but is rare in the absence of placenta praevia.

Post Partum Hemorrhage (PPH)

- **Definition**: Any bleeding following delivery leading to haemodynamic instability
  OR If Blood loss is > 500 ml -NVD-, >1000 ml -C/S-

- **Types**: 1ry : within 24 hours of delivery 2ry : after 24 hours of delivery

- **Incidence**: 5% D.Dx.

- **1ry PPH:**

1. Uterine Atony (90%)
2. Retained POC(placenta, clot) ; esp. if preterm
3. Genital tract trauma (cervical, vaginal, perineal)
4. Uterine inversion.
5. Bleeding Tendency

- 2ry PPH:

1. Retained Products of conception
2. Subinvolution of the uterus : failure to return to pre-preg. sze due to inf. Endometritis
3. Choriocarcinoma

- **Risk Factors: [1] Antepartum :**

1. Previous PPH
2. APH (PP, AP)
3. Fetal disease (ass. with DIC)
4. PET or Gestational HTN
5. Overdistended Uterus due to: Multiple gestation, Macrosomia or polyhydraminos.
6. Bleeding disorder(before pregnancy)
7. MgSO4 use (tocolytic)
8. Other drugs; phenytoin, anti-epileptics

[2] Intrapartum:

1. Operative delivery (forceps)
2. Prolonged/rapid labor (time)
3. Induction/augmentation
4. Difficult labor-shoulder dystocia
5. Internal podalic version
6. Coagulopathy

[3] Postpartum:

1. Lacerations
2. Episiotomy
3. Retained Placenta
4. Abn. Placenta
5. Uterine rupture
6. Uterine inversion
7. Coagulopathy

- **Causes of uterine atony (lax uterus) within 4 hours postpartum:**

1. Overdistension of the uterus: Multiple gestation, Macrosomia, Polyhydraminos
2. APH(Any cause)
3. Time of labor:
   -prolonged
   -precipitate (<3h): Multi: Full cervical dilatation in 1 h.
   Primi: >5cm = = =
4. Grand multiparity (>5babies)
5. General Anaesthesia: Halothane
6. Drugs: NSAIDs, Nitrates, MgSO4, Nifedipine, β-agonists
7. Placental site in lower uterine segment
8. Bacterial toxins: Chorioamnionitis, endometritis, septicemia
9. Hypoxia ---- Couvelaire Uterus in abruptio placenta.

- **Causes of secondary PPH:**

1. Endometritis(fever)
2. Retained tissue (placenta, clot)
3. Fibromyoma

- **N.B. Coagulopathy doesn't cause PPH immediately after delivery due to the effectiveness of uterine contractions and retractions. It can be pre- existant or acquired as Dilutional Coagulopathy.**

- **Ts of PPH:**

1. Tone (atony)
2. Tissue(retained POC)
3. Trauma(laceration, rupture and inversion)
4. Thrombin(coagulopathy)

- **N.B. Hypotensive shock without significant bleeding : concealed haemorrhage, A.F. embolus, uterine inversion.**

- **Hx:**

- **P.P.**
- Name, age, G*P*, LMP, GA, EDD, admission via ER or OPD
  Baby: term, wt., healthy, lactating.
- **C.C.**
- PPH of X day duration
- **H.P.I.**

1. Bleeding: onset, duration, amount (pads/day, soaked, clots), color, frequency and passage of tissue.
2. Haemodynamic instability: dizziness, pallor, headache, SOB, LOC, palpitation, sweating.
   Causes:
3. Uterine atony:
   -mode of delivery (NVD, AVD by forceps or vacum, C/S)
   -time and duration of labor (prolonged or rapid)
   Ex. How long was the 3rd stage? Needed manual removal of placenta? checked the placenta for complete evacuation?
   -GDM, Polyhydraminos, Macrosomia, Multiple Gest. Or Grand Multip.
   -prolonged use of oxytocin in induction and augmentation of labor (fatigue), Ex. How long did u stay in delivery? Did they initiate it?
   -MgSO4 for Rx of PET
   -Hx. of chorioamnionitis [Fever, uterine tenderness or contractions, foul smelling vaginaldischarge, meconium in amniotic fluid]
   -Hx. of APH (did u bleed in the last 3 months?)
   -GA
   -Internal podalic version
4. Uterine Inversion --- so difficult placental delivery and retained In-utero
5. Cervical and genital tract trauma during diff. Labor (lacerations, tears)
6. Coagulopathy: bleeding from other orifices [Hematuria, epistaxis, PR, ecchymosis, haemoptysis, aspirin/heparin intake or fetal demise]
7. In case of 2ry PPH, Uterine subinvolution:
   -ask about fever, abdominal pain (endometritis)
   -hx. Of fibroid
8. Did u have any U/S before delivery?
   -presentation(transverse, breech)
   -Fetal demise
   -Placenta: location Obs.
   Hx : previous PPH.
   Med. Hx : GDM(macrosomia, Polyhydr.), PET, Coagulopathy, Liver disease, Blood Tx.
   Surgical Hx: Previous uterine surgery, episiotomy
   Social Hx: smoking, alcohol

- **Complications:**

1. Increase maternal morbidity and mortality
2. Renal failure
3. Sheehan Syndrome: Amenorrhea, failure to lactate, hypothyroid.
4. Chronic anemi

- **P/E:**
  1. General: conscious, pale
  2. v/s
  3. empty bladder
  4. ?Abdominal exam. : Tense(firm)--- lower genital tract? Lax --- Atony, retained POC

- **Management:**

1) **ABCs:**

- Assess the Ptn.[tachycardia, tachypnea, pallor, oliguria, sweating(v/s)] And get help.
  Put large bore IV-canula & start IV fluids(crystalloid)
- Send blood test for: CBC, Blood type&cross-match (prepare PRBCs), KFT [urea&electrolytes], coagulation profile[PT, PTT, fibrinogen, d-dimer]—(coagulpaty)
  Insert Foley's cath. to empty the bladder & monitor U/O

2) **By palpation:**
   - Assess fundal height.
   - Continuous manual message---local release of PGE
     Bimanual uterine compression
3) **Give Oxytocin :**
   - 5 U / IV-bolus (SE:hypotension)
   - 10 U / IM in Uterus
   - 20 U per L N/S continuous infusion
4) **Manual exploration:**
   - Retained tissues [placenta, clots] in the uterus --- remove it
   - Cervical injury, birth canal lacerations, uterine inversion, dehiscence, or rupture— surgical repair
5) **Try other uterotonics:**
   1. Methergine or ergometrine: IV:onset 45 sec, IM:onset 2-6 min, 1 ampule:0.2 mg can be given Q 6-12 h , max dose 0.4 mg, indicated in : IHD, HTN
   2. Cytotec(misoprostol): PGE1 : 400 mcg
   3. Hemabate(carboprostol): PGF2α , 0.25 mg IM , relative contra. In asthmatics
6) **If still bleeding, consider coagulopathy:**
   - Give FFP, cryoprecipitate and/or platelets
7) **If coagulation is normal, consider :**
   - Embolization of uterine artery
   - Internal iliac artery ligation
8) **Hysterectomy (as a last resort)**

- **The Main Principle of Mx. Is prevention by:**
  1. Identifying the high risk patients
  2. Active Mx. Of labor: R/O CPD, avoid instrumental delivery
  3. Active Mx. Of 3rd stage :

  -prophylactic oxytocin immediately after delivery as described above.
  -early cord clamping and cutting.
  -gentle cord traction with suprapubic counterpressure to avoid inversion when the uterus is well contracted.

Prelabour rupture of the membrane (PROM)

- **Definition:**

  Prelabour Rupture of the Membrane (PROM) means rupture of the membrane before the onset of labour.

  Preterm prelabour rupture of the membrane (PPROM): is rupture of the membrane before 37 weeks.

- **History Taking:**
  - This fluid leak may be subtle (e.g., increased wetness noted on undergarments or pants) or may be substantial (e.g., a "gush" of fluid). A careful history should be obtained to distinguish the causes of discharge such as cervical infection, physiological mucus production (or loss of the mucus plug), urinary incontinence, or UTI. Although each of these requires evaluation and diagnosis, management varies considerably from that for PROM.

  - Patients may also present with reported "urinary" symptoms such as urinary incontinence or urinary frequency. Such symptoms are both common and challenging. Anatomic changes associated with pregnancy such as increased uterine and fetal size increase urinary incontinence. Physiological changes associated with pregnancy such as relative outflow obstruction and urinary stasis increase the likelihood of urinary tract infection. For this reason, such urinary symptoms should be carefully detailed.

- **Chief Complaint:** Patients with PROM will often report discharge or "leaking" per vagina.

- **History of Presenting illness:**

  **** You have to know in which trimester she is and when is her EDD**

  -Timing: When did it happen? What was she doing when she felt the gush of fluid (was she sitting or was she passing urine..Etc)?

  -Amount: Did the fluid wet her underwear only? or flooding happened ? Did she have a gush and no more afterwards or is it still dribbling?

  -Color: -Yellowish --> urine

  -Blood stained → (abruptio with PROM)

  -Greenish→ meconium (the babies poop and reflects fetal distress)

  -Smell: If it smells like ammonia, it's probably urine. If it has a somehow sweet smell, it's probably amniotic fluid.

  -Urinary symptoms: urgency, dysuria, hematuria, abdominal pain, fever chills (Urinary

incontinence/frequency) **OR** (UTI is associated with PROM)

-Painful/painless Bleeding Per vagina: abruptio placenta / placenta previa.

-Pain in low back or anywhere / Feeling of contractions :

(Here if it's positive , R/O true labour pain vs. Braxton Hicks sign - False labour pain)

Onset/duration/pattern: cont/ intermittent/ site/radiation/severity /character/aggravating and relieving factors (SOCRATES).

-Smoking during pregnancy: smoking increases chance of PROM.

-History of previous early membrane rupture: increases chance of PROM

-History of preterm labor: increases chance of PROM

-Is she carrying **multiples/** or has **polyhydramnious**: increase chance/risk of PROM.

-Fever, chills, rigor, tachycardia, Foully vaginal discharges: to R/O chorioamnionitis

-PriorInfections

- You should ask about **fetal movements**!!
  History of **recent sexual intercourse**. **chronic cough or respiratory problem? Any complications during her pregnancy?**

***** Then you continue with her Past :**
Medical Hx. Surgical Hx. Systems review Gynecological Hx. Obstetric Hx. Social Hx.

- **Physical Examination :**

1. check the vital signs and temperature , Fever and tachycardia are signs of infection/chorioamnionitis

2. Abdominal exam:
   -check if there is Contractions/tenderness/ oligohydromenious
   -oligohydromenious causing the fundal height to be less than the GA because of leakage of liquor.
   -Tenderness indicates infection

3. Speculum exam: To confirm the diagnosis!!! . check for :
   - presence of Pool of fluid in the vagina / cough impulse / blood or mucous?!.

-check for dilatation / effacement/ presence of the cord.

**(don't forget to comment about the cord when in the OSCE)

- take high vaginal swap

-take amniotic fluid to assess lung maturity: L/S ratio, and phosphatidylglycerol.

Investigations:

- **Nitrazine test:** the vagina has an acidic pH while the amniotic fluid is alkaline so in PROM the color will change to black (alkaline) false positive in the case of blood, urine or semen.
- **Ferning test:** crystallization of the salts in the amniotic fluid when it dries.
- **Genital tract swab** to screen for group B streptococcus/E coli.
- **Maternal well-being:** Vital signs/WBC/CRP/ Blood culture/Urine culture and analysis.
- **Fetal well-being**: Full Biophysical profile (Non stress test…etc).

-**US** has a controversial role in the diagnosis of PROM, But it can give Info. About:

1. GA (GA should he carefully assessed by: 1. LMP. 2. fundal height. 3. U/S)
   Fetal growth to R/O IUGR
2. AFI for oligohydramnious (V. imp)
3. Presentation
4. R/O fetal anomalies

- Others:
  - Amnio dye test or Tampon test: injection of a dye into uterus to look for leakage from the cervix.
  - α FP in amniotic fluid?
    Fetal lung maturity by L/S ratio?
  - Amniocentesis: done to obtain some amount of amniotic fluid for culture and analysis , This is an invasive procedure we don't do it anymore!!

Management:

- Should be **individualized**
- Depends on: 1. GA 2. Amount of amniotic fluid lost

1) Admission to monitor the mother and the fetus
2) Examination as mentioned above.
3) Medications:

— Hydration

— I.V antibiotics (penicillin, gentamycin, erythromycin)

— Tocolytic agents (questionable?!)

— Dexamethasone for lung maturity

If there is infection on presentation or anytime during investigations → I.V antibiotics + immediate delivery regardless the GA.

- If infection is ruled out, then:
  GA> 34 wks → delivery
  GA < 34 wks → **expectant management*** (aim is to ↑ GA till lung maturity):
  — Prophylactic antibiotics (penicillin/ erythromycin)
  — Tocolytics (questionable as it masks signs of infection, suppress labor only for 48hrs to give dexamethasone)

 # expectant management if : 1) No PTL 2) No infection 3) No fetal distress

- **Differential diagnosis:**

1. Amniotic fluid (PROM)
2. Urine (stress incontinence)
3. Vaginal discharge, leucorrhea (vaginal infection)
4. seminal fluid collection (sexual intercourse)
5. dilation of cervix and loss of mucus plug.

