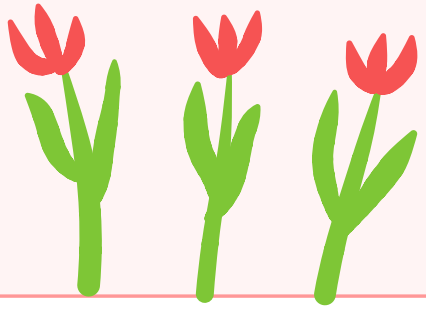
تبييض محاضرة

Haemorrhage

د. محمود العوايشة

Done by :



Haemorrhage

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Definition

- Is the escape of blood from the vasculature into surrounding tissues, a hollow organ or body cavity , or to the outside .
- Is most often caused by trauma . Most common of hemorrhage
- Is noted by the following terms : -

A. Hematoma

- Is localized Haemorrhage within a tissue or organ.

B. Hemothorax , hemopericardium , hemoperitoneum , and hemarthrosis

- Are Haemorrhage into pleural cavity , pericardial sac, peritoneal cav-ity, or a synovial space , respectively .

C. Petechial Haemorrhages, petechiae, or purpura

- Are small punctate Haemorrhages in the skin, mucous membranes, or serosal surfaces.

D. Ecchymosis

- Is diffuse Haemorrhage, usually in skin and subcutaneous tissue.

Types of Haemorrhage :-

1) **Arterial Haemorrhage** - from an artery

2) **Venous Haemorrhage** - from a vein

3) **Capillary Haemorrhage** - from a capillary

4) **Primary Haemorrhage** - if bleeding immediately follows an injury

Arterial hemorrhage:

1. Size of blood vessels: large, medium,small • • • • Abdominal aorta the measurement 1 inch / 2.5cm

2. source

3. type of hemorrhage: diffuse or not

4. colour: bright red due to it containing oxygen

5. fatal

venous hemorrhage:

- specifically (SVC,IVC)

- Unsaturated

- colour is clear

Capillary hemorrhage:

1. Diffuse

2. results from ooze

primary hemorrhage: type of blood bleeding occurs within the intra-operative

secondary hemorrhage: 1-2 weeks

elderly

most common in sepsis , cancer

Reactionary hemorrhage: 4-5 hours

- most common in military zone :
- Head and Neck
- Back basg

* in thyroid .. Reactionary hemorrhage
so we use colour incision due to healing is very quick

5) **Reactionary Haemorrhage** - delayed bleeding after injury

6) **Secondary Haemorrhage** - delayed bleeding from sepsis .

7) **Internal Haemorrhage**

we can't distinguish it
* look for pulse, rhythm, coronary output, respiratory
most common .. spleen,liver,small bowel
perforation to large bowel, peritoneum

8) **External Haemorrhage**

penetrated or not by examination
look for laparoscopic in internal bleeding

Methods of determining blood loss

- **Blood clot**

according to the site of hemorrhage.. we measurement how many blood losses
3 cc

- **Swelling in closed fractures**

Breck of the continuity of bone
if fracture in femur in upper or lower or in the shaft the amount of blood that losses 1-2 liter

in fibula an tibia 1.5-2 liter

in pelvis 3 liter

in scull 300-400 cc

in ribs 120-140 cc

- **Swab weighing**

to determination amount of blood

OR estimate the amount
like liver , largest gland , The weight with blood 3 k

Treatment of Haemorrhage :-

Most common digital pressure

- It should be treated immediately then minimize further blood by pressure packing position & rest & operative procedure .

with abdominal bath / pressure for a 2-3 minutes/packing for a 2-3 days

1) ***Pressure & packing*** Base line investigation
2) ***Position & rest*** Anti Trendelenburg The head above, The lower limb is down we use it in laparoscopic — Trendelenburg position The head down, The lower limb is above in hypotension
3) ***Operative techniques*** By suturing if the previous steps failed
4) ***Natural blood volume and red cell recovery .***

if hemoglobin less than 6 indicate blood transfusion

Classification

1) Blood loss :-

- Hemorrhaging is broken down into four classes by the American College of Surgeons' Advanced Trauma Life Support (**ATLS**).
- **Class I Haemorrhage** involves up to 15% of blood volume. There is typically no change in vital signs and fluid resuscitation is not usually necessary. small amounts of blood loss

