تبييض محاضرة

Anorectal Malformations (ARMs)

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Done by :

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Anorectal Malformations (ARMs)

Importorated anus

History

- Day of life 2 male infant with abdominal distension and failure to pass stool.

History Discussion

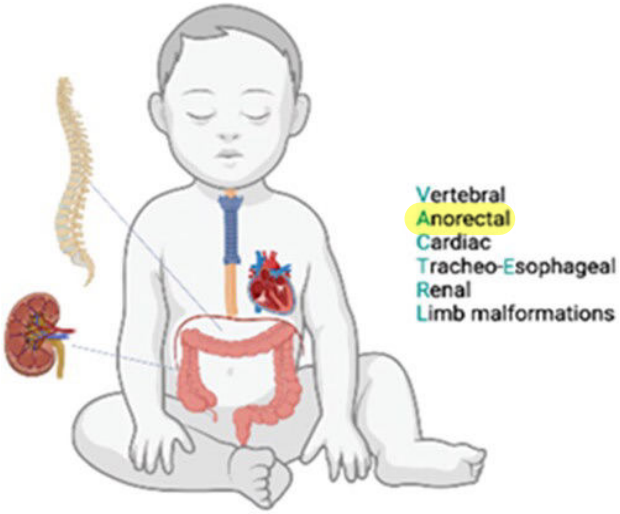
- Full term birth with no prenatal concerns – No Polyhydramnios
- Able to breast feed DOL 1
- Resistant to feed now on DOL 2
- Normal wet diapers

- Anorectal malformations (ARMs) is commonly referred to :
1. as *imperforate anus*. ((The most common presentation))

- A normal anal opening is nonexistent and the colon empties anteriorly either onto the perineum or towards the vagina in a female or into the urinary system in a male.

- There are also instances of atresia where the rectum is blind ending with no connection or external opening. OR 2. Fistula
  - In male → recto-vesical
  - In female → recto-vaginal
- The distance away from the normal anal opening correlates with the degree of associated abnormalities (VACTERL Association).

2. Anus is Found , but is not in it's normal position. ((out of the musele complex, anterior located) → small, not Functioning.



Associated conditions

- **V vertebral anomalies**
- **A anal (imperforate anus) anomalies**
- **C cardiac anomalies**
- **TE trachoesophageal fistula**
- **R renal anomalies**
- **L limb (radius) anomalies**

Causes:

- genital
- environmental

Epidemiology and Pathology

- ARM occur in one in every 4000 to 5000 births.
- They are slightly more common in males (1.2:1).
- The risk of having a second child with an ARM is approximately 1%.
- Failure of complete hindgut separation into ventral urogenital portion and the dorsal anorectal portion.
- Known association with trisomy 21.

Presentation

- Neonatal Intestinal Obstruction:
  - Delayed or absent passage of meconium
  - Abdominal Distention
  - Bilious Vomiting

((in cases of atresia & fistula))

- Meconium Per urethra — Male
- Meconium Per Vagina — Female

Causes of fistula

Classification

Below the lavatory ani

Male ARM Classification by Location		
Lower		
Anal stenosis	1%	
H-type fistula	4%	
ARMs with no fistula	5%	
Perineal (cutaneous) fistula	10%	
Recto-bulbar urethra fistula	37%	The most common
Higher		
Recto-prostatic urethra fistula	35%	
Recto-vesical fistula	8%	

Above the lavatory ani

Newborn Male – Anorectal Malformation

Perineal Inspection
(R/O Serious, Lethal Associated Defects)

- Perineal Fistula → Anoplasty
- Rectal gas below coccyx, No associated defects → posterior sagital anorectoplasty → Consider PSARP with or without colostomy
- Rectal gas above coccyx, Associated defects, Abnormal Sacrum, Flat Bottom → Colostomy

STEPS
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In male and female ← Perianal fistula : Anteriorly located & stenosis

Female ARM Classification by Location		
Lower		
Recto-vaginal fistula	< 1%	
Anal stenosis	1%	
ARMs with no fistula	5%	
Perineal (cutaneous) fistula	18%	Congenital
Recto-vestibular fistula	70%	
Complex		
Cloaca (Single Opening)	5%	The most severe

All of the digestive, urinary and reproductive tracts open in one chamber

One opening (complex)

- If there is 3 opening : indicate recto vestibular fistula for → rectum , vagina , urethra

