

Vascular diseases:
Varicose veins, DVT and Aneurysms
CVS6

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Lecture 6

Diseases of arteries and veins:

- Pathology of varicose veins, thrombophlebitis and deep vein thrombosis.
- Definition of aneurysm, types and aetiology of aneurysms.

Varicose Veins



Varicose Veins

- Abnormally dilated, tortuous veins produced by prolonged increase in intraluminal pressure and loss of vessel wall support
- The *superficial veins* of the lower leg, venous pressures in these sites can be markedly elevated
- 10% to 20% of adult males
- 25% to 33% of adult females

Varicose Veins

- Increased risk:
 - Obesity
 - Hereditary
 - Proximal thrombus
 - Proximal compression (e.g. tumor)
 - legs are dependent for long periods
 - Higher incidence in women (pregnancy)

Varicose Veins

- Complications
 - Stasis dermatitis
 - Delay healing
 - Stasis, edema, trophic skin
 - Varicose ulcers



Stasis dermatitis

Varicose ulcer



DVT

The deep leg veins account for more than 90% of cases of phlebothrombosis

- Other sites include:
 - The periprostatic venous plexus in males
 - The pelvic venous plexus in females
 - The large veins in the skull and the dural sinuses (especially in the setting of infection or inflammation)

DVT

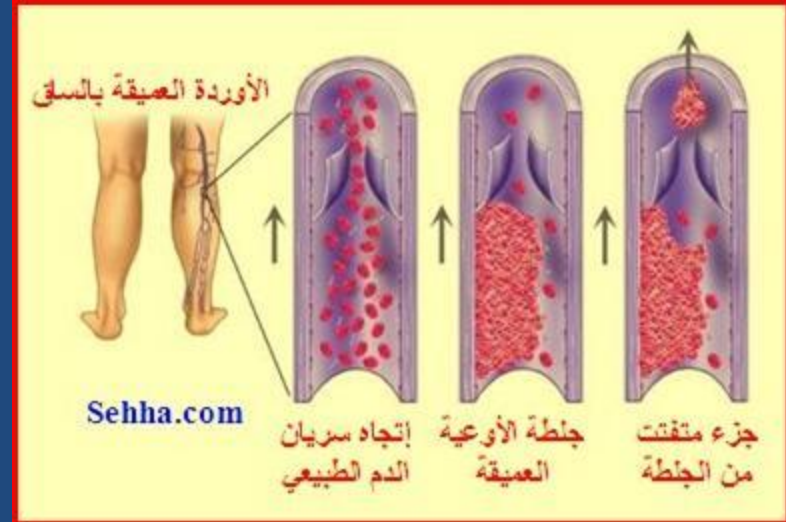
- *Predisposing factors:*
 - *Congestive heart failure*
 - *Neoplasia*
 - *Pregnancy*
 - *Obesity*
 - *Postoperative state*
 - *Prolonged bed rest*
 - *Genetic hypercoagulability syndromes*

DVT

- *Trousseau sign:*
 - In patients with cancer, particularly adenocarcinomas, hypercoagulability occurs as a paraneoplastic syndrome related to tumor elaboration of procoagulant factors
 - In this setting, venous thromboses classically appear in one site, disappear, and then reoccur in other veins, so-called *migratory thrombophlebitis* (*Trousseau sign*)

DVT

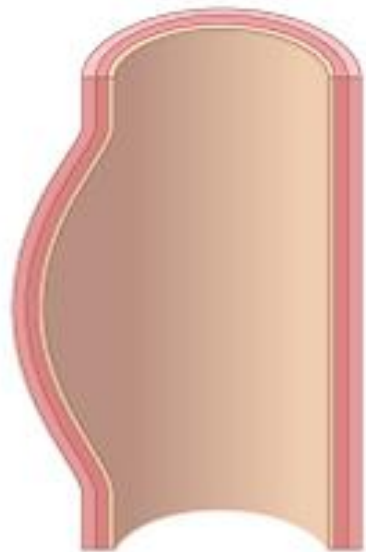
- 50% clinically silent.
- Local manifestations:
 - Distal edema
 - Cyanosis
 - Superficial vein dilation
 - heat, tenderness, redness, swelling and pain
 - Sometimes, the first manifestation of thrombophlebitis is a pulmonary embolus
 - Depending on the size and number of emboli, the outcome can range from no symptoms at all to death