No blood transfusion due to the body control this condition by Reactionary

neurological receptors
Aldosterone - Angiotensin hormone

- **Class III Haemorrhage** involves loss of 30-40% of circulating blood volume. The patient's blood pressure drops, the heart rate increases, peripheral hypoperfusion (***shock***), such as capillary refill worsens, and the mental status worsens. Fluid resuscitation with crystalloid and blood transfusion are usually necessary.

inadequate blood perfusion

- **Class IV Haemorrhage** involves loss of >40% of circulating blood volume. The limit of the body's compensation is reached and aggressive resuscitation is required to prevent death.

Class 1 hemorrhage	Class 2 hemorrhage	Class 3 hemorrhage	Class 4 hemorrhage
❖ 15 % blood loss	❖ 15-30% total blood volume	❖ 30-40% loss of circulatory blood volume	❖ Loss of more than 40% of circulatory blood volume
❖ No change in vital signs	❖ Tachycardia, Skin may start to look pale and be cool in touch	❖ Blood pressure drops, the heart rate increases, capillary refill worsens	❖ Limit of body's compensation reached
❖ Fluid resuscitation is not usually necessary	❖ Volume resuscitation with crystalloids (Saline solution or lactated Ringer's solution) ❖ Blood transfusion is not typically	❖ Fluid resuscitation with Crystalloids and blood Transfusion are usually necessary	❖ Aggressive resuscitation is required to prevent death

- This system is basically the same as used in the staging of **hypovolemic shock.**

- Individuals in excellent physical and **cardiovascular** shape may have more effective compensatory mechanisms before experiencing cardiovascular collapse. These patients may look deceptively stable, with minimal derangements in vital signs, while having poor peripheral perfusion. Elderly patients or those with chronic medical conditions may have less tolerance to blood loss, less ability to compensate, and may take medications such as betablockers that can potentially blunt the cardiovascular response. Care must be taken in the assessment of these patients

The mechanism that increase blood pressure
1- Baroreceptor
2- RAAS

2) World Health Organization:-

- The **World Health Organization** made a standardized grading scale to measure the severity of bleeding.

Grade 0	no bleeding
Grade 1	petechial bleeding;
Grade 2	mild blood loss (clinically significant);
Grade 3	gross blood loss, requires transfusion (severe);
Grade 4	debilitating blood loss, retinal or cerebral associated with fatality irreversible

hemoglobin less than 6

3) Origin : -

A. Mouth :

- ***Hematemesis*** - vomiting fresh blood surgical causes
- ***Hemoptysis*** - coughing up blood from the lungs

To distinguish between lower and upper bleeding
by ligament if treitz

B. Hematochezia - rectal blood

C. Hematuria - blood in the urine from urinary bleeding

according in the beginning or meddle or ending of micturition

D. Upper head :

anterior, meddle, posterior intracranial bleeding
the most common is the meddle intracranial bleeding
amount of blood 400-500 cc

- ***Intracranial Haemorrhage-*** bleeding in the skull.
- ***Cerebral Haemorrhage*** - a type of intracranial Haemorrhage, bleeding within the brain tissue itself. most congenital rupture of blood vessels
- ***Intracerebral Haemorrhage*** - bleeding in the brain caused by the rupture of a blood vessel within the head. See also hemorrhagic stroke.
- ***Subarachnoid Haemorrhage*** (SAH) implies the presence of blood within the subarachnoid space from some pathologic process. The common medical use of the term SAH refers to the nontraumatic types of Haemorrhages, usually from rupture of a berry aneurysm or arteriovenous malformation(AVM). The scope of this article is limited to these nontraumatic Haemorrhages.

E. Lung :

- ***Pulmonary Haemorrhage***

F. Gynecologic :

- ***Vaginal bleeding:***
  - *Postpartum Haemorrhage*
  - *Breakthrough bleeding*
- ***Ovarian bleeding***. This is a potentially catastrophic and not so rare complication among lean patients with polycystic ovary syndrome undergoing transvaginal oocyte.
- **G. Upper gastrointestinal bleed**

Causes

- Bleeding arises due to either **traumatic injury**, underlying **medical condition**, or a **combination**.

