



Cardiovascular System - Pathology Practical 2023-24

3rd year medical students

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It has been modified by

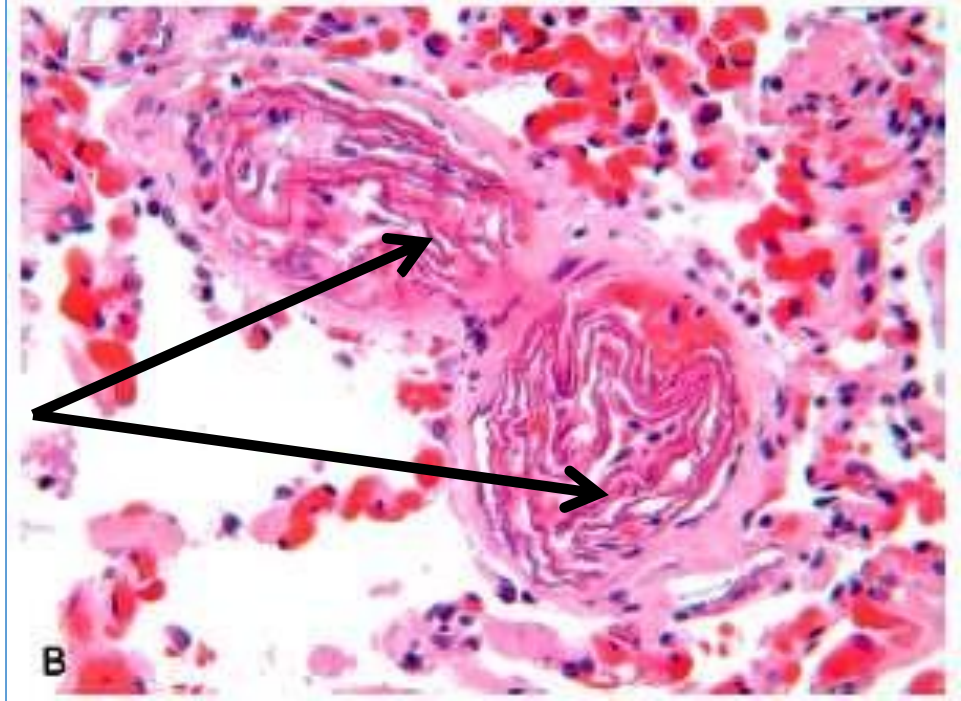
Reenas Al - Khresat

A 26 years old pregnant woman had a complicated Caesarian section. 12 hours after delivery of her baby, she started to develop shortness of breath, decreased consciousness, and seizures. She died a few hours later. Autopsy was performed. This is a microscopic section from her lung. What is the most likely cause of her death?

Amniotic fluid embolus: keratin and fetal squamous epithelial cells in pulmonary arterioles

- High Mortality Rate
- Very rare complication of labor
- Occurs as a result of infusion of amniotic fluid into maternal circulation via tears in placental membranes and rupture of uterine veins.

Microscopic Findings upon autopsy:
fetal squamous cells, lanugo hair, fat, mucin
microcirculation



Additional notes from SLIDES ONLY !!

Lymphedema

Types? Give examples on causes :

- 1-Primary: congenital
(example is cystic hygroma)
- 2- secondary: neoplasms filariasis;
fibrosis; post treatment effect

- 1- Primary (congenital) lymphedema → lymphatic agenesis or hypoplasia (underdeveloped).
- 2- Secondary (obstructive) lymphedema → blockage of a previously normal lymphatic

Examples (on causes that might lead to secondary lymphedema include) :

- Malignant tumors
- Surgical procedures removing lymph nodes (e.x: the surgical procedure that is used to treat breast cancer which includes removal of the tumor, breast tissue and the ipsilateral axillary lymph node)
- Post-irradiation
- Fibrosis at the site of the affected lymphatic
- Filariasis (parasitic infection that leads to inflammation)
- Postinflammatory thrombosis and scarring



