



## Fourth Stage

## General Surgery

م.د. علي سلمان جاسم

### Lecture 4

# Hemorrhage

## Causes of acute Hemorrhage:

- 1-Congenital;like congenital bleeding disorder e.g hemophilia.
- 2- Acquired.
  - 1 – Trauma ( penetrating wound ) .
  - 2 – High pressure inside blood vessels (hypertension and varicose vein).
  - 3 – Abnormal blood vessel (enurysm)

## Types of hemorrhage:

### A-According to sources:

#### 1 – Arterial hemorrhage:

A – Bright red blood (colour).

B –it flows as a jet which rises and falls in time with the pulse (flow).

#### 2 – Venous hemorrhage:

A– Dark red blood.

B-Steady and copious flow when rapid blood loss , especially when large veins are opened ( femoral and jugular ) .

#### 3 –capillary hemorrhage

A- Bright red. B – Rapid and ooze. C – In Haemophilia, blood loss becomes serious if it continues for many hours.

**B – According to time of hemorrhage:**

**1 – Primary Hg:** hemorrhage occurs at the time of the injury or operation.

**2 – Reactionary Hg:** Hg that may follow primary hemorrhage within 24 hours (usually 4 – 6hr), mainly due to many **Causes:**

A – Slipping of a ligature.

B – Dislodgement of clot, especially in tonsillecting.

C – Cessation of reflex vasospasm.

**Precipitating factors:**

A – In case of Blood Pressure return to normal and refilling of venous system are recovery from shock.

B – coughing, vomiting leading to increase in venous pressure

**3 – Secondary hemorrhage:** occurs after 7 – 14 days.

**Causes:**

A – Infection.

B – Sloughing of part of the arterial wall , predisposing factors are pressure of a drain tube , fragment of bone , a ligature in an infected area or cancer .

C – After arterial surgery and amputation

**C- According to site of hemorrhage:**

1 – External Hg: it is visible and revealed Hg. e.g: penetration of skin by knife, piece of glass or bullet.

2 – Internal Hg: it is invisible and called **concealed Hg** e.g: Rupture of spleen or liver, ectopic gestation, fracture femur and cerebral Hg. **Concealed Hg may become revealed as in:**

A – Hematemesis or melena from bleeding of peptic ulcer.

B – Hematuria from a rupture kidney.

C – Vaginal bleeding from uterus during pregnancy.

**Clinical feature of acute hemorrhage:**

1 – Visible blood loss.

2 – Pallor, restlessness and increase pulse rate (rapid thready pulse) BP maintained first by compensatory mechanism, when the bleeding continues or becomes severe causing hypotension.

3 – uncontrolled bleeding leads to air hunger (deep sighing of breathless) clammy skin and empty vein, later on leading to thirst, tinnitus and blindness.

**Hb level:** After a few hrs Hb decreased due to hemodilution.

## Treatment of hemorrhage:

### A – Stop or minimize blood loss by:

- 1 - Pressure and packing .
- 2- Position and rest . Procedure ( ligation, repair and excision ) .

### B – Restore blood volume by:

- 1 -Blood transfusion .
- 2 - Albumin 4.5 % , plasma , dextran , gelatin .
- 3 - Normal saline **and** mannitol.

– Pressure: by dressing, pack, digital pressure as in epistaxis balloon to control the bleeding from oesophageal varice.

– Packing: by rolls of wide gauze which tied together to ensure complete removal later.

### C-Position and rest:

1 – Elevation of limb in ruptured varicose veins.

2 – Bed elevator to raise the foot of the bed

**(trendelenburg position)** lead to increase venous return to the head lead to increase cardiac output, this position used in stripping of varicose vein.

3 – Reverse trendelenburg position in thyroidectomy (tilted feet down wards).