1.Traumatic Injury :

- Traumatic bleeding is caused by some type of injury. There are different types of wounds which may cause traumatic bleeding. These include:

- **Abrasion** - Also called a graze, this is caused by transverse action of a foreign object against the skin, and usually does not penetrate below the epidermis.

- **Excoriation** - In common with Abrasion, this is caused by mechanical destruction of the skin, although it usually has an underlying medical cause
- **Hematoma** - Caused by damage to a blood vessel that in turn causes blood to collect under the skin.
- **Laceration**- Irregular wound caused by blunt impact to soft tissue overlying hard tissue or tearing such as in childbirth. In some instances, this can also be used to describe an incision. penetrating or not
- **Incision** - A cut into a body tissue or organ, such as by a scalpel, made during surgery.
- **Puncture Wound** - Caused by an object that penetrated the skin and underlying layers, such as a nail, needle or kni

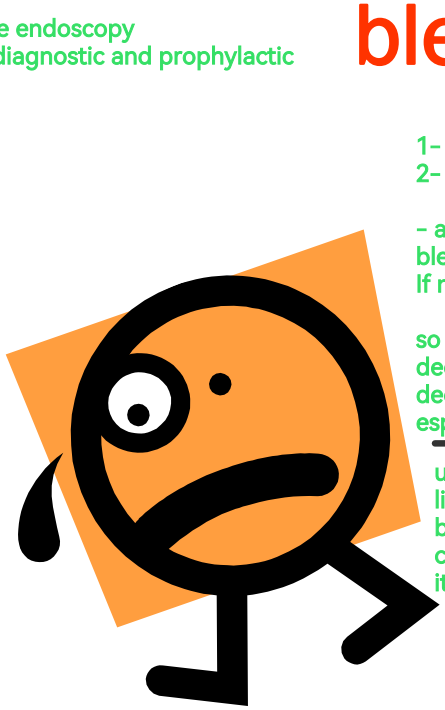
- **Contusion** - Also known as a bruise, this is a blunt trauma damaging tissue under the surface of the skin
- **Crushing Injuries** - Caused by a great or extreme amount of force applied over a period of time. The extent of a crushing injury may not immediately present itself.
- **Ballistic Trauma** - Caused by a projectile weapon such as a firearm. This may include two external wounds (entry and exit) and a contiguous wound between the

2. **Medical condition :**

- **Intravascular changes** - changes of the blood within vessels (e.g. ↑ blood pressure, ↓ clotting factors)
- **Intramural changes** - changes arising within the walls of blood vessels (e.g. aneurysms, dissections, AVMs, vasculitides)
- **Extravascular changes** - changes arising outside blood vessels (e.g. *H pylori* infection, brain abscess, brain tumor)

How to confirm diagnosis of bleeding

The endoscopy
is diagnostic and prophylactic



1- history
2- source of hemorrhage

- angiotube if blood presented .. upper ligament of treitz bleeding
If not .. lower ligament of treitz bleeding

so when we put nasogastric tube lead to
decrease pressure / tension
decrease fluid
especially in perforated patient and stab wound

upper GI endoscopy
like H.pylori
bleeding
constipation
itching

lower GI endoscopy
proctoscopy
rectum exam
* normal anal canal 4cm
*normal rectum 18-22cm
*sigmoid typical 30-35cm or to 45cm
- descending colon
transverse colon 40-45cm
hepatic flexure
Ascending colon
cecum