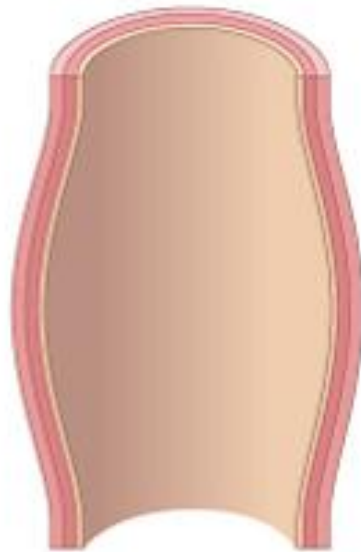
ANEURYSMS

*localized abnormal dilation of a blood vessel or
the heart*

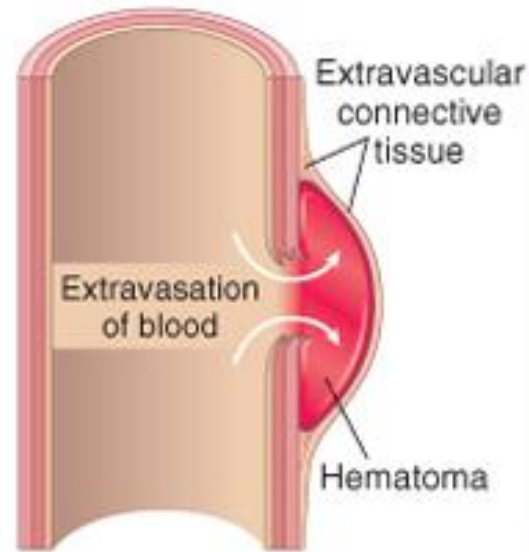
ANEURYSMS



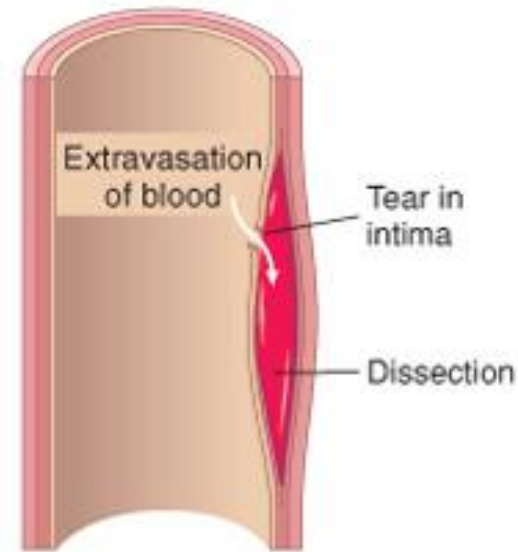
B. True aneurysm (saccular)



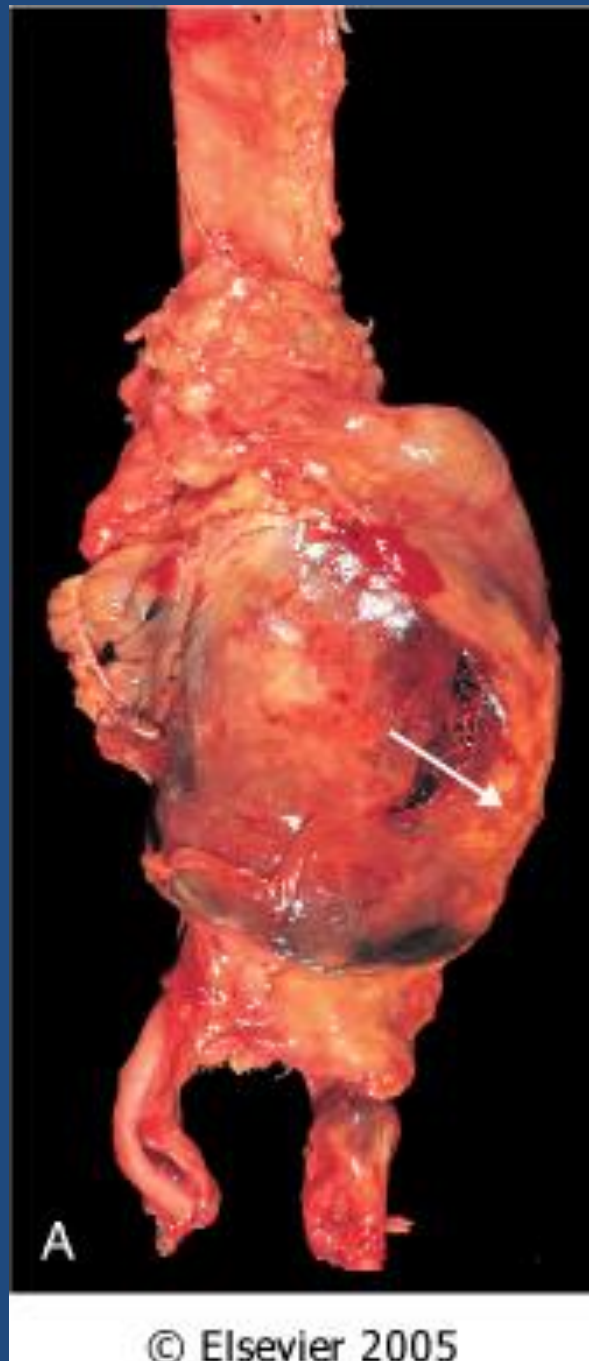
C. True aneurysm (fusiform)