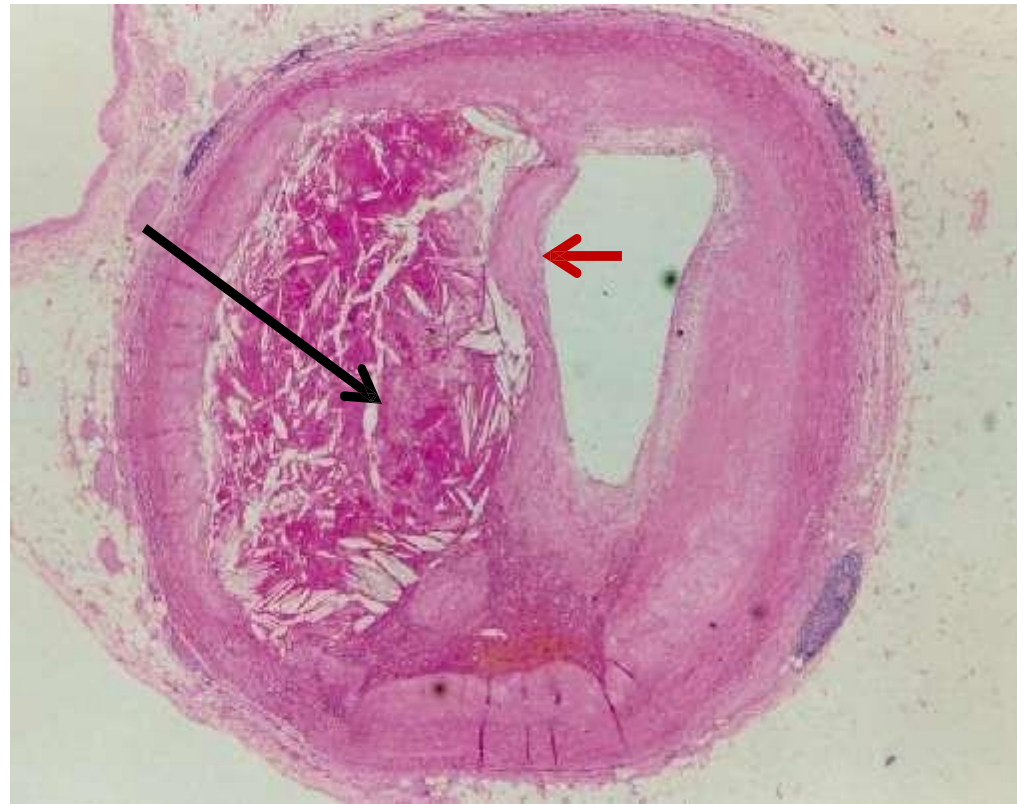
Additional notes from SLIDES ONLY !!!

Atherosclerosis- atheroma

Red arrow?
Fibrous cap

black arrow? lipid
or necrotic center

What do the whitish
needle- like structures
represent?
Cholesterol crystals



- The white area is the remaining part of the lumen which is very small
- Atheromatous plaque = raised lesion with a core of lipid (cholesterol and cholesterol esters) covered by a firm, white fibrous cap

Additional notes from SLIDES ONLY !!!

Infarction

lung (A), and spleen (B)

What type of infarct do you see in

A? **red**

B? **white**



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RED INFARCTS (congested with blood): ●

- occur in any of the following scenarios:
 - (1) venous occlusions (e.g. ovarian torsion)
 - (2) loose tissues (e.g. lung)
 - (3) tissues with dual circulations (e.g. lung and small intestine)
 - (4) previously congested tissues: develops because of sluggish venous outflow
 - (5) when flow is re-established to a site of previous arterial occlusion and necrosis

WHITE INFARCTS: ●

(small amount of blood or no blood at all)

- Occur with: Arterial occlusions in Solid organs (such as heart, spleen, and kidney).