❖ Remember : In PROM :

Speculum is the definitive diagnostic test ☺

Remember Don't do a digital exam, no PV!!

MANAGEMENT

❖ Tocolytics

- Contraindications

- IUGR, IUFD
- Fetal distress Oligohydramnios Chorioamnionitis Rupture of membranes
- Fetal congenital anomalies Active stage of labor

☒ Sympathomimetic Agents

Ritodrine (FDA-approved) + Terbutaline
They act through smooth muscle relaxation

- Side Effects:

- Tachycardia, palpitations, tremors, nervousness & restlessness
- Pulmonary edema
- Hypokalemia
- Insulin release
- Hyperglycemia Lactic acidosis

- Contraindications:

- Maternal heart disease (can cause acute cardiopulmonary compromise)
- Uncontrolled HTN
- Pulmonary HTN
- Hyperthyroidism
- Diabetes

❖ Calcium Channel Blockers (Nifidepine)

They act through smooth muscle relaxation by reducing cytoplasmic free calcium

- Side Effects

- Headache, dizziness & hypotension

❖ NSAIDs (Indomethacin – Indocin™)

These are inhibitors of prostaglandin synthetase activity so inhibiting prostaglandin-induced uterine contractions

- Side Effects

- Premature closure of ductus arteriosus
- Fetal nephrotoxicity

❖ Magnesium Sulphate

Stabilizes smooth muscles cellular membranes by calcium antagonism

- Indications
  - 1st line in obviously progressive labor, especially at an early gestation 2nd line with failed oral tocolytics
  - When other tocolytics are contraindicated

- Side Effects
  - Decreased to absent DTR
  - Pulmonary edema
  - Heart block
  - Drowsiness

  ***(Not seen with normal KFT and administration rates of 2 g/hour or less)

- Antagonist
  - 1 g of calcium gluconate IV

❖ Steroids

- Decrease risk of neonatal morbidity and mortality due to prematurity by reducing risk of RDS & IVH
- Best is two injections 24-48 hours of betamethasone between 28-34 weeks of gestation
- No evidence of fetal side effects
- Low if any maternal side effects:
  - Pulmonary edema (especially when used with tocolytics)
  - Increased risk of infection especially in preterm PROM (controversial)
  - Abnormal glucose control in diabetics

❖ Antibiotics

- No need in uncomplicated preterm labor
- 10-day course of erythromycin led to improved neonatal outcomes after prolonged PROM
- Intrapartum antibiotics unless GBS status is known to be negative
- Complications: intra-uterine infection, UTI or neonatal sepsis

❖ Fetal Monitoring

- It is important to determine the presentation and lie based on U/S studies
- Continuous fetal monitoring
- Difficult to interpret hearts of extremely premature infants
- Steroids may lead to decreased fetal activity and heart beat variability

❖ Mode of Delivery

- Cephalic presentation: vaginal delivery has the same outcome as C/S
- Breech presentation: C/S is advised, because of risk of entrapment of the head in a poorly-dilated cervix

Preterm Labor

❖ **Incidence**: 7-12% of all delivery after 20 wks and before 37 wks of gestation.
- Leading cause for prenatal mortality

• Risk factor:

- age <45 & > 35 year
- black > white
- prepregnancy wt<50 kg (+ risk 3x)
- previous hx of preterm labour , 2nd trimester abortions,APH,threatenedabortion
- uterine anomalies,bicornate or septated uterus
- uterine over distension multiple gestation or polyhydramnios
- congenital fetal abnormalities
- Dead fetus (missed abortion----- preterm labor)
- PROM
- maternal illlnes with fever : chorioamionitis
- maternal diseases ;PET, infection ,
- low socioeconomic status
- poor nutritional status,employment, stress
- abruptionplacenta
- incompetent cervix

❖ Diagnostic criteria for preterm labour:

- Regular uterine contraction : 4 Q 20 min or 8 Q 60 min in normal labour ; 3 Q 10 min
- Cervical change ; effacements > 80% & dilatation > 2 cm
- Uterine contraction:
  - ❖ Nature of pain (colicky) , continuous/intermitted , progressive / not , frequency(x per hr) , duration , radiation , aggrieve / relieving factors Each contraction should last at least 30 sec
  - ❖ There should be at least 2 contraction / 10 min Duration should be at least 30 min

❖ Associated factors:

- ROM--- gush of fluid , amt (did it reach the knee), colour, smell ,vaginal bleeding , fever & vaginal discharge(R/O bacterial vaginosis).
- decreased fetal movement
- cervical incompetence
- Urinary Sx (R/O cystitis / pyelonephrittis) "dysuria, fever, flank pain , poor stream , colour of urine"

- Any material illness with fever during this pregnancy untreated infection
- Uterine anomalies
- Uterine over distension MG , polyhydraminos,LBW
- Previous APH or threatened abortion in this pregnancy
- Trauma / frequent intercourse in 2nd half of pregnancy
- U/S abnormalities referred intrauterine contraceptive devise

RHISOIMMUNIZATION

- **Rh antigens** :D,d,C,c,E,e
  - Mostimportant(D),DD(+),Dd(+),dd(-)
  - Critical volume :minimum volume of blood that can cause Rh isoimmunization:0.25ml

- **Causes of Rh Isoimmunization (feto-maternal hemorrhage):**
  1. Delivery &C/S
  2. Abortion
  3. Ectopic pregnancy
  4. Ante partum hemorrhage(placenta previa, placental abruption)
  5. Postpartum hemorrhage
  6. Amniocentesis & chorionic membrane biopsy
  7. External cephalic version
  8. Manual removal of the placenta
  9. Silent feto-maternal hemorrhage (themostserious)

- **Factors that determine isoimmunization**
  1. Volume of blood(↑)
  2. Inborn ability of the mother to respond(↓)
  3. ABO incompatibility(↓)
  4. Strength of the Rh antigen(↑)

- **Fetal Complications**
  1. Hemolysis
  2. Jaundice &kernicterus
  3. Hydrops fetalis :generalized edema of the fetus

- **Kleihauer-BetkeTest**
  - ❖ Acid dye on maternal blood, staining of fetal cells &counting them under microscope
  - 20 fetal cells=1mlofbleeding=needs100IUofanti-D
  - We usually use1500IU in all cases

- **When to give Anti-D?**
  - Mother is Rh(-) and father is Rh(+)(we don't check for the father usually)
  - Indirect Coombs test is (-)
- **Prophylaxis**
  - Administration on 28,34&36 weeks of gestation
  - Administration with any cause of feto-maternal hemorrhage(within72hours

- **Management of Immunized cases**
  - Indirect Coombs test is (+) so we do amniocentesis to determine the severity
  - Liley's chart (unconjugated billirubin level & gestational age after 27weeks)
  - ZoneIII (severe)
    GA<34weeks:intra-uterine transfusions
    GA>34weeks:deliver immediately
  - ZoneII (moderate)
    GA<34weeks:repeat amniocentesis in 1-2weeks
    GA34-37 weeks:deliver at 35-37weeks
    GA>37weeks:deliver immediately
  - ZoneI (mild)
    GA<34weeks:repeat amniocentesis in 3weeks
    GA>34weeks:deliver at term
  - After Delivery–The Neonate
    Severity is assessed by (directCoombstest,Rhtype,bloodgroup,Hb)
    Severe case: exchange transfusion
  - NST: tachycardia,↓variablity
  - Follow up the fetus with U/S markers: for hydrops, morphology of liver spleen, BPP.
  - MCA doppler
  - Fetal blood sampling in intra uterine blood transfusion
  - Induction of labour at 36weeks.

- **Indications for Anti-D:**

1. Prophylaxis at 28wks of gestation and40wks. (if still undelivered)
2. Postpartum if the infant is Rh+ve within 3days,300 mg
3. spontaneous or therapeutic abortion(±D&C)
4. invasive procedures(amniocentesis at any gestational age, FBS,CVS)
5. Ectopic pregnancy
6. molar pregnancy?
7. 1st or2ndtrimester bleeding
8. stillbirth
9. trans placental hemorrhage
10. obstetric manipulation
11. manual placental removal

} Dose depending on amount of fetal RBC in maternal circulation (Kleihauer-Betketest)

- **Notes:**

- if the mother is sensitized when she got pregnant we don't give Anti D
- 0.3 mg of AntiD will eradicate 15 ml of fetal RBC.
- 10%risk of hydrops in1stsensitized pregnancy.

Case of RH- incompatibility

❖ A 32 yr old female pregnant lady came to your clinic telling you that her blood group is A- and her husband's AB+. She was told to be sensitized .Take appropriate history and what will be your management.

- **Hx:**

1- Bld group, husbands bld group(if not given)
2- How much was the titer of the Indirect coombs' test (المضادة الجسام فحص)(some patients know, you have to ask them) 1/16 is the threshold (it comes in multiples of 8).
3- Did your husband did DNA analysis to know If he ishomozygous or heterozygous, Also you can ask about previous fetuses bld group if she is multipara.

4- Hx of present pregnancy:
- Hx of APH, placental abruption, chorionic villous sampling, amniocentesis, trauma, RTA, falling.

5- Past obstetric hx.
- Hx o therapeutic/ spontaneous abortions, delivery ,C/S, not getting Anti-D.
- Hx of molar pregnancy
- Hx of manual removal of the placenta
- Hx intra uterine fetal death, Hydrops fetalis, or stillbirth.
- Did the patient needed amniocentesis, Fetal blood sampling, or intra uterine bld transfusion in her previous pregnancies.
- Did the patient ever delivered a baby who was jaundiced, admitted to the NICU, or needed exchange transfusion.

6- Hx of blood transfusion

Anemia in pregnancy:

- Hb. concentration should not fall below;

  - ***1st trimester*** ***11 g/dL***

  - ***2nd, 3rd trimester*** ***10g/dL***

- **history taking :**

  ❖ *Non-specific symptoms:*

  - *Pallor*
  - *Fatigability*
  - *Palpitatons*
  - *Tachycardia*
  - *Dyspnea*
  - *Difficulty concentrating.*
  - *Dizziness.*
  - *Leg cramps*
  - *Insomnia.*

- ***Severe anaemia***
  - *Angular stomatitis*
  - *Glossitis*

- **Maternal complications**
  - *Angina*
  - *CHF*
  - *Infection*
  - *Preterm labour*

- **Fetal complications**
  - *Decreased oxygen carrying capacity leading to* ***fetal distress***

- **DDX:**

  - *iron deficiency* - *folate deficiency*
  - *vitamin b12 deficiency* - *blood loss*
  - *haemoglobinopathy (haemolysis)*

1. **Iron deficiency :**

- **Iron intake** of around 2.5mg/day increasing as pregnancy progresses

❖ Causes :

- **Inadequate iron intake**
- **Decreased iron absorption:** - malabsorption syndrome - antacid use
- **Increased losses**: - vaginal or peptic ulcer or other sources of bleeding
- **Increased requirements**: - fetal growth - multiple gestation

❖ **investigations :**

- CBC : ↓MCV, MCHC, Hb ↑RDW
  peripheral smear :target cells microcytic hypochromic
- ↓Serum Iron, ↑Total Iron-Binding Capacity, and ↓Serum Ferritin
  Evaluation for hemosiderinuria, hemoglobinuria, and pulmonary hemosiderosis
- Hemoglobin electrophoresis and measurement of hemoglobin A_2 and fetal hemoglobin
- Reticulocyte hemoglobin content

❖ **Prevention:**

-150mg Ferrous Sulfate OD

-300mg Ferrous Gluconate OD

❖ **Treatment:**

-1g Ferrous Sulfate OD

2. **Folate deficiency anemia :**

❖ clinical presentation :

-Anorexia -Sore mouth or tongue

-Nausea -UTI

-Vomiting -Pallor

-Dirrhoea -Depression

❖ **Fetal complications:**

- Neural Tube Defects -prematurity
- Low birth weight

❖ **Investigations :** **prevention :**

-serum folate - 0. 4mgram daily

-blood smear - 4mg daily for DM mothers

3. Vitamin B12 Deficiency

❖ causes:

- **Dietary**: - *Vegans*
- **Malabsorption**:
  - *Perniciousanaemia*
  - *Partial gastric resection*
  - *Ileal resection*
  - *Intestinal stagnant loop*
  - *Chron's disease*
  - *Tapeworms*
  - *Tropical sprue*
- **Miscellaneous**: - *Folate deficiency*

❖ Treatment

- ***single dose of 1000 µg*** of intramuscular B12
- - weekly injections should be employed until anaemia resolves and lifelong replacement is often necessary

4. Hemolytic anemia:

❖ History :

- iron deficiency due to chronic
- Tachycardia, dyspnea, angina, and weakness occur in patients with severe anemia, as cardiac function is sensitive to anoxia.
- Elevation of bllirubin : jaundice , itching , tea-colored urine..etc,
- Bronze skin color and diabetes occur in hematosiderosis; iron overload may occur in patients who have received multiple transfusions
- Dark urine may be due to hemoglobinuria.
- patients with thrombotic thrombocytopenic purpura (TTP) may experience fever, neurologic signs, renal failure, and thrombocytopenia.
- Leg ulcers may develop in patients with sickle cell anemia and other hemolytic disorders, as a result of decreased red blood cell (RBC) deformability and endothelial changes.
- Venous thromboembolism occurs in 15% to 33% of adults with warm autoimmune hemolytic anemia.
- Medications that can cause immune hemolysis. These include penicillin, quinine, quinidine, and L-dopa. Dimethyl fumarate.
- (G6PD) deficiency, haemolysis can be triggered by oxidant drugs and stress from infections. Fava beans can induce hemolysis in susceptible individuals.