D. False aneurysm



E. Dissection



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ANEURYSMS

- *The two most important disorders that predispose to aortic aneurysms are:*
 - *atherosclerosis (abdominal aorta)*
 - *hypertension (ascending aorta)*
- *Other causes of aneurysms:*
 - Trauma
 - Congenital (*berry* aneurysms in the circle of Willis)
 - Infections (mycotic aneurysms, syphilis)
 - Vasculitides

ANEURYSMS

- *Mycotic aneurysm*
 - may originate either from:
 - » embolization and arrest of a septic embolus at some point within a vessel, usually as a complication of infective endocarditis
 - » an extension of an adjacent suppurative process
 - » circulating organisms directly infecting the arterial wall

ANEURYSMS

- Complications
 - Rupture
 - Hemorrhage
 - Occlusion of proximal vessels
 - Embolism

ANEURYSMS

- *abdominal aortic aneurysm (AAA):*
 - More in men and rarely develops < 50 years
 - *Abdominal aorta is the main location* but the common iliac arteries, the arch and descending parts of the thoracic aorta can be involved
 - Below the renal arteries and above the bifurcation of the aorta

ANEURYSMS

- *abdominal aortic aneurysm (AAA):*
 - Risk of rupture:
 - 11% per year for aneurysms between 5.0 and 6 cm in diameter
 - Operative mortality for unruptured aneurysms is approximately 5%, whereas emergency surgery after rupture carries a mortality rate of more than 50%