Additional notes from SLIDES ONLY !!

Aortic aneurysm

What part of aorta is involved ?

abdominal

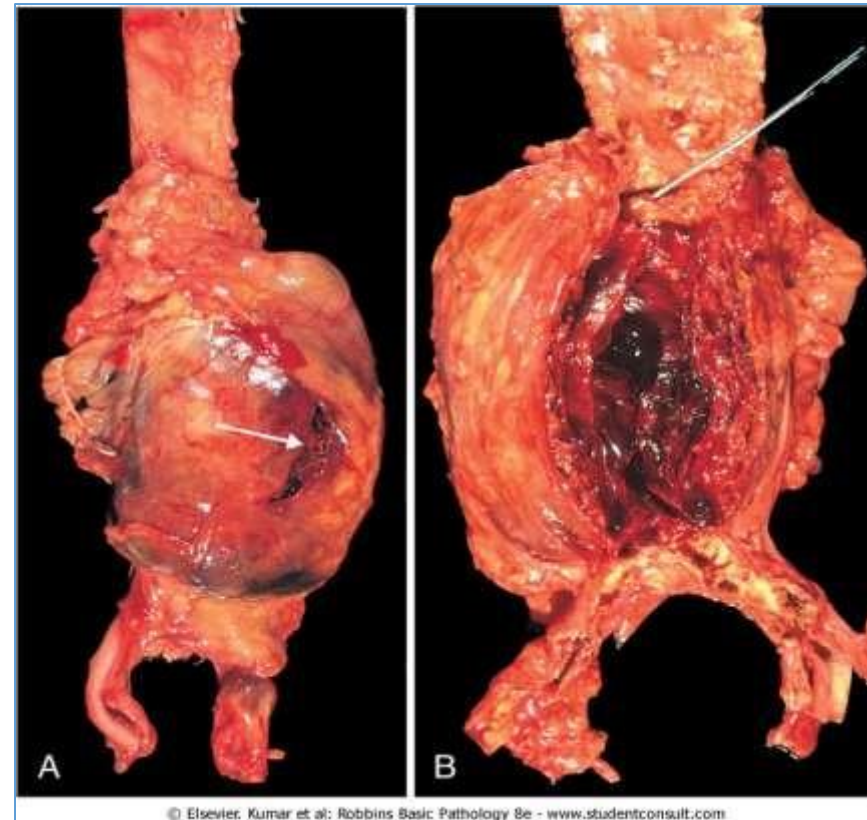
Name complications that you recognize in :

Picture A, white arrow? **rupture**

picture B? **thrombosis**

- 1- m/c in men
- 2- rarely < age 50
- 3- Atherosclerosis is a major cause of AAA

Usually below renal arteries and above bifurcation of aorta can be saccular or fusiform



Additional notes from SLIDES ONLY !!

Aortic dissection

A microscopic section from the aorta:

The special histochemical stain in this microscopic section of aorta shows elastic fibers in black color.

What is the most likely diagnosis?