❖ investigations :

- Complete blood cell count
- Peripheral blood smear
- Serum lactate dehydrogenase (LDH)
- Serum haptoglobin
- Indirect bilirubin

Hyperemesis Gravidarum

- Nausea and vomiting are the most common symptoms of pregnancy. It affects 50- 90% of pregnant women.
- **A more severe form of nausea and vomiting in pregnancy affects less than 1% of women and is referred to as ((hyperemesis gravidarum)).**

  - Different definitions of hyperemesis gravidarum exist, but the important features are intractable vomiting associated with weight loss of more than 5% of pre- pregnancy, weight, dehydration, electrolyte imbalances, ketosis, and the need for admission to hospital.

  It peaks between **the 8th and 12th weeks of pregnancy**.

Note: you will Take Full Hx as usual, but the written down are the most important that you must ask about.

- **History Taking :**

  - Patient profile:
    - Age and Parity (cause it's more common in Younger Primiparous women)

  - HOPI:
    - Onset/duration
    - timing
    - Severity
    - pattern
    - Alleviating and exacerbating factors
      (Relationship to meals, medications, prenatal vitamins, stress, other triggers).

  - Important symptoms the patient may experience
    - Fatigue, weakness, and dizziness.
    - Patients may also experience the following: (Sleep disturbance, Hyperolfaction, Dysgeusia, Decreased gustatory discernment, Depression, Anxiety, Irritability, Mood changes, Decreased concentration)

  - History of nausea and vomiting in previous pregnancies .

  - If Multiple or Molar Pregnancies OR has previous Molar Pregnancy (high concentrations of HCG).

  - If untolerate heat / change in bowel habit / tremor / sweating / Tachycardia/ enlarged

thyroid gland (goiter) / Fatigue, muscle weakness. (because the structural homology between HCG and TSH and their receptors facilitates cross- reactivity between these two hormones)

- If has preexisting Diabetes or previous psychiatric illness. (More common with!)
- Fever?/ diarrhea / Abdominal cramps and pain (To exclude Gastroenteritis).
- If has Peptic ulcer?
- Dysuria / Freguency / urgency (To Exclude UTI)
- Headache ? -PET ? -Migraine ?

- **Risk factors**

-First pregnancies
-multiple pregnancies
-trophoblastic disease

Investigations:

- Full blood tests (includes urine tests for ketonuria and blood tests for electrolytes and acetone, blood urea nitrogen (BUN), creatinine, amylase, lipase, and liver function)

-Urinalysis

- pelvic ultrasound (to assess severity and to rule out other causes and molar pregnancy)

Treatment :

is symptomatic

Psychological support : reassuring women that nausea can be part of normal pregnancy, that nausea is likely to settle as the pregnancy progresses.

Advise women to avoid exposure to triggers such as specific odours and particular foods.

Rehydration is first line treatment either oral / IV according to severity and as needed.

Antiemetics as Metoclopramide, Cyclizine (in cases of ongoing nausea and vomiting,)
parenteral antiemetics (If intractable vomiting)

Corticosteroids (IF intractable cases of severe hyperemesis gravidarum)

Complications of hyperemesis gravidarum :

Maternal complications

(Weight loss/ Dehydration /Electrolyte abnormalities >>Hyponatremia Hypokalemia<</ Vitamin B-1 deficiency → Wernicke's encephalopathy / Vitamin B-12 and vitamin B-6 deficiencies →anaemia and peripheral neuropathies/ Mallory-Weiss tears of the oesophagus)

Fetal complications (Fetal growth restriction and prematurity)

Differential diagnosis of nausea and vomiting in pregnancy :

Gastrointestinal (for example, infection, gastritis, cholecystitis, peptic ulceration, hepatitis, appendicitis, and pancreatitis)

Neurological (for example, migraine, central nervous system diseases)

Urinary tract infection

Ear, nose, and throat disease (for example, labyrinthitis, Ménière's disease, vestibular dysfunction)

Drugs (such as opioids and iron)

Metabolic and endocrine disorders (such as hypercalcaemia, Addison's disease, uraemia, and thyrotoxicosis)

Psychological disorders (such as eating disorders)

Pregnancy associated conditions (such as pre-eclampsia and molar pregnancy)

Caesarean Section

- A caesarean section is a surgical procedure in which incisions are made through a woman's abdomen (laparotomy) and uterus (hysterectomy) to deliver one or more babies.
- Risks are those from any major procedure; hemorrhage, infection, visceral injury (injury of the bladder or bowel), thrombosis). And the most comp. is that the risk of placental attachment disorders increases.

❖ Classification of caesarean section according to urgency

- Category l- requiring IMMEDIATE delivery
  - a threat to maternal or fetal life
- Category 2- requiring URGENT delivery
  - maternal or fetal compromise that is not immediately life threatening
- Category 3- requiring EARLY delivery
  - no maternal or fetal compromise
- Category 4-ELECTIVE delivery
  - at time suited to the woman and maternity staff

❖ Indications:

- The four major indications accounting for greater than 70% of planed operations are:
  - Malpresentation (mainly breech)
  - Previous caesarean section (>2)
  - Suspected fetal compromise in labour (eg. Maternal HIV or herpes, macrosomia, placenta previa)
  - Failure to progress in labour (Dystocia) (CPD)
- Fetal indications for cesarean delivery include the following:
  1. 1-Fetal macrosomia > 4500 gm
  2. 2-Multiple pregnancy
  3. 3-Transverse lie and Malpresentation ⍰ brow, chin post, shoulder & compound presentations, breech
  4. 4-Cord prolapse
  5. 5-Severe PET-relative contraindication
  6. 6-Failed induction and obstructed labor

- Maternal indications for cesarean delivery include the following:-
    1. Repeat cesarean delivery
    2. Obstructive lesions in the lower genital tract, including leiomyomas of the lower uterine segment that interfere with engagement of the fetal head
    3. Pelvic abnormalities that preclude engagement or interfere with descent of the fetal presentation in labor.
    4. Certain cardiac conditions that preclude normal valsalva done by patients during a vaginal delivery.
    5. Abnormal placentation (eg, placenta previa, placenta accrete).
    6. Active genital herpes infection or maternal HIV infection.

❖ Contraindications

- When maternal status may be compromised (eg, mother has severe pulmonary disease).
- If the fetus has a known karyotypic abnormality or known congenital anomaly that may lead to death(anencephaly).

❖ Complications

- Short term complication:
- Hemorrhage.
- 2. Infection.
- 3. Incidental Surgical Injuries.
- Emergency Hysterectomy.
- Pain.
- Thromboembolism.
- Paralytic ileus.
- Anesthesia complication.
- Long Term complication and risks to future pregnancies
- Adhesion formation.
- Uterine Rupture.
- Abnormal placentation.
- Infertility/Subfertility.
- Scar complications.
- Neonatal Complication
- Respiratory Difficulties.
- Iatrogenic injury.
- Failure to Breastfeed.

Precocious Puberty

- Occurs in only 1 of 10,000 girls and is defined as the presence of secondary sexual characteristics at an age >2.5 standard deviations below the mean (i.e., 6 years old in African Americans and 7 years old in Caucasians).

- Established dx when below the age of 8 years.

- **Hx**:
  - Ask about her sisters >> if precocious puberty is familial
  - Age of puberty
  - Established sequence of events: breast >> pubic >> axillary hair >> ovulation
  - Androgen related symptoms: hirsutisim, acne, voice

- **DDx:**

1- Central :(Gonadotropin-Dependent Disorders)
  - Idiopathic 70% (secondary sexual characteristics progress in normal sequence but more rapidly than in normal puberty and may fluctuate between progression and regression)
  - CNS causes (particularly mass effects near the hypothalamus) >> TB, encephalitis, tumors, hematomas
  - Mccune Albright syndrome
  - Long standing **hypothyroidisim**

2- Peripheral :(Pseudoprecocious Puberty)
  - Ovarian tumor
  - Adrenal tumor
  - Medications
  - Penta Jegner syndrome
  - Mucum Albright syndrome (Hx of fractures and café au lait spots with irregular borders)

- **P/E:**
  - **Hight, weight**
  - Secondary sexual characteristics
  - Abdominal examination
  - Pelvic examination
  - Neurological examination
- **Investigations:**

1- Bone age >> all increase except hypothyroidisim 2- Hormonal axis

- **Treatment according to the cause**

Dysmenorrhea

- **Hx:**

- Age<20years>>primary
- Pain characteristics
- Relative to menstruation
- Associated symptoms
- Menstrual cycle hx
- Symptoms of fibroid
- Endometriosis
- Adenomyosis
- Previous surgeries
- Previous infection
- Previous trauma
- Use of IUCD

- **P/E:**

- Primary>> generalized tenderness
- Secondary>> according to the cause

- **Treatment:**

- Primary>> NSAIDs, OCP ,anti-prostaglandins ,TENs
- Second>> anti prostaglandins ,laparoscopy ,ttt of the underlying cause

Amenorrhea

❖ **Have you ever have menstruation? If yes go to secondary amenorrhea history /if no ask primary amenorrhea question.**

- **Primary Amenorrhea:**
  - No period by age 14 and no growth of secondary sexual characteristics
  - No period by age 16 regardless of secondary sexual characteristics
- **Secondary Amenorrhea**
  - Cessation of regular menstruation for > 3 consecutive cycles if regular or > 6 consecutive months if irregular

#Primary Amenorrhea

Askabout:

1. **History of delayed puberty in mother or sibling**
2. Anorexia nervosa, Excess exercise , Stress **(pituitary amenorrhea**)
3. anosmia/hyposmia (**kallman's syndrome**)
4. **Learning problem**
5. Child hood cancer requiring chemotherapy radiotherapy **(toxic to gonads**)
6. Cyclic pelvic pain, Urinary retention**(imperforated hymen**)
7. **Do you have pubic hair or axillary hair, change in breast (development)**
8. Hair loss /cold intolerance / weight gain / constipation(hypothyroidism)
9. Galactorrhea ,Headache ,Reduce peripheral vision**(pituitary adenoma)**
10. Abdominal surgery that lead to remove of ovary (tumour /cyst / tubo ovarian abscess) 11.Hirtism ,Deep voice ,Poldness (male pattern) ,Acne

(**PCOS**)

12.In past medical history ask about DM/RF/CF

13.In drug history ask about: anti-depressant and anti-epileptic drugs

Note: - if she is married exclude pregnancy even it is a rare cause

- **INVESTIGATION:**

1. FSH& LH
2. oestradiol level
3. Peripheral blood karyotype
4. Pelvic U/S and MRI

#Secondary amenorrhea

Ask about:

- Duration of amenorrhea
- History of previous menstrual cycle
- is she doing pregnancy tes, N/V,Abdominal distension, LMP (**pregnancy**)
- History of contraceptive use (type & duration of use) **medroxy progesterone** can delay the return to normal cycle up to 1 year
- -Vigorous D&C, recurrent miscarriage , infertility ,hypermenorrhea infections: TB (**ASHERMAN'S syndrome)**
- History of PID & STI (**adhesion & destruction of the endometrium**)
- History of severe blood loss or shock after delivery (**Sheehan syndrome)**
- Breast feed (total breast feed can cause amenorrhea for 6 month)
- Galactorrhea ,Headach ,Visual disturbance(**anterior pituitary adenoma**)

- Stress, psychological prob., hypo. and hyper. Thyroid symptoms ,Excessive Exercise وAnorexia(**Hypothalamic amenorrhea**)
- Acne ,hirsitism ,Deep voice ,Booldnes (male pattern) **(PCOS**)
- Age of menopause in mother &older sister , Night sweet , Fatial flushing (**POF premature ovarian faliure /early menopause)**
- Hair loss /cold intolerance / weight gain / constipation (**hypothyroidism)**
- In drug history ask about: anti depressant and anti epileptic drugs, herbal use and over the count drug , cocaine use!!
- Family hx. of similar problem Chronic illnesses,
- cushing, Addison
- Cone biopsy (cervical stenosis)

- ***P/E:***

  Wt. ,Hair distribution , Signs of thyroid and adrenal disease Breast ,Visual field

- **Investigations:**

  Prlolactin, FSH,LH , B-HCG , TSH

Menorrhagia

- **Definition**: Bleeding more than 80 ml, presented as either prolonged menses { >7 days} or heavy menses, at regular intervals.
- ***History :***

1. Pt profil:
   - age
   - occupation
   - married or not
   - L.M.B: regular or not ,duration ,length ,OCP.
   - G?P?
   - NUM of children
   - If she is pregnant or not
   - lactating.

2. CC:
   - Heavy menses, prolonged menses of X duration
3. H.O.P.I
   1. about bleeding itself:
      - bleeding amount: num of fully soaked pads
      - duration: num of days
      - previous normal menses duration: amount
      - clots
      - color: fresh red, brown_black
      - how many cycles where heavy or prolonged

   2. ask about severity of bleeding:
      - S.O.B
      - Pallor
      - Dizziness
   3. Ovulatory vs anovulatory:
      - Midcycle pain
      - Midcycle spoting >>>>DUB

- Vaginal discharge
- Premenstrual tenderness
- Dysmenorrhea (pain inlower abdomen in first days of cycle)

4. Possible causes:
   - Fibroid
   - Adenomyosis
   - Endometriosis
   - Polyp
   - If u\s was done for her
5. Associated symptoms:
   - Abdominal pain
   - Abdominal heaviness and distension
   - G.I ,urinary symptoms
6. Hypothyroidism:
   - Mental and physical inactivity
   - Cold intolerance
   - Appetite and inc. in weight
   - Hair
   - Memory loss
7. Bleeding tendency:
   - Bleeding from other site: rectal , urethral ,epistaxis ,brasing.
   - Family hx of bleeding tendency.
   - Anticoagulant drugs: asa, heparin, warfarin.