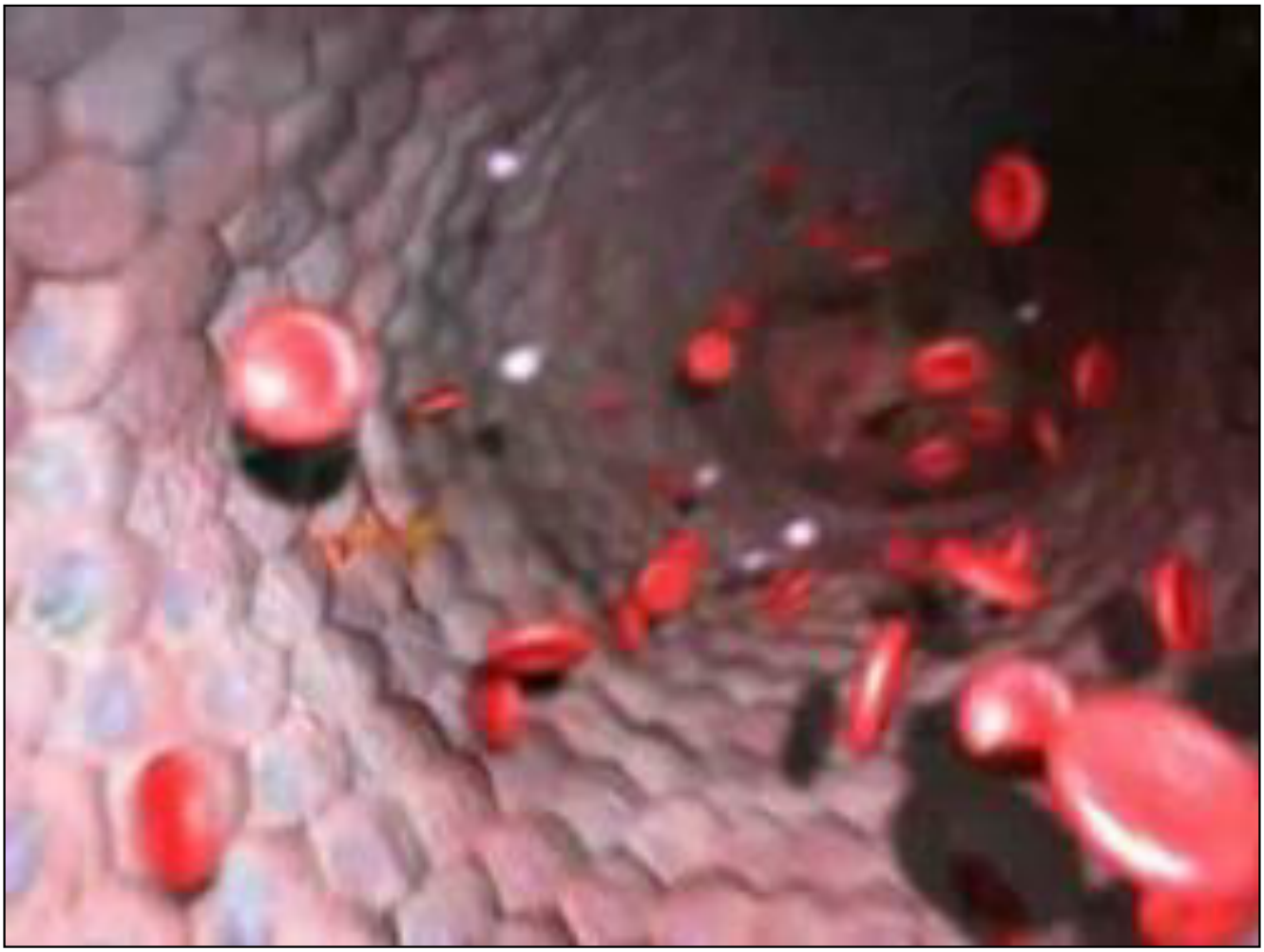
Archive

36.All of the following are manifestations of internal hemorrhage, EXCEPT:
A. Progressive pallor
B. Progressive hypotension
C. Progressive bradycardia
D. Rapidrespiration
E. Cold extremities