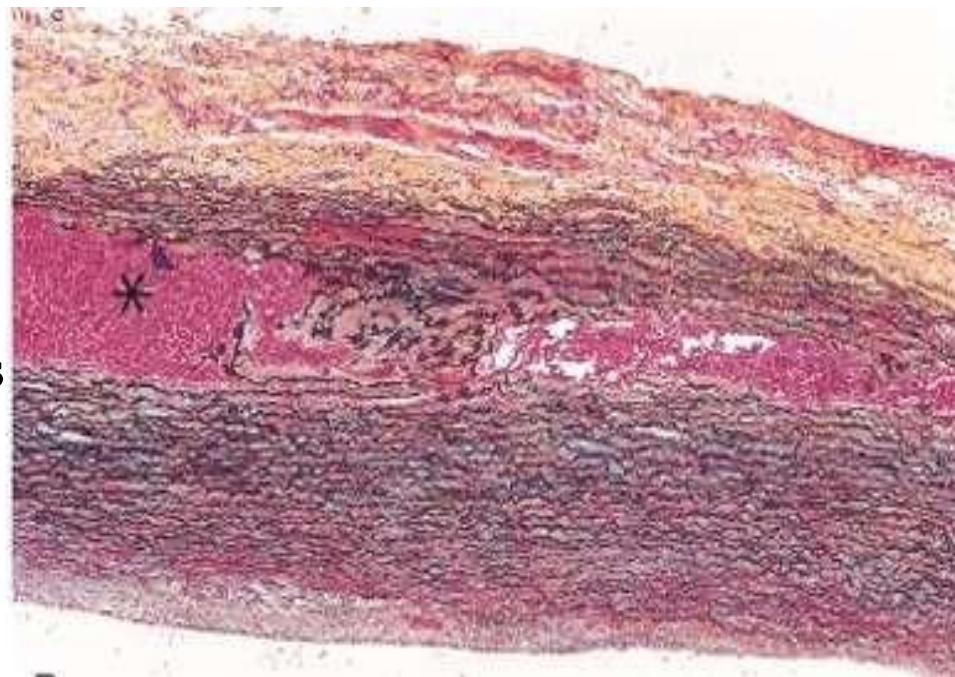
Aortic dissection

What does the star represents?

Blood collecting within the media

Name a major precipitating factor ?

hypertension



Complications are :

- massive hemorrhage
- Cardiac tamponade (hemorrhage into the pericardial sac)

Additional notes from SLIDES ONLY !!

Pathogenesis

1- Hypertension is the major risk factor

- pressure-related mechanical injury and/or ischemic injury to the arterial wall

2- inherited or acquired connective tissue disorders causing abnormal vascular ECM

- (e.g., Marfan syndrome, Ehlers-Danlos syndrome, vitamin C deficiency, copper metabolic defects)

Arteriolosclerosis: types

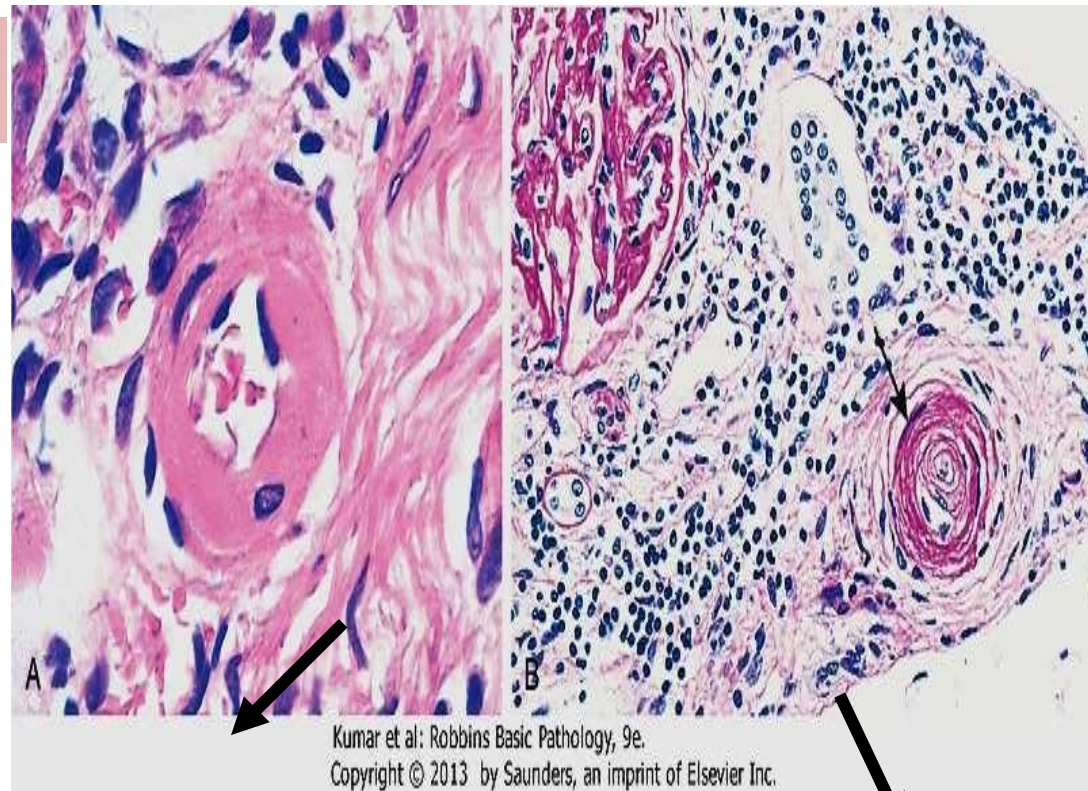
arrow in A? **hyaline arteriolosclerosis**