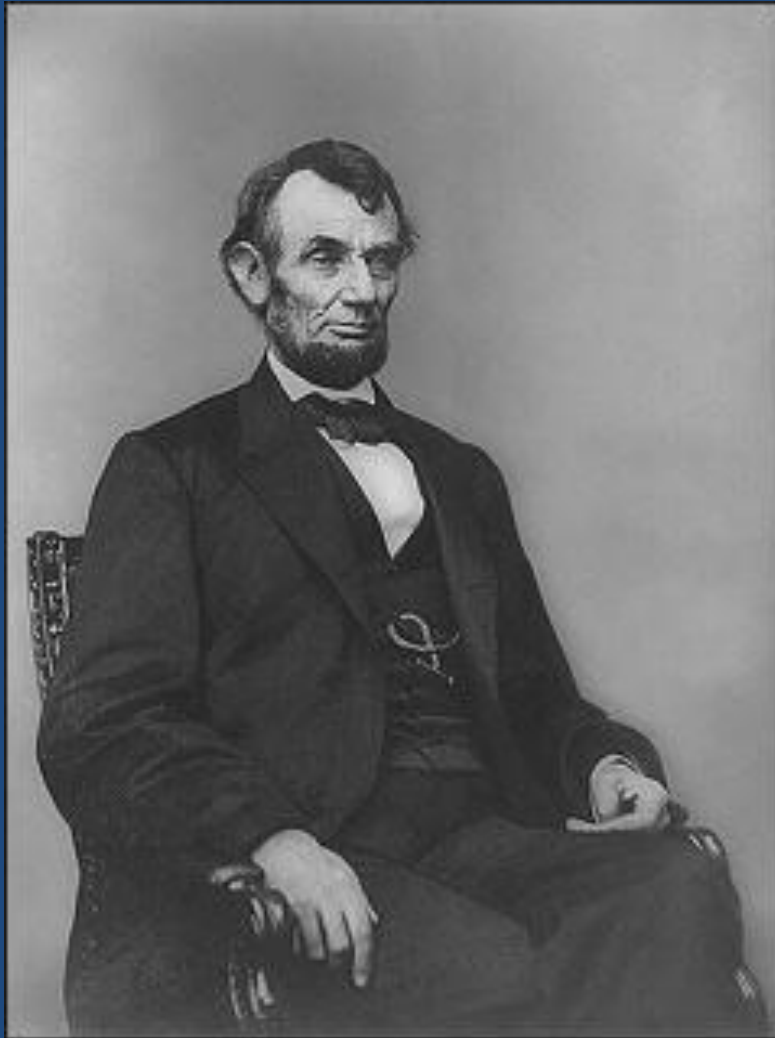
ANEURYSMS

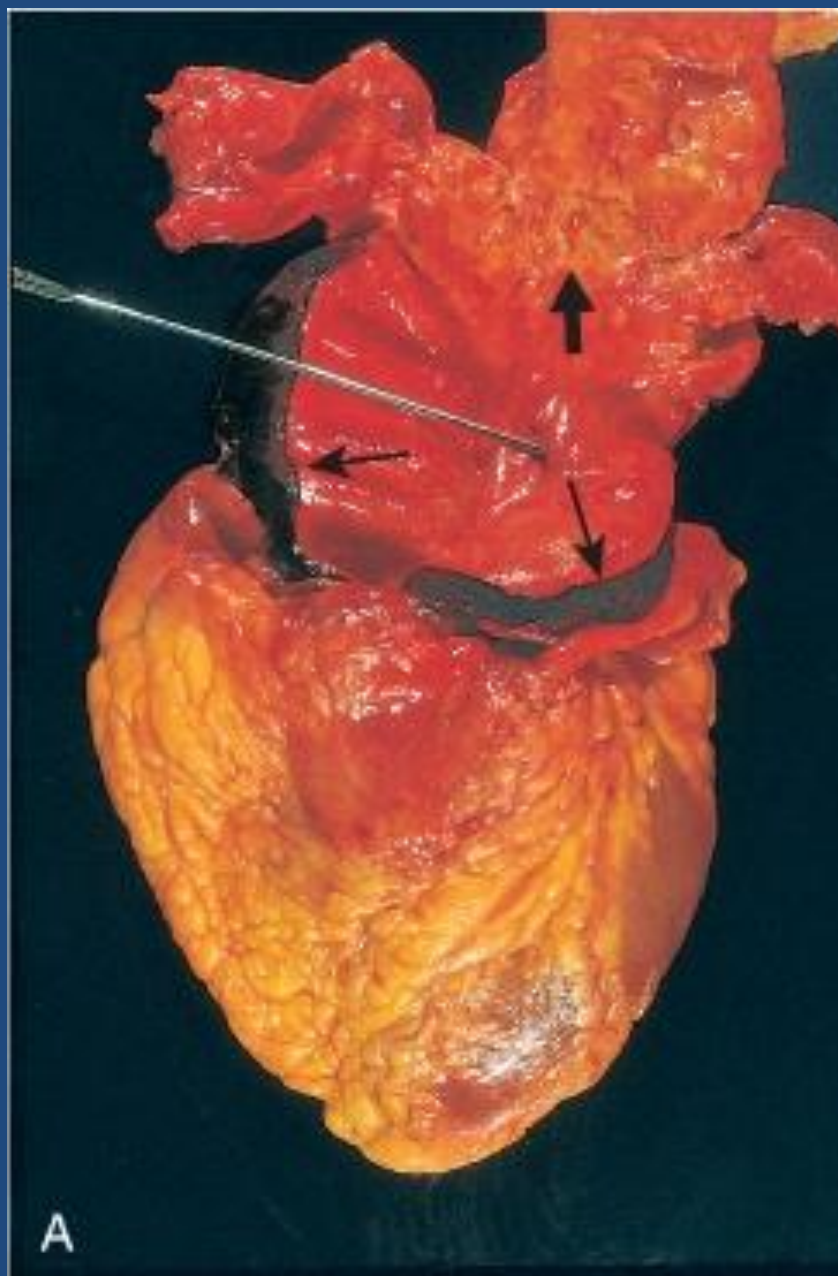
- ***SYPHILITIC (LUETIC) ANEURYSMS:***
 - The *obliterative endarteritis* of the the vasa vasorum of the thoracic aorta can lead to aneurysmal dilation that can include the aortic annulus
 - Ascending aorta and arch
 - May cause aortic valve ring dilation -> valvular insufficiency -> ventricular wall hypertrophy, sometimes to 1000 gm "cor bovinum" (cow's heart)