*anemia>>>>amenorrhea
*thrombocytopenic purpra >>>>menorrhagia

8. Drugs: tamoxifie, estrogen,…
9. Social and emotional conditions

-

DDX:

A-Fibroids

Suggested by: menorrhagia alone, urinary frequency, pelvic pain, constipation, recurrent miscarriage, infertility.Mass on bimanual pelvic examination.

Confirmed by: US scan or CT appearance.

B-Endometrial carcinoma

Suggested by: abnormal uterine bleeding, bloodstained vaginal discharge, postmenopausal bleeding.

Confirmed by: pelvic US scan, hysteroscopy with tissue sampling of endometrium.

C-endometriosis

Suggested by: dysmenorrhea, heavy periods, abdominal pains, dyspareunia, infertility, pelvic mass.

Confirmed by: appearance of peritoneal deposits at laparoscopy.

D-Chronic pelvic inflammatory disease

Suggested by: lower abdominal pain, fever, vaginal discharge, dysuria. ↑ESR and ↑CRP, leukocytosis.

Confirmed by: organisms on high vaginal swab, adhesions on pelvic US scan and laparoscopy.

E- Intrauterine contraceptive device (IUCD)

Suggested by: history of its insertion, painful periods.

Confirmed by: symptoms subsiding after removal of IUCD.

F- Primary hypothyroidism

Suggested by: menorrhagia alone , cold intolerance, tiredness, constipation, bradycardia.

Confirmed by: ↑TSH, ↓FT4.

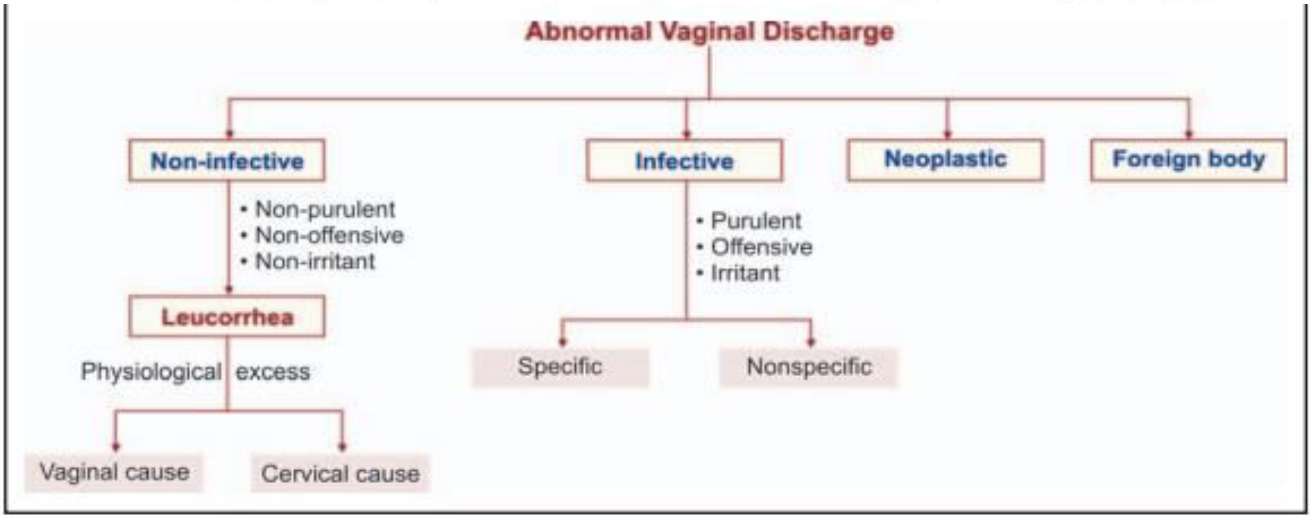
G- Bleeding diathesis

Suggested by: anticoagulant therapy, easy bruising, or other bleeding sites.

Confirmed by: abnormal clotting screen. FBC: ↓platelets.

ABNORMAL VAGINAL DISCHARGE

- **Abnormal vaginal discharge is a frequent complaint of women seen in the gynecologic clinic.**
- **The discharge may range from what is called excess of normal to one which is a part of wide spectrum of ailments. It may be blood-stained or contaminated with urine or stool,**
- **Characteristics of normal vaginal fluid: It is watery, white in color, nonodorous with pH around 4.0.**
- **Microscopically, it contains squamous epithelial cells and a few bacteria. Lacto-bacilli (Doderlein bacilli, , few gram-negative bacteria and anaerobes are present without any white or red blood cells.**
- **Causes of abnormal discharge are schematically presented below ::**



- **LEUc(k)ORRHEA Definition Leucorrhea is strictly defined as an excessive normal vaginal discharge. The symptom of excessive discharge is a subjective one with individual variation, while to declare it to be normal and not an infective one, requires clinical and laboratory investigations. The term leucorrhea should fulfill the following criteria:**

- The excess secretion is evident from persistent vulval moistness or staining of the undergarments (brownish yellow on drying) or need to wear a vulval pad. ™
- It is non-purulent and non-offensive.
- It is nonirritant and never causes pruritus.

- **TREATMENT**:

The following guidelines are prescribed to treat a case of leucorrhea.

- Improvement of general health.
- Cervical factors require surgical treatment like electrocautery, cryosurgery or trachelorrhaphy.
- Pelvic lesions producing vaginal leucorrhea require appropriate therapy for the pathology.
- Pill users may have to stop 'pill' temporarily, if the symptom is very much annoying.
- Above all, local hygiene has to be maintained meticulously. ™ Treatment for specific infection.

increased secretion. cured to treat a case of leucorrhea.

Box – I: EVALUATION OF A PATIENT WITH VAGINAL DISCHARGE

History	Physical examination	Investigations
▪ Symptoms ♦ Discharge • Duration • Itching • Dysuria • Dyspareunia • Pelvic pain ♦ Contraception ♦ Sexual behavior ♦ Previous episodes	♦ Ill health ♦ Poor nutrition ♦ Abdominal examination • Tenderness • Mass ♦ Vulval inspection • Discharge-characters (see p. 166) ♦ Genital ulcers ♦ Speculum examination • Pathology • Vagina • Cervix (ectopy) • Tenderness ♦ Pelvic examination • Tenderness • Pelvic mass • Foreign body	▪ Discharge ♦ Wet film for • *T. vaginalis* (p. 163) • Clue cells (p. 152) ♦ KOH test • Whiff test (p. 151) • Fungus (p. 164) ♦ Discharge for gram staining ♦ Pap smear (p. 164) ♦ Urine for R/E, C/S ♦ HIV serology (p. 154) ♦ Blood tests when PID is suspected

TABLE 33.2 COMMON CAUSES OF VAGINITIS AND ABNORMAL VAGINAL DISCHARGE

	Cause	Nature
Infective	• Trichomonas vaginitis (p. 163) • Monilial vaginitis (p. 164) • Bacterial vaginosis (p. 151) • Cervicitis	• Frothy yellow discharge • Curdy white in flakes, pruritic • Gray-white, fishy odor and non-pruritic • Mucoid discharge
Atrophic	Postmenopausal	• Discharge is not prominent • Irritation is prominent
Foreign body	• Forgotten pessary, tampon • Mechanical irritation	Offensive, copious, purulent, often blood stained
Chemical	• Douches, latex condoms, deodorants • Chemical irritation or allergy	Soreness is pronounced than the discharge
Excretions	Contamination with urine or feces producing secondary vaginitis	Offensive discharge with pruritus
Neoplasms	Fibroid polyp or genital malignancy	Serosanguinous, often offensive

Ddx of : Vaginal discharge

A- Excessive normal secretion

Suggested by: women of reproductive age, milky white, or mucoid discharge.
Confirmed by: normal investigations.

B- Vaginal thrush

Suggested by: pruritis vulvae with a white discharge in a well patient.
Confirmed by: high vaginal swab.

C- Bacterial vaginosis

Suggested by: fishy odour discharge, itching, irritation.
Confirmed by: high vaginal swab + wet saline microscopy shows presence of cells.

D- Cervical erosions (ectropion) **Suggested** by: no other obvious symptoms. **Confirmed** by: speculum examination.

E- Endocervicitis (gonococcus, Chlamydia)

Suggested by: symptoms in partner of urethritis.

Confirmed by: inflamed cervix on speculum examination and endocervical swab result.

F- Carcinoma of cervix

Suggested by: bloodstained discharge, irregular vaginal bleeding, obstructive uropathy, and back pain in late stage.

Confirmed by: cervical smear, cytology, colposcopy with biopsy.

G- Foreign body

Suggested by: bloodstained discharge, use of ring pessary, intrauterine contraceptive device, tampon.

Confirmed by: speculum examination or colposcopy or hysteroscopy.

H-Endometrial polyp

Suggested by: bloodstained discharge, intermenstrual spotting, postmenstrual staining.

Confirmed by: hysteroscopy.

I-Trichomonas vaginitis

Suggested by: profuse, greenish yellow, frothy discharge, dysuria, dyspareunia.

Confirmed by: protozoa and WBC on smear.

j- Gonococcal cervicitis

Suggested by: purulent discharge, lower abdominal pain, fever, cervix appears red and bleeds easily.

Confirmed by: Gram stain of cervical or urethral exudates shows intracellular Gram -ve diplococci.

L- Chlamydia cervicitis

Suggested by: purulent discharge, lower abdominal pain, fever, cervix appears red and bleeds easily.

Confirmed by: endocervical swab.

 # Initial investigations (other tests in Confirmed above): urine dipstick, high vaginal swab.

Note : don't forget to ask about ::

1- *amount (pads) *color *smell *nature (watery-mucous-pus-blood……..) 2- Timing of discharge *when start *duration *increase or decrase

3- Previous hx of same condition.

4- Associated symptoms *itching *redness *rash or ulcer on the genital area 5- Symptoms of PID Abdominal or pelvic pain *fever *dyspareunia *dysmenorrhea 6- Urinary symptom *dysuria *urgency …….etc

7- Menstrual cycle *regular menses *intermenstrual bleeding 8- Previous Pap smear

9-Risk factors : *sexual activity *steroid *pregnancy complication *DM

* multiple partners *IUCD *hx of STD *contraceptive preparation *obesity *PCO

Hirsutism

- **Hirsutism:** Hirsutism is the excessive growth of androgen dependent sexual hair (terminal hair) in facial and central part of the body that worries the patient

- **Virilism:** Virilism is defined as the presence of any one or more of the following features—deepening of the voice, temporal balding, amenorrhea, enlargement of clitoris (clitoromegaly) and breast atrophy. It is a more severe form of androgen excess.Virilism may be due to adrenal hyperplasia or tumors of adrenal or ovary.

- **Causes of Hirsutism:**

TABLE 33.13 CAUSES OF HYPERANDROGENISM

- **Ovarian**
  - Polycystic ovarian syndrome (PCOS) (see p. 459)
  - Sertoli-Leydig cell tumor (see p. 386)
  - Hilus cell tumor
  - Lipoid cell tumor
  - Hyperthecosis – Luteoma of pregnancy
- **Adrenal**
  - Adrenal hyperplasia (congenital or late onset) (see p. 465)
  - Cushing's syndrome (see p. 466)
  - Adrenal tumor
- **Obesity (android)**
  - Insulin resistance and androgen excess (p. 460)
  - HAIR–AN syndrome (p. 459)
- **Exogenous (drug therapy)**
  - Androgens, anabolics, oral contraceptives, synthetic progestogens, danazol, phenytoin, diazoxide, cortisone, etc.
- **Postmenopause**
- **Pituitary tumor** — secreting
  - Excess ACTH (Cushing's diseases)
  - Excess growth hormone (acromegaly)
- **Idiopathic**: Increased sensitivity to androgens.

- **Ddx:**

- Ovarian – Polycystic ovarian syndrome (PCOS) – Sertoli-Leydig cell tumor – Hilus cell tumor – Lipoid cell tumor – Hyperthecosis – Luteoma of pregnancy
- Adrenal – Adrenal hyperplasia (congenital or late onset)) – Cushing's syndrome – Adrenal tumor
- Obesity (android) – Insulin resistance and androgen excess– HAIR–AN syndrome
- Exogenous (drug therapy) – Androgens, anabolics, oral contraceptives, synthetic progestogens, danazol, phenytoin, diazoxide, cortisone, etc.
- Postmenopause
- Pituitary tumor — secreting – Excess ACTH (Cushing's diseases) – Excess growth hormone (acromegaly)
- Idiopathic: Increased sensitivity to androgens.