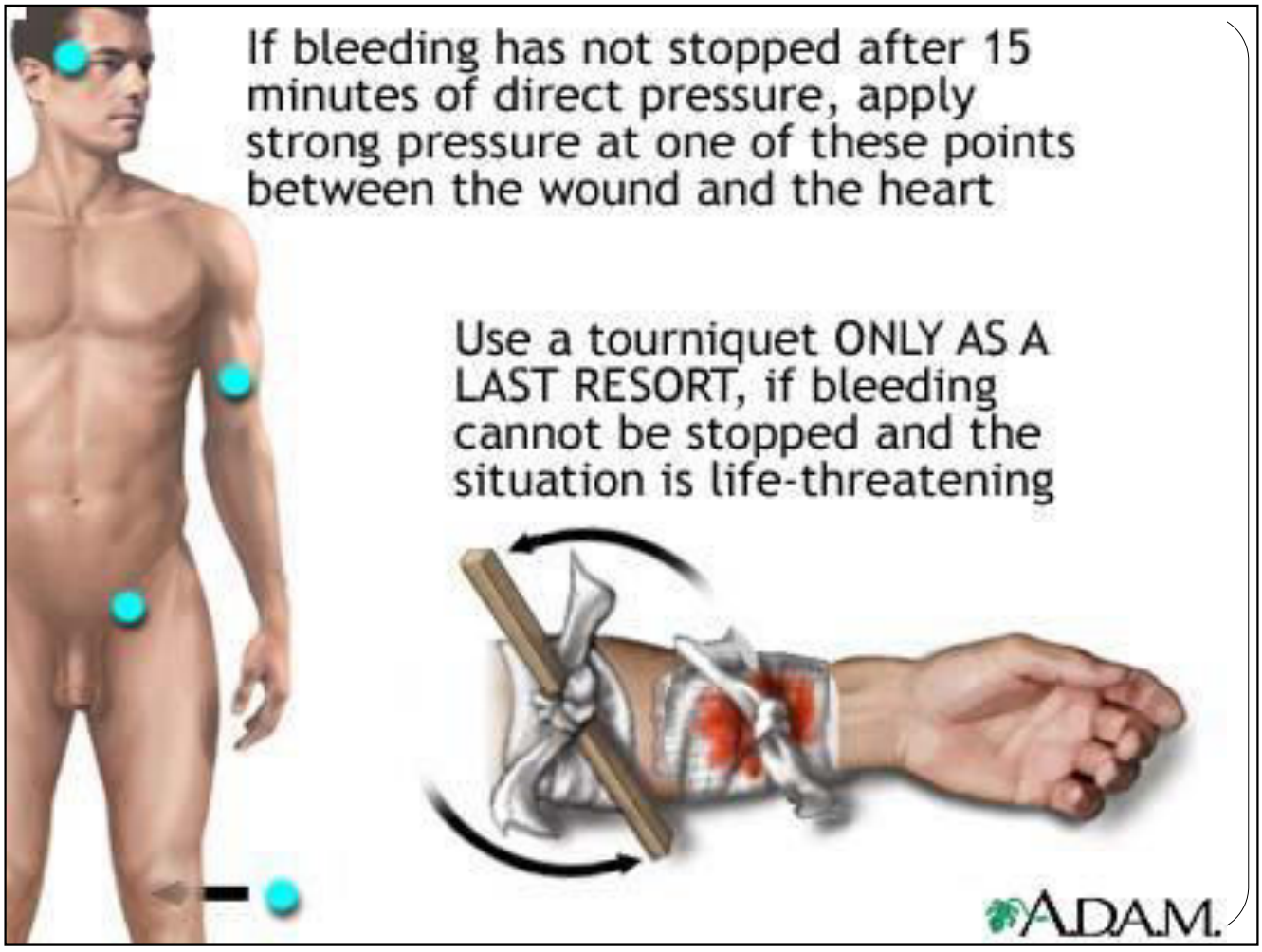
35.Hemorrhage occurring 7 to 10 days after surgery is called: (повтор)
A. Capillary hemorrhage
B. Reactionary hemorrhage
C. Primary hemorrhage
D. Secondary hemorrhage
E. Venous hemorrhage

52.reactionary hemorrhage: Wrong about it :
A. after 24 hours
B. Slipped ligature
C. Caused by infection ???
D. Caused by dislodging of clot
E. Usually needs reoperation

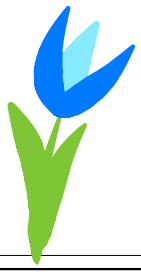
66. All of the following are manifestations of internal hemorrhage, EXCEPT:
a. Progressive pallor
b. Progressive hypotension
c. Progressive bradycardia
d. Rapid respiration
e. Cold extremities




أنواع النزيف الدموي
شرياني
شعري
وريدي


If bleeding has not stopped after 15 minutes of direct pressure, apply strong pressure at one of these points between the wound and the heart
Use a tourniquet ONLY AS A LAST RESORT, if bleeding cannot be stopped and the situation is life-threatening
A.D.A.M.

Any Questions?



THANK YOU ☺

DR.MAHMOUD
AL-AWAYSHEH