- *SYPHILITIC (LUETIC) ANEURYSMS*



Dissecting hematoma









A

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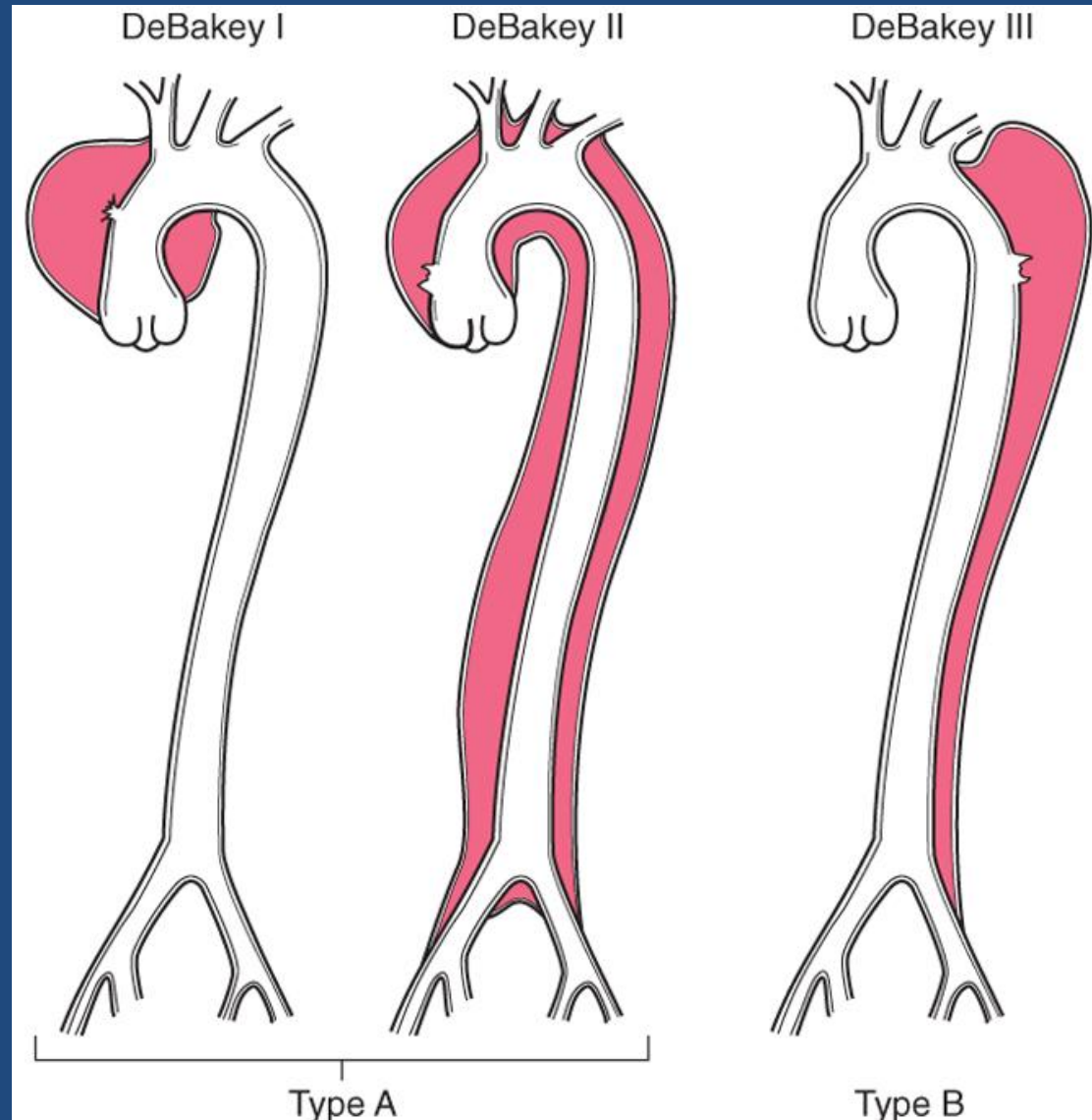


Dissecting hematoma

- Causes
 - **Hypertension**
 - **Connective tissue defects**
 - Cannulation or other trauma
 - Preganancy

Types

Type A is associated
with serious
complications



Dissecting hematoma

Clinical picture

- *sudden onset of excruciating pain:*
 - usually beginning in the anterior chest
 - radiating to the back between the scapulae
 - moving downward as the dissection progresses



AorticDissection.wmv

Dissecting hematoma

Clinical picture

- *cardiac tamponade*
- *aortic insufficiency*
- *myocardial infarction*
- *extension of the dissection into the great arteries* of the neck or into the coronary, renal, mesenteric, or iliac arteries
 - causing critical vascular obstruction; compression of spinal arteries may cause transverse myelitis