- **Physical examination includes:**

- BMI calculation Modified Ferriman – Gallway score for grading hirsulism.
- Others for: acne, acanthosis nigricans, galactorrhea and clitoral size.
- Hirsutism of rapid onset and progressive in nature or symptoms of virilization, needs exclusion of a tumor (adrenal or ovarian).
- Serum DHEA-S > 700 µg/dl may rarely be seen with adrenal tumors.
- Patients with primary amenorrhea with or without virilism, require karyotyping to exclude 'Y' bearing dysgenetic gonads.
- Hirsutism of irrespective of age, requires evaluation for adrenal or ovarian tumor. ™
- High serum level of testosterone (>150 ng/ml) is mostly associated with an androgen producing tumor.
- Serum level of DHEA-S correlate well with daily urinary 17–KS secretion.
- Further evaluation should be done with ultrasonography, CT or MRI .
- Mild hirsutism, young age, insidious onset, unassociated with virilization and having normal menstruation without any abnormal clinical finding usually point towards idiopathic or peripheral cause.
- Mild hirsutism with irregular menses may be due to PCOS.
- Oral OGTT may be done to detect insulin resistance. ™
- Women with mild hirsutism of long duration, regular menses, no virilization, require no investigation. Moderate to severe hirsutism needs serum total testosterone estimation (T).
- Raised serum T (> 150 ng/dl) needs thorough evaluation with TVS, adrenal CT for exclusion of tumors (adrenal, ovary). Serum T level < 150 ng/dl may be due to PCOS. ™
- In Cushing's disease, because of increased ACTH secretion from the anterior pituitary, there is increased glucocorticoid and androgen secretion from the adrenals.
- The findings include hirsutism, menstrual abnormalities, centripetal obesity, abdominal striae, etc. If the plasma cortisol level is is level i< 1.8 micro mg/ml after overnight 1 mg dexamethasone suppression, Cushing's syndrome can be ruled out.
- Late onset congenital adrenal hyperplasia is rarely associated with hirsutism. This is due to partial deficiency of 21-hydroxylase enzyme. Serum level of 17 α-hydroxy progesterone (17-OHP) is elevated both baseline and after stimulation of ACTH

- **Symptoms :**

- Facial hair
- Chest hair
- Weight gain
- Voice change
- Acne.
- Temporal balding
- Duration + progression:…
- Age
- Dm
- Pubertal, menstrual and reproductive hx.

- Hx of menstrual cycle. Amenorrhea or oligurea Medications (steroid).
- Married, fertile or not, use of OCP'S
- Abdominal pain, pelvic pain, weight loss, anorexia →ovarian tumer→U/S
- Weight gain, feeling sleepy, cold →hypothyroidism.
- HTN, electrolyte disturbances, cortisone injections, stria, DM, plethora, trunkal obesity→cushing

- **DDX:**

- Ovarian producing tumors →very rapid progression of symptoms: (1)androgen secreting tumor (2)PCOS.
- Adrenal:- (1) androgen producing tumor.
  (2) late onset adrenal hyperplasia.
  (3)cushing.
- Exogenous: androgen or steroid. 4-idiopathic.

- **P/E**:

-2ry sexual characteristics. - Genitalia - abdominal exam for masses.
- Hair distribution. - Cushingoid features
- Acanthosisnegricans - female contour.
- Breast examination (atrophy).

- **Investigations: TESTOSTERONE→**

- If normal →5-α- reductase/ peripheral conversion / idiopathic If -------- →DHEA :
- If normal →17-OH-p:
- If high →abdominal ct + dexamethasone suppression test If normal →pelvic u/s or ct + LH/FSH → >3→PCO.
- If high →abdominal ct + dexamethasone suppression test
- -TSH , FSH, LH, PRL. DHEAS, FREE Te, 17- HYDROXYPROGESTERONE, U/S

- **Management Principles of Hirsutism TTT:**

- To remove the source of excess androgen. ™ To suppress or neutralize the action of androgen.
- To remove the excess hair.
- Weight reduction—is an important step of management.
- Weight loss is associated with reduction of hyperinsulinemia and androgen excess.
- Ideal body mass index (BMI) should not be more than 25 .
- Removal of the source ™ Adrenal or ovarian tumor should be surgically treated. ™
- Cushing's disease can be treated by adrenalectomy, radiation to the pituitary or removal of ACTH producing tumor by transsphenoidal surgery.
- In iatrogenic cases, the offending drug should be stopped.

- **Drug therapy:**

1. OCP.
2. Spironolactone.
3. Flutamide.
4. Finasteride prosac
5. Corticosteroid.
6. Cyproterone acetate.
7. GNRH agonist.

Urinary incontinance

- **Hx:**
  - CC , age
  - when did it start? (duration , onset)

- **urinary symptoms**: Frequency ,volume , urgency , hesitancy, dysuria , hematuria, intermittent or slow steam ,incomplete emptying, continuous leakage, straining to void, nocturia (> 1 time a night), severity(size +numbers of pads, impact on social and sexual life)

- **Aggravating factor:** coughing , laughing , sneezing , staring , walking , changing position (more severe form) ,triggers (running water , hand washing , cold weather)

- **Precipitating factor**: delivaries , C/S , or NVD , more with stress incontenance ask about G:P , is she pregnant ,complication during pregnancy

- **medical problems:**
  - Chronic cough , (COPD(,Congestive heart failure ,Diabetes mellitus
  - Obesity ,Connective tissue disorders ,Postmenopausal hypoestrogenism
  - CNS or spinal cord disorders ,Chronic UTIs ,Urinary tract stones ,Cancer of pelvic organs

- **Medications** that may be associated with urinary incontinence include the following:
  - Cholinergic or anticholinergic drugs ,Alpha-blockers ,Over-the- counter allergy medications ,Estrogen replacement, Beta-mimetics, Sedatives ,Muscle relaxants ,Diuretics ,Angiotensin-converting enzyme (ACE) inhibitors
  - History of pelvic **surgery or radiation** especially prior incontinence procedures, hysterectomy, or pelvic floor reconstructive procedures
  - Spinal and CNS surgery
  - **Lifestyle issues**, such as smoking, alcohol or caffeine abuse
  - **family Hx**
  - **Associated symptoms**: abdominal or pelvic pain, prolapse ,problem during intercourse ,vaginal itching ,bowl motion(constipation), change in gait or new lower extremity weakness

- **Transient causes**
- The mnemonic **DIAPPERS** is a good way to remember most of the reversible causes of:
- **D**: Delirium or acute confusion
- **I** : Infection (symptomatic UTI)
- **A**: Atrophic vaginitis or urethritis
- **P**: Pharmaceutical agents
- **P**: Psychological disorders (depression, behavioral disturbances)
- **E**: Excess urine output (due to excess fluid intake, alcoholic or caffeinated beverages, diuretics, peripheral edema, congestive heart failure, or metabolic disorders such as hyperglycemia or hypercalcemia)
- **R**: Restricted mobility (limits ability to reach a bathroom in time)
- **S**: Stool impaction

- **types of urinary incontenance**

1. stress incontinence: with straing associated with pelvic relaxation displacment of urethrovasical junction
2. urge incontinace: urine leakage due to involuntary and inhibitor bladder contractions known as detrusor unstability
3. total incontinence: total urinary leakage , due to urinary fistula resulting from pelvic surgery or pelvic radiation.
4. Overflow incontinence: due to poor or absent bladder contraction that lead to urinary retention – over distention.
5. Mixed incontinace
6. Functional: The inability to hold urine due to reasons other than neuro-urologic and lower urinary tract dysfunction (eg, delirium, psychiatric disorders, urinary infection, impaired mobility)

*most common case stress incontinence.

- **P/E :**

1-abdominal examination looking for any masses full bladder overflow incontinence
2-pelvic examination: a- bimanual examination
b- speculum: for prolapse, cystocel, rectocele, uterine prolapse
3-through neurological examination: deep tendon reflexes anal reflexes
4-cough sings
5-looking for fistula
6-standing stress test: coughing during standing

- **InvX:**

  - urine analysis
  - urine culture : to role out infection
  - Q-tip test
  - urodynamic studies

- **MX:**

  1. supportive:

  - Pelvic floor exercise
  - Physiotherapy

  2. medical

  3. surgery : primary method of treating in case of stress incontinence

  ❖ Burch procedure : abdominal retropubic urethropexies
  trans vaginal tape (TVT) : suburethral stings peceyca

MENOPAUSE & HRT

- Menopause: absent menstruation due to cessation of ovarian activity for >12 months
- Climacteric: a transitional period leading to menopause in which ovarian activity decreases.
- Age range: 48-55 years, median age: 50-52 years
- Average perimenopausal period: 4 years

- **Symptoms**

1. Amenorrhea:

Onset: sudden/ gradual (menstrual irregularities, oligomenorrhea then amenorrhea)

2. Hot flushes:

— sudden episodes of skin flushing and sweating (skin esp. head and neck becomes red and warm)
— frequency → varies < 1/day — 3 episodes/hr
— duration → 30 sec — 5 mins, maybe followed by chills

3. Lower urinary tract atrophy (+ loss of pelvic tone and prolapse of the urethrovesical junction)

— dysuria
— urgency
— frequency
— stress and urge incontinence

4. genital tract changes (shortening of the vaginal canal, atrophic vaginits, and vaginal dryness)

— dyspareunia
— ↓libido

5. *psychological and emotional changes*

— depression
— insomnia (as a consequence oF frequent flushes at night)
— tiredness and fatigue
— irritability, inability to concentrate. memory loss
— anxiety, nervousness
— Nausea, constipation, diarrhea
— Palpitations. tachycardia
— parasthesia, intermittent dizziness
— cold hands and feet
— myalgia, arthralgia
— weight gain

6. ***increased risk for CVD, stroke, atherosclerosis and osteoporosis:***

— coronary artery diseases
— bone pain, fractures

- **Risk factors:**

1. white fair women
2. Thin/ slender
3. Smoker/ heavy alcohol drinker
4. Family hx
5. medications: levothyroxine, steroids, and heparin
6. sedentary life style

— If premature menopause → age <40 ask abt: (exclude)

1. smoking/alcohol
2. poor nutrition
3. living in high altitude
4. systemic diseases: DM, thyroid diseases

— Artificial: oopherectomy, chemotherapy, radiation, or any process that impairs ovarian blood supply.

- **past gynecological hx**

— age of menarche
— menstrual cycles: regularity, amount, frequency

- **P/E:**

— General (obesity or weight changes, BP measurement, neck masses
— ↓ in breast size and change in texture
— Chest examination to assess heart status
— Abdominal examination looking for any masses
— Pelvic examination (atrophic changes in vagina, cervical smear, bimanual examination for masses)

- **Diagnosis by:**

1. **hx**
2. **P/E**
3. ***↕FSH serum level (>40 lU/L) → if there is any doubt***

- ***Management:***

1) investigations:

— Lab test to exclude other diagnosis that may cause amenorrhea

1. Thyroid function test
2. Prolactin
3. β - hCG for pregnancy

— Routine screening tests:

1. lipid profile
2. PAP smear
3. mammogram
4. occult stool bid
5. DEXA scan

2) Treatment:

— Discussing the physiological causes of menopause and the concerns, fears, and stresses.

a. Hormonal replacement therapy (HRT)

1. ***continuous regimen:*** combination of estrogen + MPA (medroxyprogsterone) continuously every day.

— unpredictable breakthrough bleeding, but eventually lead to amenorrhe

2. ***cyclic regimen:***

Estrogen everyday + MPA for 1 -2 wks each month

OR estrogen (on day 1 —25) + MPA (on day 12 — 25)

— Bleeding occur only in the withdrawal period (predictable), but will not always lead to amenorrhea.

— *progestins are added to prevent endometrial hyperplasia and cancer, so they are not indicated if the patient is without uterus*

- **C/I for HRT:**

1. chronic liver impairment
2. known estrogen-dependent neoplasia (breast, ovary, uterus)
3. history of thrombo-embolic disease or thrombophlebitis 4 undiagnosed vaginal bleeding
4. pregnancy
5. migraine

b. *Alternative therapeutic regimens* (for whole list table 20 -2, P 210 blueprints)

— targeted toward individual symptoms

1. SSRI → mood disturbances
2. Selective estrogen receptor modulators (e.g. Raloxifene) → osteoporosis (s.e: ↑hot flushes)
3. Vaginal estrogen → vaginal atrophy
4. clonidine → hot flushes (when estrogen is C/I)

BP and lipid control medication

Postmenopausal Bleeding

- **Definition:**

- It is any virginal bleeding occurring more than 12 months after menopause (as the dx of menopause is made after 1 yr of amenorrhea)
- Any postmenopausal bleeding is abnormal and should be investigated.

- **Causes: (D.Dx)**

— Gynecological causes

1. Vaginal/ endometrial atrophy (atrophic vaginitis, atrophic endometritis) most common cause, thin mucosa that is prone to trauma and bleeding no estrogen breakdown of small vessels
2. endometrial, cervical cancer (20%)
3. endometrial hyperplasia
4. endometrial polyps (ask if the pt is taking Tamoxifen), Fibroids
5. Estrogen-secreting ovarian tumors
6. local lesions
7. infections
8. exogenous hormones (estrogen ± progesterone): withdrawal bleeding, non continuous regimen, missed dose

— non gynecological causes:

1. rectal bleeding From hemorrhoids
2. anal fissures
3. rectal prolapse
4. lower GI tumors
5. urethral caruncles (hypoestrogenemia causes the vaginal epithelium to contract and evert the urethral mucosa)
6. trauma
7. drugs: anticoagulants
8. systemic diseases → bleeding disorders

- **Diagnosis:**

1. Pelvic examination to detect local lesions
2. PAP test to assess cytology (it's a screening method for pre-invasive lesions)
3. abdominal pelvic U/S
4. vaginal U/S (more accurate than abdominal)
5. endometrial biopsy
6. hysteroscopy
7. D & C (both diagnostic and therapeutic)

- ***Non gynecological causes are dx by:***

1. History and P/E
2. anoscopy
3. occult blood stool screening
4. barium enema
5. colonoscopy

- ***Case :***

- A 65 year-old lady presenting with vaginal bleeding.