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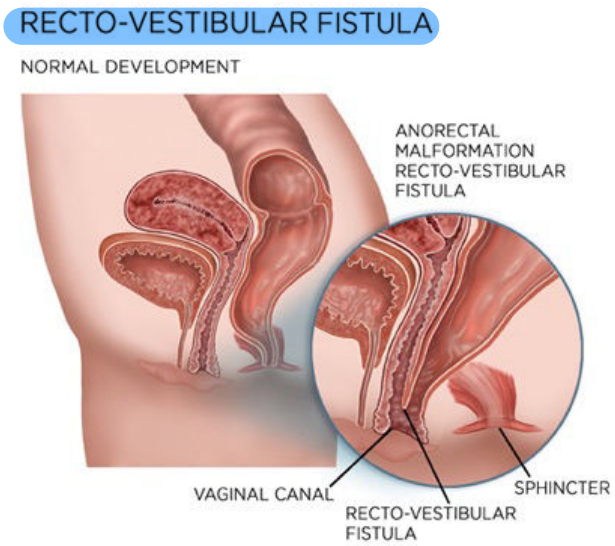
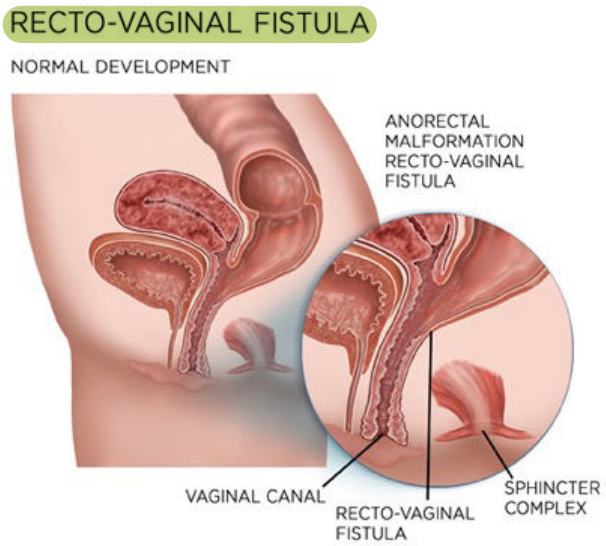
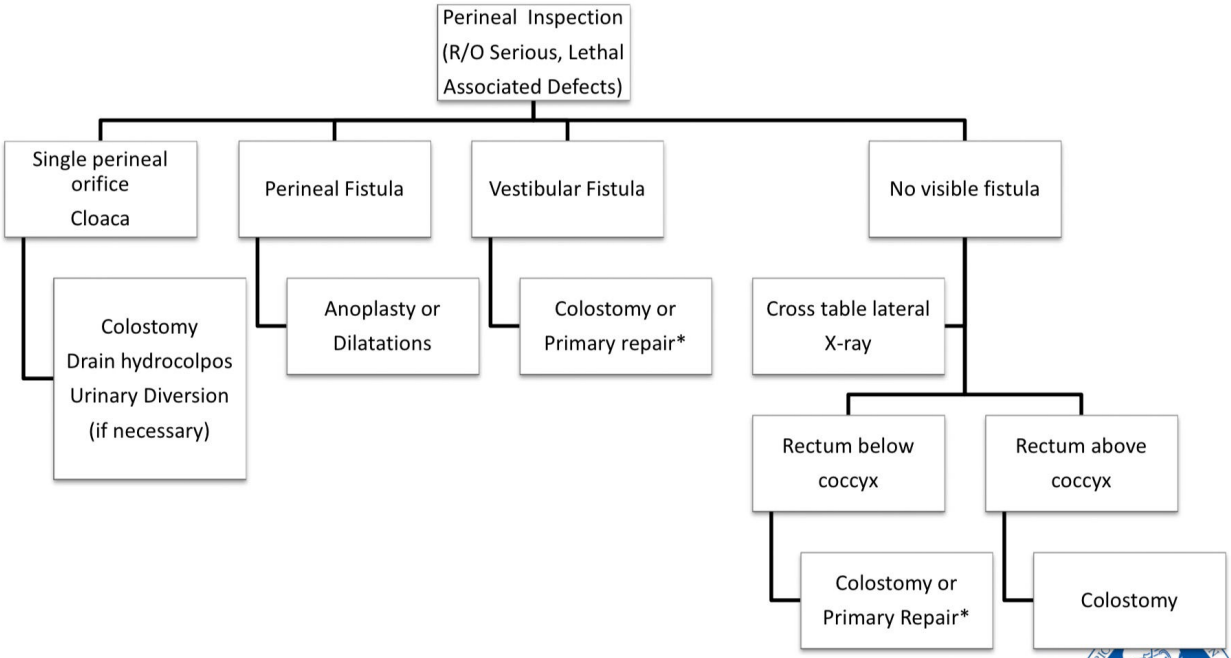
- If there is 2 opening : indicate rectovaginal fistula for → vagina , urethra