causes? **HTN, DM, Aging**

arrow in B?

**(onion skin)
Hyperplastic arteriolosclerosis**

causes? **Malignant HTN**



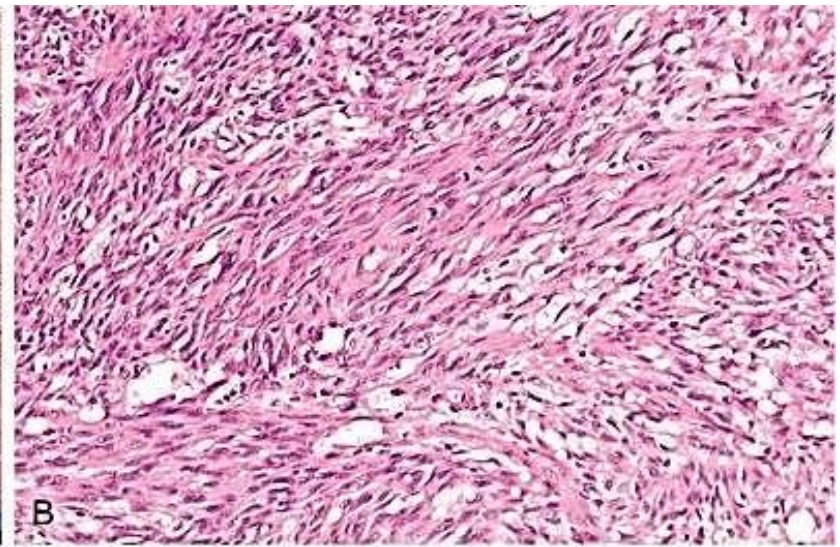
A lady is bringing her 1- year old baby girl to a paediatrics clinic. She is worried about a reddish lesion that is present posterior to the baby's ear. The mother describes the lesion as a blood colored plaque, present since birth, and its colour is fading as the baby grows up. What is the most likely diagnosis? **Strawberry hemangioma of newborn**



strawberry hemangiomas of newborn (juvenile hemangioma):

- m/c head & neck
- Usually regress with time

Additional notes from SLIDES ONLY !!!



Kumar et al: Robbins Basic Pathology, 9e.
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A 38 years old (HIV +) man is going to a dermatologist complaining of multiple red-purple skin plaques and nodules on his feet; he said that the skin lesions increased in size and number and spread proximally overtime. Below are pictures of the lesions (A) and microscopic features (B). What is the most likely diagnosis?

Kaposi sarcoma

Kaposi Sarcoma (KS)

- Avascular neoplasm caused by human herpesvirus- 8 = HHV-8.
- AIDS-associated (epidemic) KS is an AIDS-defining illness (used as a criterion for diagnosis of AIDS).
- The most common HIV-related malignancy .
- Multiple red-purple skin plaques or nodules, usually on the distal lower extremities; progressively increase in size and number and spread proximally.