Take appropriate history to establish your diagnosis and management plan

Hx:

Greet, introduce yourself, take permission

PP:

— Age (given)
— Marital status : single/ married/ widowed
— G P : nulligravida
— LMP (menopause since when) : 10 years ago
— Medical illnesses (DM, HTN, CHD, hepatic, renal, thyroid, bleeding disorders)

HOPI :

- Characteristics of bleeding:
  - onset, duration
  - continuous/ interrupted (regularity)
  - amount, clots, tissues. pads/day - small amount, no clots
  - color: red/ brown - red
  - precipitating factors trauma, postcoital → local lesions

- Associated symptoms: Dizziness → anemia Abdominal/ pelvic pain
  - postcoital pain/ bleeding
  - postcoital pain
  - dyspareunia
  - Wight loss, fever
  - Bleeding from other orifices (rectal, mouth)

— Ask specific symptoms for each D.Dx:

1. cervical ca → past hx of intermenstrual bleeding postcoital bleeding
   previous PAP smear foully smelling discharge
2. endometrial ca → 1. nulliparous
   2. late menopause / early menarche
   3. DM, HIN, obesity
   4. breast, colon, ovarian ca (bcz these are hormonal dependent)
   5. chronic Tamoxifen use (selective estrogen receptor modulator)
   ± S & S of metastasis → lung and liver

3. polyps → HRT, Tamoxifen. previous hx of fibroid (بالرحم الياف)
4. estrogen-secreting ovarian tumors → hx of ovarian cyst (PCOS)
5. Endometrial or vaginal atrophy
   → discharge (pink or brownish) Itching
   Postcoital bleeding and pain (spotting clyspareun ia)
   Urinary symptoms: dysuria, frequency, stress incontinence
6. HRT →type (estrogen only/ + progesterone, non continuous/ continuous regimen, missed dose, duration)
7. Hx of trauma

— **Menopause symptoms**

- Hot flushes → still has hot flushes
- Dysuria, frequency. Stress incontinence (passing urine on coughing)
- Constipation, problems with defecation insomnia, depression
- osteoporosis, CVD

— **Hx of HRT type**

- Last PAP smear (if pap smear is older than 3 yr →we have to repeat it)
- Family hx: bleeding disorders, breast Ca, uterine ca
- Gyne hx
- menarche
- cycles pattern →regularity
- sexual activity
- Past Sx →Hysterectomy
- Drug hx
- ASA, anticoagulants
- HRT
- Hx of OCP use →↓ risk of endometrial ca
- Social hx →smoking, alcohol (1 risk of ca)

— **Diagnosis**: atrophic vaginitis

— **Management plan:**

Management means →Hx + PIE + investigation + treatment (expectant/ medical/ surgical)

– P/ E

- V/S
- General
- Abdominal masses, ascitis
- Gynecological exam (local examination):
  1. inspection of external anogenital region, vulva,
  2. Speculum →to inspect the vagina and cervix For local lesions And For PAP smear
  3. Bimanual →to access uterine size, consistency, and surface To assess inv uterine or adnexial masses

(Imp: done after speculum so the cytology for PAP smear is not interrupted)

- Digital rectal examination
  investigation should be done to R/O malignancy

- abdominal pelvic U/S

- Transvaginal U/S →masses
  assess endometrial thickness
  If < 3 — 5 mm (4mm) →no worries, unlikely to be Endometrial Ca, no indication for bx If > 3 — 5 mm (4mm) →suspect, do Bx

  - Endometrial biopsy
  1. Pipel biopsy → in the clinic
     by creating -ve pressure small amount of tissue high false -ve rate
  2. Biopsy by hysteroscopy

  - Hysteroscopy:
  1. Office hysteroscopy
  2. Hysteroscopy and D & C in theatre →to visualize the uterine cavity and take Bx

  - anoscopy
  1. occult blood stool screening barium enema
  2. colonoscopy

– Lab tests:

* CBC, TSH, prolactin and FSH level
* tumor markers (LDH, hCG, AFP, CEA, inhibin, and estradiol) → if there is an ovarian mass

Treatment:

* Directed at treating the causal agent
* Atrophic vaginitis and endometritis**:**
  (once cancer is ruled out)
  - Vaginal (local) estrogens →cream, pills, rings
    systemic estrogen (HRT)
* lesions of vulva and vagina: Biopsied and treated accordingly
* Lacerations of the vagina: repair
* Cervical polyps: Surgical removal by hysteroscopic resection or D&C
* Endometrial hyperplasia : (not sure)
  - Progestin therapy (mostly pts will respond and there is no risk of developing ca)
  - Hysterectomy (for those pts who fail to respond to progestins, and they are at high risk for progressing to invasive ca)

Pelvic Organ Prolapse

Patient Profile :

- Name, age, occupation, residency, marital status Gravida and **Parity**, LMP
- blood group (Rh +/-).

- **Chief Complaint:**
- Patient comes with either: 1- Heaviness in vagina 2- Mass protruding from vagina (Rectocele , Cystocele , Uterine prolapse) 3- Urinary incontinence

- **H.O.P.I:**

History of lump

- Onset (if related to recent delivery or menopause)
- Duration
- Always present or not?
- Aggravating factor? like long term standing or sitting , appearing at the end of day or after heavy lifting or " anything cause increase intra-abdominal pressure "
- Relieving factor like lying down.
- Associated symptoms: back pain (uterine prolapse)

- In ***procidentia*** ask about: purulent or **blood** stained vaginal discharge. ?! **Due to vaginal dryness/irritation and even ulceration!**

Urinary symptoms* → If with bladder prolapse!

- daytime frequency or Urgency
- Nocturia
- Leakage of urine while laughing/sneezing or coughing. (stress Incontinence)
- Dysuria + hematuria + fever (recurrent UTI).
- hesitancy, straining to void , urinary retention ,
- Incomplete voiding (due to urethral kinking / obstruction)
- Inability to empty bladder & patient needs to reduce the mass manually (by putting her finger in vagina) to empty bladder.

Bowel symptoms * → If with Rectal prolapse!

- Constipation
- Painful defecation
- Incomplete rectal evacuation & patient needs to reduce mass manually to

empty rectum.
- Fecal incontinence
- reduce the mass manually

- ***Risk factor ****
  - Ask about:
    - Multi-parity "NVD"/ no space between pregnancies/ prolonged
    - labours/Maximum birth weight.
    - Increase intra-abdominal pressure "chronic cough due to asthma, COPD"
    - Chronic constipation
    - Carrying heavy objects
    - Pelvic surgeries
    - Menopause

You Should Ask about Impact on **Sexual activity:** **(very Imp.)**
Embarrassing? Painful (dysparunia)?
Lack of sexual sensation / pleasure (for male & female)?

Impact on Social Life?

- ***Complete the history as usual:***

-Obstetric Hx, Gyne Hx, past medical Hx, Surgical Hx, drug Hx, family Hx
-Social Hx (Smoking)

- Physical Examination :

- ***Pelvic Exam :***

1) External genitalia Exam : inspect the vulva if there is mass or ulcer then ask the patient to cough or strain to demonstrate the prolapse + Incontinence

2) Bimanual exam to exclude pelvic tumors .

3) By sims speculum and the patient in the left lateral position identify the type of prolapse

#Anterior wall bulge : cystocele or urethrocele.
#Posterior wall bulge : rectocele or enterocele.

4) By combined rectal and vaginal digital exam we can differentiate between rectocele and enterocele.(easy to reduce , poppy sensation)

Investigations:

For cystocele:

- Renal US
- mid stream urine (urinalysis , culture)
- cystoscopy/urethroscopy
- urodynamim studies (Cytometry)

For rectocele:

- -anoscopy/sigmeridoscopy
- -BA enema

- **DX**

Should be investigated

* For cystocele, urethracele
  - Urethral diverticula's
  - Skene gland abscess
* For retrocede
  - Obstructive lesion of colon &rectum (lipomas, sarcomas,fibromes)
* For uterine prolepses
  - Cervical elongation
  - Prolapsed cervical polyp or cervical / endomdmal tumer
  - Lower uterine segment fibroids

- **RX**

- Nonsurgical :

1. HRT: for postmenopausal women
2. kegel exercises for mildiy symptomatic pt : tightening & releasing of pubococcygeus muscle repeatedly to muscle strength
3. vaginal pessaries (mechanical support devices) for pts with severe symptoms but in whom sx is C / I

- Surgical

1. anterior colporraphy for cystocele
2. posterior colporraphy for rectocele
3. perineorraohy repair deferent perineal body
4. vaginal hysterectomy for uterine prolapse
5. supportive surge & suspension procedure

Abnormal Uterine Bleeding

History Taking:

- **Patient profile**: Name, age, occupation, residency, Gravida and Para, blood group (Rh +/-).
- **Chief compliant**: female will come to you complains of vaginal bleeding
- ***HOPI :***

*Onset, duration

*Analysis of the bleeding:

- ✓ amount, color,
- ✓ passage of clots/tissues/vesicles
- ✓ Severity: (no# of pads per day/soaked)?
- ✓ Associated symptom: pain, fever, persistent vaginal discharge.
- ✓ Symptoms of anemia (postural dizziness, dyspnea, fatigue, palpitation)

* Analysis of previous normal cycle**:** duration, regularity, no# of pads, soaked? , color, presence of clots, associated dysmenorrhea and defines its type, intermenestrual bleeding or spotting.

*LMP, sure?, was regular (the last 3 cycles), lactating.

*Assess for symptoms of pregnancy if sexually active (morning sicknes Nausea & vomiting, breast fullness & tenderness, urinary frequency & constipation), method of birth control

*Ask **specifically** about the type of contraception used and if it's hormonal check the compliance for it / if miss pills ? (Breakthrough bleeding) , If it's IUD when inserted ? any complication happened associated with ?

*Ask about specific symptoms of the DDx:

1. Pregnancy related, ectopic pregnancy, abortion, A.P., P.P.
2. Hormonal contraception: break through bleeding (progesterone only method)
3. Hypothalamic related: chronic illness (DM, RA), sever stress, excessive exercise, eating disorders (anorexia, sudden wt change dieting, obesity)
4. Pituitary related: prolactinemia
5. Androgen excess: PCOS,, adrenal tumor, ovarian tumor (may cause estrogen excess), adrenal hyperplasia
6. Thyroid disease: hypo/hyperthyroidism
7. Outflow tract related:
   - Trauma (post coital bleeding, iatrogenic due to uterine manipulation, surges)
   - Foreign body (IUD)

- Cervical CA (intermenestrual bleeding, post coital bleeding, post menopausal bleeding, persisitent vaginal discharge last Pap smear?)
- Endometrial leomyoma or polyps
- Endometriosis, adenomyosis
- Asherman's syndrome:
- Endometrial CA (post menopausal bleeding, offensive discharge, irregular menorrhagia in perimenopause)

8. Mullerian duct anomalies
9. Ovarian cyst:
10. Cervical stenosis:
    - History: patient often complain of scant menses with cramping pain that is relived with menstrual flow. The stenosis can be congenital or secondary to scaring from infection, trauma, surgey
    - P/E: obvious scaring of internal os, unable to pass uterine sound through the cervical canal.

11. Pelvic adhesions: history of pelvic infections (cervicitis, PID, tubo-ovarian abcess), pelvic surgery, appendicitis, endometriosis.