Newborn Female – Anorectal Malformation



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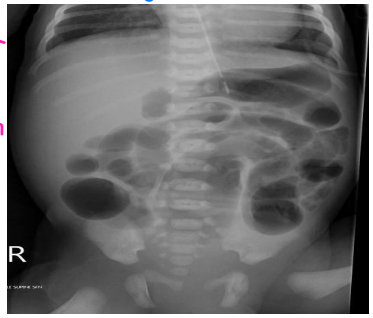
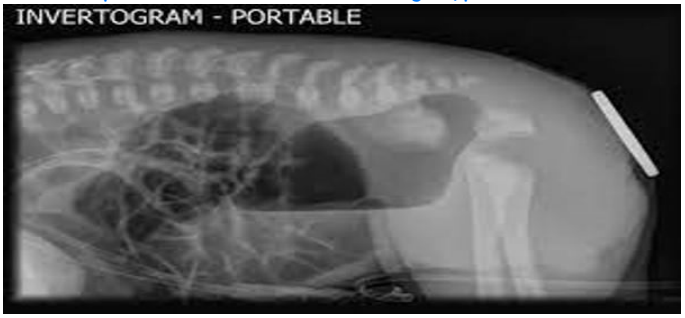
Assessment

- Plain Radiographs
- *Chest and Abdomen* to evaluate for vertebral anomalies and esophageal atresia after a nasogastric tube is placed
- *Lateral prone* ('invertogram') → To assess the fistula if high or low

A coin/metal piece is placed over the expected anus and the baby is turned upside down (for a minimum of 3 minutes). The distance of the gas bubble in the rectum from the metal piece is noted: >2 cm denotes high type

Anorectal malformation without Esophageal Fistula





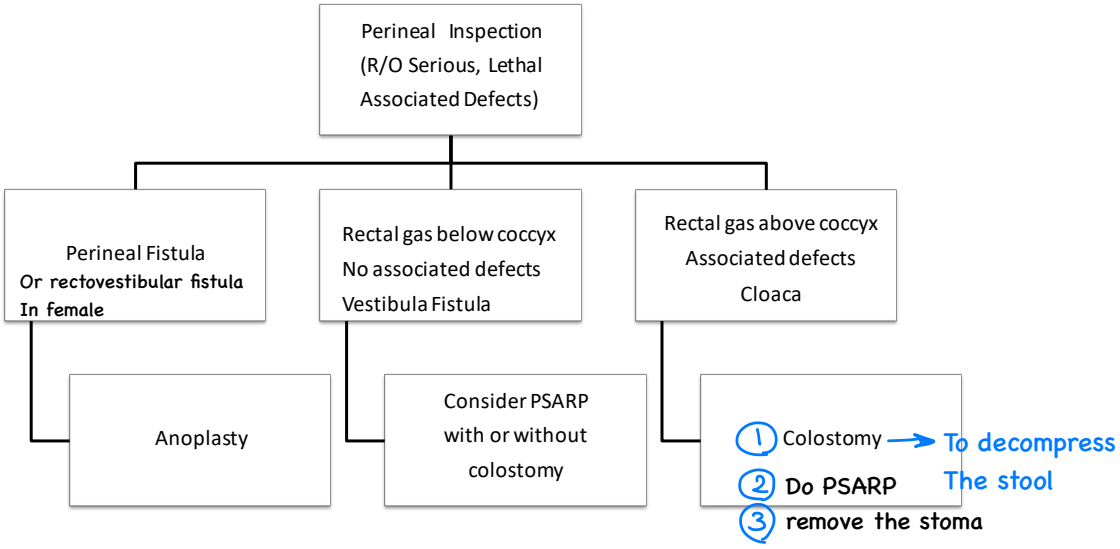
- **VACTERL Work up**

- Echocardiogram
- Renal Ultrasound (GU anomalies are the most common in ARM)
- Spine Ultrasound and X-Ray (Has prognostic factor) → Check vertebrae
- Radius X-Ray if abnormality is noted on physical exam.