12. Pelvic congestion: history of dull, ill-defined pelvic ache usually worse premenestruation, relieved by menses, often with a history of sexual problems)

13. Fibroid:
    - History:
        * (menorrhagia)
        * pressure symptoms: fullness & heaviness, constipation, urinary frequency & retention)
        * pain (secondary dysmenorrheal, acute infarct esp. in pregnancy, dysparenia)
        * Infertility & reproductive problems (failed implantation, spontaneous abortion, IUGR, increase risk of dystocia & c/s)

14. Infectious causes: PID, cervicitis
15. Ask about bleeding from other orifices [Hematuria, epistaxis, PR, ecchymosis, haemoptysis, aspirin/heparin intake or fetal demise (DIC)? Coagulopathy as a cause of AUB

- **Past medical history:**
  - DM, thyroid disease, bleeding disorder, HTN, breast disease.
- **Drug Hx:**- ask specifically about Anticoagulants (Heparin), tamoxifen.
- ***Family history:***
  - [Endometrial /breast/colon /cervical/ovarian] cancer. Family history of bleeding tendency
- ***Social history: smoking and alcohol.***

Physical Examination:

1. **General Examination** (ill? Signs on Anemia /pale? , BMI) + **Vital sign** (assess hemodynamic stability)
2. **Neck Examination** (thyroid)
3. **Breast Examination** (breast development ,galactorrhea, breast atrophy)
4. **Abdominal Examination** (masses/Ascitis)
5. ***Pelvic Examination:***

- External genetalia Inspection of vulva and perineum (masses/fissures/ulcers/pubic hair?)
- Speculum Examination(polyps/ulcers/masses/cervical motion tenderness)
- Bimanual Examination(uterine or Adnexal mass /tenderness)
- LN Examination (Inguinal and supraclavicular)

- ***Investigations :***

✓ Labs :
CBC (Hb), platelets, pregnancy test , coagulation profile (PT & PTT), blood type & Rh, TFT (TSH, T4), LFT, KFT, prolactine level, serum progesterone & estrogen.
✓ Pelvic U/S
✓ endometrial biopsy, pap smear
✓ hysterosalpingogram, hysteroscopy , laprascopy
✓ D & C

- ***Management:***

1) Correction of Anemia if present
2) Treating the underlying organic cause if present
- If there is No underlying organic cause then we have **DUB**, So the treatment will be:

Pharmacological

☒ Hormonal : COCPs/IUS
☒ Non-Hormonal : Mefenamic acid / Tranexamic Acid

Surgical (in females > 40 year)

☒ D & C
☒ Ovaries ablation by radiotherapy
☒ Endometrial ablation by laser
☒ Hysterectomy

Dysfunctional Uterine Bleeding [DUB] :

is irregular uterine bleeding that occurs in the absence of recognizable pelvic pathology, general medical disease, or pregnancy

Fibroids (Leiomyomas)

- **Definitions :**
  - Local proliferations of smooth muscle cells of the uterus, often surrounded by a pseudocapsule.
  - Benign smooth muscle tumors of the myometrium 20% of women over 35 years
  - Peak of symptoms: 35-45 years
  - These tumors have greater concentrations of estrogen & progesterone receptors The most common indication for hysterectomy

- ***Types: (locations)***
  1. subserosal (can be pedunculated)
  2. intramural most common
  3. submucosal (can be pedunculated)
  4. broad ligament
  5. cervical →2 %. usually single

  - Age: childbearing age
  - ↓ regress during menopause
  - ↑ by:
    1. pregnancy
    2. high levels of endogenous estrogen
    3. Exogenous estrogen
    4. OCP?

- **Symptoms:**
  1. Asymptomatic (60%)
  2.
  3. pressure symptoms:
     1. pelvic pressure and bloating (fullness and heaviness)
     2. constipation and rectal pressure
     3. urinary Frequency or retention
     4. hydronephrosis
     5. venous stasis
  4. pelvic pain
     1. Secondary dysmenorrheal
     2.
     3. Dyspareneuria

5. Reproductive difficulties
    1. infertility
    2. spontaneous abortion
    3. fetal malpresentation
    4. IUGR
    5. premature labour and delivery
    6. dystocia
    7. ↑C/S
6. Ectopic pregnancy?
7. Salpingitis?
8. hx of endometriosis, adenomyosis?
9. Polycythemia, hyperglycemia

- ***Risk factors:***
    — black race, African American (X 3)
    — nonsmoker
    — perimenopausal
    — obese women
    — nulliparous / ↑age of 1st pregnancy
    — Family hx

- ***Complicated Fibroids***
- Torsion of Pedunculated fibroids
- Hemorrhage
- Infection
- Hyaline degeneration
- Cystic degeneration
- Red degeneration (necrobiosis) – during pregnancy, presents like acute abdomen and abruption
- Calcification
- Malignant transformation

- ***When liemyosarcoma is suspected?***
    - Rapid growth of a fibroid, large size initially, symptomatic 0.1-1.0% of cases
    - More common between 50-60 years

- ***D.Dx:***

Abnormal uterine bleeding:

1. **Adenomyosis**
2. **endometrial polyps**
3. **endometrial hyperplasia**
4. **endometrial cancer**
5. **dysfunctional uterine bleeding (DUB)**

- ***Pelvic mass or uterine enlargement***

1. pregnancy
2. Adenomyosis
3. ovarian cyst
4. Ovarian neoplasm
5. tubo-ovarian abscess
6. leiomyosarcoma
7. pelvic kidney
8. ca colons, IBD

- ***Complications of firboid:***

1. spontaneous abortion
2. leomyosarcoma
3. malpresentation
4. premature labor
5. abruption placenta
6. obstructed labor/ dystocia
7. uterine inertia
8. PPH

- ***P/E:***

— V/S, pallor → anemia
— Abdominal examination → mass
— Fundal height: consistency, regularity
—PV

Bimanual examination → non-tender irregularly enlarged uterus with "lumpy—bumpy" or cobblestone protrusions that feel firm or solid on palpation

- ***Investigations:***

— Lab: CBC, bld grp. coagulation profile (esp. in severe menorrhagia)
— PAP smear
— Pelvic U/S areas of hypoechogenicity among myometrium
— MRI
— Hysterosalpigogram (HSG)
— Hysteroscopy

- ***Treatment:***

Expectant management and follow up → if asymptomatic

- Indications of ttt:

1. symptomatic (severe pain heavy or irregular bleeding anemia, infertility, or pressure symptoms…)

2. when fibroids interfere with examination of the adnexa
3. growth after postmenopause
4. extremely rapid growing

* **Medical ttt**

1. uterine artery embolization
2. Surgical ttt: Myomectomy, hysterectomy

- ***Management***

- Conservative (serial examinations annually, unless rapidly enlarging)
- Hormonal (GnRH analogs)
- Surgical

- ***Indications for Conservative management***

- Small tumor
- Asymptomatic
- Slowly growing
- During pregnancy
- Near menopause

- ***Indications for treatment with GnRH analogs***

- Treatment of large fibroids prior to resection
- In peri-menopausal state
- Immediate surgery is contraindicated

- ***What are the benefits of use of GnRH analogs before surgery?***

- Reduction in menstrual blood loss until surgery so improving anemia
- Reduction of operative blood loss
- Decreased need for hysterectomy
- If hysterectomy is to be done, vaginal hysterectomy can be done instead of abdominal

- ***What are the side effects of GnRH analogs?***

- Menopausal symptoms
- Osteoporosis (if used for > 6 months)

- ***Indications for Surgical management:***
  - Severe blood loss Symptomatic
  - Large tumor or rapidly growing (doubling in < 6 months)
  - If the fibroid is a factor for infertility or recurrent abortions

- **Types of surgeries & the choice between them**
  - Myomectomy or hysterectomy (others like uterine artery embolization)
  - The choice depends upon patient's desire for fertility, severity of symptoms & size

Venous thrombo-embolism

- Leading direct cause of maternal death Incidence , 6-12 per 10,000 With higher rate postnatally
- Ileo-femoral veins, (70 versus 9%) result in pulmonary embolism
- Left leg (85 versus 55%) (compression of the left iliac vein by the right iliac artery)
- Risk factors :
  - Thrombotic risk
    - ✓ 1:450 in FVL heterozygotes
    - ✓ 1:200 in prothrombin G20210 A heterozygotes 1:113 protein C deficiency
    - ✓ 1:2.8 antithrombin deficiency
    - ✓ 9-16 :100 in FVL homozygotes 5:100 in combined defects

• Signs and symptoms

❖ DVT:

- Leg pain or discomfort Swelling
- Tenderness
- Increased temperature and oedema Lower abdominal pain
- Elevated white cell count

❖ PE:

- Dyspnoea Collapse Haemoptysis Faintness Raised JVP
- Focal signs in the chest
- Associated symptoms and signs of DVT

❖ **DVT diagnosis:** Duplex ultrasound

- Negative ultrasound , with low level of clinical suspicion
- Discontinue the anticoagulation

❖ PE diagnosis:

- Ventilation/perfusion scan and bilateral duplex ultrasound. Interpretation is difficult
- Helical computerized tomography Pulmonaly angiography
- MRI

❖ **Treatment**

LMWH is preferable during pregnancy due to

- ¨ 1.Ease of administration
- ¨ 2. Better bioavailability
- ¨ 3. Safety (osteoporosis, thrombocytopaenia)

❖ **Treatment's risks**

- LMWH does not cross placenta
- No tetarogenicity or fetal bleeding in contrast to warfarin Warfarin crosses the placenta , embryopathy 6.4%
  - Labour and delivery : Heparin treatment should be discontinued 24 h prior to elective induction of labour or C/S

Pelvic pain

- It may be present in acute form or in chronic form.
- It should be remembered that the pain is just a symptom of an underlying disorder.
- Whereas, it is often easy to find out the underlying cause of acute pain, it is often difficult to find out the cause of chronic pelvic pain.
- Sensation of pain is found to depend on many factors in an individual: e.g. subjective feel, emotional status, genetic factors, experience, gender, pain threshold, anxiety and expectations. Women have a lower pain threshold and tolerance

TABLE 33.3 LOCALIZATION OF REFERRED PAIN

Organs	Site of referred pain
Body of uterus	Hypogastrium, anterior and medial aspect of thighs
Fallopian tubes and ovaries	Above the mid-inguinal point
Cervix	Upper sacral region
Uterosacral ligament	Lower sacral region

- Unlike somatic structures, which are wellrepresented in the cerebral cortex in terms of localization, visceral structures are poorly localized in the cerebral cortex.

- Thus, the pain arising from the pelvic organs is often localized not to the organ but referred to the skin area supplied by the same spinal nerve.

- Various neuromodulators (prostaglandins, endorphins) and neurotransmitters (norepinephrine, serotonin) are involved to modify the pain sensation in the brain.

- Visceral pain may be due to distension, stretching, hypoxia, necrosis, chemical irritants or inflammation of the viscera.

- Pelvic pain may be splanchnic or referred. One finger 'trigger point' tenderness is suggestive of nerve entrapment (ilioinguinal). Similarly 'ovarian point' tenderness suggests pelvic congestion syndrome .

- Acute Pelvic Pain: Acute pain is of short duration and generally the symptoms are proportionate to the extent of tissue damage. In chronic pelvic pain, the onset is insidious and the degree of pain is not proportionate to the extent of structural tissue damage. Most often, the basic mechanism of acute pain is due to irritation of the peritoneum by either blood or infection.

TABLE 33.4 CAUSES OF ACUTE PELVIC PAIN

Mechanism	Clinical conditions
Hemoperitoneum—peritoneal irritation	• Disturbed tubal pregnancy • Ruptured chocolate cyst • Ruptured corpus luteum or follicular cyst
Infection—peritoneal irritation	Acute PID
Chemical irritation	Following HSG
Uterine cramp	Abortion
Vascular complication with neurologic involvement	Axial rotation of ovarian tumor pedicle
Visceral distension	• Intracystic hemorrhage • Hyperstimulation syndrome • Hematometra or pyometra
Non-gynecological	• Appendicitis • UTI, Renal calculus • Intestinal obstruction • Rectus sheath hematoma • Mesenteric lymph adenitis • Pancreatitis

- **Guidelines in clinical diagnosis:**
  - Pain of gynecologic origin usually starts in the lower abdomen and then spreads to the entire abdomen.
  - Pain preceded by amenorrhea is usually obstetrically related—disturbed ectopic pregnancy should be kept in mind.
  - Anorexia, nausea and vomiting are usually correlated well with gastrointestinal mischief. Frequency of micturition, dysuria with or without fever point to the diagnosis of urinary tract infection.
  - Fever with chills and rigor is most often associated with acute PID.
  - Pain with syncopal attacks with collapse suggests intraperitoneal hemorrhage.
  - Abdominopelvic lump along with more or less stable vital signs points towards complicated pelvic tumor

- **Investigations**
  - Blood: Complete hemogram is done. An increase in white cell count specially with a shift to left may indicate infection.
  - Decreased hemoglobin level with low hematocrit value indicates hypovolemia.
  - Midstream urine for microscopic examination and culture is to be done to diagnose UTI.
  - Presence of pus cells, bacteria and red blood cells suggests UTI.
  - Urine for immunological test of pregnancy. A positive test needs to be followed with serial β and hCG measurement, ultrasonography (TVS) to rule out ectopic pregnancy.
  - With these protocols, diagnosis is established in majority and for those remaining undiagnosed cases, the following are to be employed.

- X-ray abdomen—(upright, supine and lateral decubitus film) is to be done to diagnose—intestinal obstruction or perforation. Perforation of air-filled viscus is evident by presence of free air under the diaphragm. Free fluid suggests ruptured cyst. Calculus can be evident from X-ray.
- Sonography (transvaginal) is helpful to detect pelvic mass or pregnancy—uterine or tubal.

TABLE 33.5 MANAGEMENT PROTOCOL

Definite diagnosis	*Immediate laparotomy* • Hemoperitoneum • Rupture tubo-ovarian abscess • Twisted ovarian cyst (p. 298) • Acute surgical condition
	Institution of medical therapy • Urinary tract infection (p. 410) • Pelvic inflammatory disease (see p. 127) • Gastroenteritis • Hyperstimulation syndrome (see p. 529)
Doubtful diagnosis	• To be subjected to diagnostic sonography or laparoscopy • Observation

- **Laparoscopy is helpful to visualize the pelvic pathology.**
- **In acute PID, aspiration of the tubal exudate is to be done for microbial study.**
- **Chronic Pelvic Pain:** Chronic pelvic pain (CPP) is defined as the noncyclic pain (non-menstrual) of 6 months duration or more localized to the pelvis, anterior abdominal wall below the pelvis or lower back, severe enough to cause functional disability that require medical or surgical treatment.

- **Diagnosis:** While it is comparatively easy to diagnose the cyclic chronic pelvic pain, it is difficult at times to pinpoint the diagnosis of acyclic and the non-gynecologic group. However, meticulous history taking and thorough clinical examinations — abdominal and vaginal with the possibility in mind, are often enough to clinch the diagnosis.