- **Document if perineum is flat or well developed (Prognostic Factor)**

Document the sacrum → ((if there is sacrum agenesis)) , sacral plexus is not found
This lead to → incontinence

- Low Variants: Division of perineum from site of fistula to anal musculature
- High Variants: Division of perineum form anal musculature to coccyx
- Placement of rectum within identified anal sphincter complex

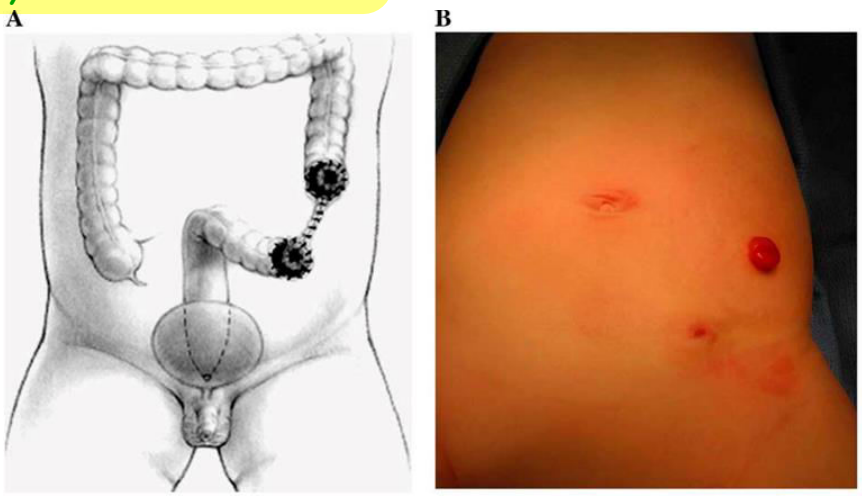


Diverting colostomy (Divided Colostomy)

Divided Colostomy with mucous fistula ::

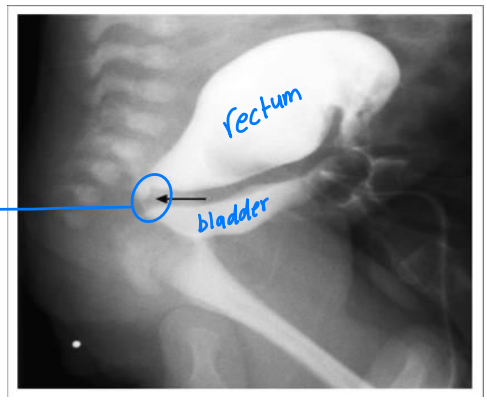
* proximal end for stool evacuation

* distal end to assess the level of the Fistula



Planning Staged Procedure

- **Evaluation of Anatomy**
  - **VCUG** → (voiding cysto-urethro gram)
  - **Antegrade colostogram via distal limb**
  - **Cystoscopy**
  - **Vaginoscopy**



Operation: PSARP Procedure

- Combined perineal and abdominal approach required for higher types.
- Colonic diversion reversed once perineum healed (6-8 weeks after PSARP)

Then cut the skin, subcutaneous tissue, release the rectum laterally & medially ,, ligate the fistula then cut it, put the rectum in central position

Complications

- Avoidance of urinary system fecal contamination
- Perioperative antibiotics
- Delay in enteral feeding for primary reconstructions

- **Peri-operative**
  - Infection
  - Bleeding
  - Wound Dehiscence
  - Urinary Tract Injury
- **Long Term**
  - Anal stenosis
  - Fecal incontinence
  - Chronic constipation

Occur most commonly in the high levels.

اسئلة من موقع الدكتور ::

Self-Assessment Questions

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Question 1

The following landmark determines severity of IA variant:

A. Anal sphincter complex position
B. Variability of sacral anomaly
C. Level of descent of rectum
D. Formation of pelvis

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Question 1

The following landmark determines severity of IA variant:

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Question 2

- **Reconstruction is advised to proceed from a posterior, _____ approach.**

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Question 2

- Reconstruction is advised to proceed from a posterior, __MIDLINE__ approach.

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Question 3

- The greatest impact on the ability to achieve fecal continence is which of the following:
  - A. Severity of malformation
  - B. Technical expertise
  - C. Compliance in dilation program

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Question 3

- The greatest impact on the ability to achieve fecal continence is which of the following:

  A. Severity of malformation

  B. Technical expertise

  C. Compliance in dilation program

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Final Discussion/Review

- Thorough inspection of perineum for fistula location, esp. in female infants
- Inverted cross-table radiograph for assessment of distal rectum
- VACTERL associations in assessment
- Appropriate timing of interventions
- Continuing ongoing followup until verification of fecal continence.

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Archive

*** Reagarding fistula in ano wrong :**

high and low treated the same by fistulectomy

*** All of the following are true about fistula in ano except;**

A. Most of them are low type

B. Operations on high fisulae may end up with faecal incontince as a complication

C. Posterior fisulae are straight according to Goodsall`s rule

D. Most specific fistula are of graulomatous lesion

E. It usually follows perianal abscess