TABLE 33.7 COMMON NON-GYNECOLOGIC CAUSES OF CHRONIC PELVIC PAIN

Gastrointestinal	• Irritable bowel syndrome • Appendicitis • Constipation • Diverticulitis
Urological	• Interstitial cystitis (see p. 409) • Urethral syndrome (see p. 412) • Calculi
Orthopedic	Diseases of the bones, ligaments, muscles of the lumbosacral region
Neurological	Nerve entrapment or compression
Hernias	Inguinal, femoral, obturator

TABLE 33.6 COMMON CAUSES OF CHRONIC PELVIC PAIN

Cyclic	Acyclic
• **Intermenstrual pain** (Mittelschmerz) • **Dysmenorrhea** – Spasmodic – Congestive • **Premenstrual syndrome** • **Pelvic congestion syndrome** • **Endometriosis** • **Adenomyosis** • **Ovarian remnant syndrome**	• Endometriosis, adenomyosis • PID • **Uterine displacement** – Retroversion – Prolapse • Uterine fibroid • Ovarian cyst – Functional – Neoplastic • Pelvic adhesions disease secondary to PID, endometriosis or postsurgical • IUD • Trapped or residual ovarian syndrome (see p. 559) • Idiopathic – Pelvic varicosities – Psychosomatic

- ***the following guidelines are of help to arrive at the diagnosis:***

- Nerve entrapment pain is localized to a particular point of the lower abdominal wall. This may be due to entrapment of ilioinguinal, iliohypogastric or genitofemoral nerve.
Local infiltration of bupivacaine 0.25 percent and relief of pain is a confirmatory test. It is therapeutic also. Surgical exploration and excision of the nerve is also recommended

- Pessary test—In mobile retroverted uterus or slight degree of uterine descent, a pessary test may be employed. The pessary is inserted and kept for 3 months. If the symptoms are relieved, the diagnosis is certain and surgical correction is advisable

- Combined oral contraceptive pills—Cases with functional ovarian cyst producing CPP are given cyclic OC for 3 months.

- The functional cyst is likely to regress with the relief of symptoms. The same therapeutic test can be employed to relieve the midmenstrual pain or primary dysmenorrhea by making the cycle anovular.

- Cognitive and behavioral therapy (CBT) to be given to patients as it has benefits.

- Pain mapping is useful especially in assessment of adhesions.
- Patient having IUD and pelvic pain should be cautiously interpreted. The possibility of PID or ectopic pregnancy should be kept in mind.

- Ancillary aids in diagnosis:
*Blood—Complete hemogram helpful in the diagnosis of infection.
* Cervical and vaginal discharge is subjected to hanging drop preparation, Gram stain and culture, both aerobic and anaerobic. This can give a clue in the diagnosis of PID.
* Endometrial biopsy to be done in suspected cases of genital tuberculosis
* Sonography—It is of value in diagnosis of tumor, either fibroid or ovarian. 7
*Transvaginal sonography (TVS) can detect adenomyosis and ovarian enlargement due to cysts.
* Color Doppler sonography (CDS) is helpful to detect ovarian torsion. Calculi in the urinary system can also be detected with sonography. It is also helpful in assessing the progress of the therapy in PID especially when laparoscopy is contraindicated or as an alternative to it.
* Laparoscopy—Laparoscopy is an invaluable diagnostic tool in the investigation of chronic pelvic pain. It has been found that about 50 percent of cases with normal clinical pelvic findings have got detectable abnormality on laparoscopy. Conversely, one-third of women with detectable clinical pathology are ultimately proven to have normal pelvis on laparoscopy. Its chief value is to detect minimal endometriosis and pelvic adhesions. The negative finding also has got value—assures the clinician that no abnormality exists. This can relieve the patient's psychosomatic factor related with CPP.
*X-rays of lumbosacral region and hip joints helps to detect orthopedic lesions. CT scan or MRI have no place in the diagnosis of CPP except in malignant conditions.

- Treatment: Principles

*To have a definite diagnosis of the underlying disorders.

*To establish the relationship between the pathology and the symptoms. ™

*To evaluate psychosomatic factors—cause or effect. ™

*Multidisciplinary approach involving a psychologist is ideal especially when no pathology could be detected. In detectable pathology: Conservative or radical surgery is to be done to remove the offending pathology.

*Hysterectomy is ideal for women with pelvic endometriosis or adenomyosis, when she has completed child bearing.

- Medical Management of Pain

*Assurance and sympathetic handling too often cure or ameliorate the pain.

* NSAIDs:Ibuprofen, Naproxen :COX-2 inhibitors— Celecoxib, Ketorolac.

* Neurolytic agents: Tricyclic antidepressants— Amitriptyline, Imipramine, Serotonin uptake inhibitors: Sertraline, Fluoxetine, Paroxetine, Ion channel Blockers: Gabapentin, Carbamazepine.

*Narcotics (under supervision):Codeine, Methadone.

* Others:OC pills, progestogens, danazol or even GnRH analogues is indicated in young patients with minimal endometriosis, spasmodic dysmenorrhea or midmenstrual pain.

* Minimal invasive surgery includes laser therapy in pelvic endometriosis or laparoscopic adhesiolysis.Laparoscopic presacral neurectomy (PSN) and uterine nerve ablation (LUNA) are considered for midline dysmenorrhea when conservative management has failed.

*Surgery like ventrosuspension, plication of round ligaments in deep dyspareunia or even presacral neurectomy may be employed.

* Hysterectomy should be contemplated judiciously in selected cases.

* Intractable pain of malignant origin — Apart from narcotic analgesics, PSN or LUNA may relieve pain for few months

- **A female come to you with pelvic pain, take a full history. Her you will find most important points.**

❖ History Taking:

Patient profile

- Name, age, occupation, residency,
- Gravda and Para, LMP blood group (Rh +/-).

Chief compliant

- the patient usually comes to you complain of lower abdominal pain. Ask about duration to know if it acute or chronic

 # History of Presenting illness

- Ask about the pain SOCRATES

Site: unilateral vs. bilateral (bilateral --PID / unilateral -- ectopic, torsion, rupture)

Onset: sudden (torsion) OR gradual

Character: cramping -- dysmenorrhea / ache -- fibroid /sharp – rupture

Radiation: low back & buttocks – uterus OR cervix /medial aspect of thigh – ovaries OR tubes / rectum OR perineum – endometriosis.

Associated symptoms:

- fever (PID, rupture)
- nausea and vomiting (torsion, PID) vaginal discharge – (PID)
- vaginal bleeding (fibroid, PID, ectopic pregnancy)

Timing: if associated with menses or not (primary/ secondary dysmanorrhea) if it comes with intercourse this is dyspareunia (ovarian cyst, endometriosis) if it comes between menses "midcycle pain" (Mittelschmerz)

Exacerbating and reliving symptoms

Severity: out of 10 (very sever – torsion)

- ask about pressure symptoms (constipation, urgency, frequency) fibroids
- Ask about arthralgia? PID
- Ask about urinary symptoms "dysuria, gross Haematuria, frequency"
- UTI
- Ask about history of STD

 # Gynecological history

 # Obstetric history

 # Past surgical history

- ask about past pelvic surgeries or other surgeries

 # Past medical history

- history of recurrent UTI current medication allergies

 # Family history

 # Social history

❖ ask about smoking and alcohol

Investigation

- **CBC:** sensitive indicators of inflammation or infection
- Urinalysis and urine culture
- Ultrasonography
- MRI

Differential diagnosis:

- Adenomyosis;
- degenerating uterine fibroid
- ectopic pregnancy
- endometriosis
- mittelschmerz
- ovarian torsion
- pelvic inflammatory disease
- ruptured ovarian cyst
- tubo-ovarian abscess
- Cystitis
- pyelonephritis

Infertility

❖ **Infertility** is defined as the inability to conceive after one your of unprotected sexual intercourse.

- Primary infertility: a couple has never conceived before.
- Secondary Infertility: a couple has conceived before but has failed in subsequent trials.

-Patient profile (name, age, occupation, gravida and para, blood group)

- Age: after the age of 35 the ovarian reserve start to decline fast and quality of the follicles declines as well.
- Occupation: exposure to radiation can adversely affect fertility in both males and females
- G&P: If she had conceived before then she has secondary infertility , duration of infertility

-Ovulatory Factors

- Menstrual cycle: age of menarche , length of the cycle & duration of menses, regularity, dysmenorrhea, mid-cycle pain, changes in vaginal discharge at mid-cycle, breast tenderness or mood changes before menstruation, inter-menstrual bleeding, any abnormality (menorrhagia, polymenorrhea, metrorrhagia, oligomenorrhea, amenorrhea)
- Symptoms related to PCO: hirsutism, balding, acnes, obesity
- Symptoms related to increased prolcatin: galactorrhea, headaches or visual problems, taking antipsychotic drugs or dopamine
- Symptoms of thyroid disease: hair loss, weight gain or loss, cold or heat intolerance or palpitations
- Symptoms related to menopause suggesting premature ovarian failure: hot flashes, vaginal dryness, mood changes, decreased libido or pathological fractures
- Excessive stress, dieting or aggressive exercises

.

-Tubal Factors

- Previous pelvic surgery, including sterilization surgery
- History of PID
- Previous ectopic pregnancy
- History of ruptured appendicitis
- History of septic abortion Cervical Factors
- History of cone biopsy, LEEP or cryosurgery to the cervix
- History of traumatic or instrumental delivery Uterine Factors
- History of fibroids or endometriosis (& ask about their symptoms)
- History of D&C or E&C
- History of congenital anomalies in the uterus

-Ask about **the intercourse**:

- (fraquancy,time,dusparonia,IUCD ,Use of lubricants (could be spermicidal))
- Unprotected sexual intercourse 3 times a week optimizes the chance of conception.
- Fecundity: the probablility of conceiving within one menstrual cycle (25%)

- Ask about **drug** use:

- NSAIDs can inhibit ovulation.
- Chemotherapy can damage male and female gonads
- Cimetidine, sulphalazine and androgen injections. (affects sperm quality)

- Ask about previous sexual history and partners.

- Ask about **male partner**:

•If he had mumps infection.
•If he was treated with chemotherapeutic agents for malignancy.
•If surgery was done to testicles like testicular torsion, varicocele, testicular malignancy.
•If he has sexual dysfunction.

-**Family history**, ask if any of her sisters or mother had the same problem.

- Social history:

- Place of living.
- Alcohol consumption
- Illicit drug use.
- Smoking. (also ask about passive smoking) (adversely affects fertility in both men and women)

Examination

Female Examination

- **Ovulatory factors**

-Signs of androgen excess (PCO): hirsutism, acne, balding Signs of hyperthyroidism
-Signs of hypothyroidism Obesity
-Signs of increased prolcatin: galactorrhea, abnormal visual fields
-Syndromes (Turner)

- **Tubal factors**

-Pelvic tenderness, scars
-Fixed uterus & adnexa may suggest adhesions Uterine factorsPelvic mass
-Irregular uterus (fibroid or congenital anomalies)
-Cervical factors
-Motion tenderness (cervicitis(
-Evidence of a previous trauma or surgical procedure Atrophy of the cervix & vagina

Male Examination

- General look: abnormal hair, gynecoid appearance, gynecomastia
- Testes: size, absent undescended, varicocele, tenderness (infection) Penile abnormalities

Steps of Workup :

Steps	Diagnosis	Management
1 – Semen Analysis	Normal values: • Volume >2mL • PH 7.2-7.8 • Sperm Density >20 million/ml • Sperm Motility >50% • Sperm Morphology >50% normal	• If values are abnormal, repeat the semen analysis in 4-6 weeks • Abnormal semen analysis: IUI, ICSI and IVF are options. • No viable sperm: Artificial insemination by donor sperm.
2 – Anoulation	• Basal body temperature chart: NO mid cycle temperature change. • Progesterone: low. • Endometrial biopsy: proliferative changes.	• Hypothyroidism or Hyperprolactenima are causes of anovulation. • Ovulation induction: ○ Clomiphene citrate. ○ hMG if clomiphene fails. ○ Most common side effect: **ovarian hyper stimulation.** Monitor ovarian size during induction.
3 – Tubal Abnormalities : HSG & Laparoscopy	• Chlamydia Antibody: -ve IgG antibody test R/O infection induced tubal adhesions.	• HSG: no further test is done if normal anatomy. • Laparoscopy: performed with an abnormal HSG to visualize the tubes and attempt reconstruction (tuboplasty). If tubal damage is sever, IVF should be planned.

Endometrial cancer

- TAHBSO (Total abdominal hysterectomy and bilateral salpingo-oophorectomy) + possible radiation or chemotherapy

Perform D&C to r/o endometrial CA in symptomatic pt Perform D&C to r/o endometrial CA in symptomatic pt

Desire to keep the uterus

Provero 10-20 mg/ day for
11—14 days/month
Repeat endometrial bx in 3 — 6 months

Persistent hyperplasia

Hysterectomy

Normal or atrophic enIonietrium

1. Continue Provera 5 mg/day
   10 days/month For 1 2 months
2. Consider annual endometrial bx
3. Ovulation induction if childbearing desired?

No desire

Hysterectomy

- Note: In any bleeding hx:
  - Pregnant/ not, P G
  - menopause/ not
  - Bleeding amount. onset. duration...
  - associated symptoms :
    - Precipitating factors
    - symptoms of prolapse
  - cycle amount, duration, regularity
  - age of menarche