



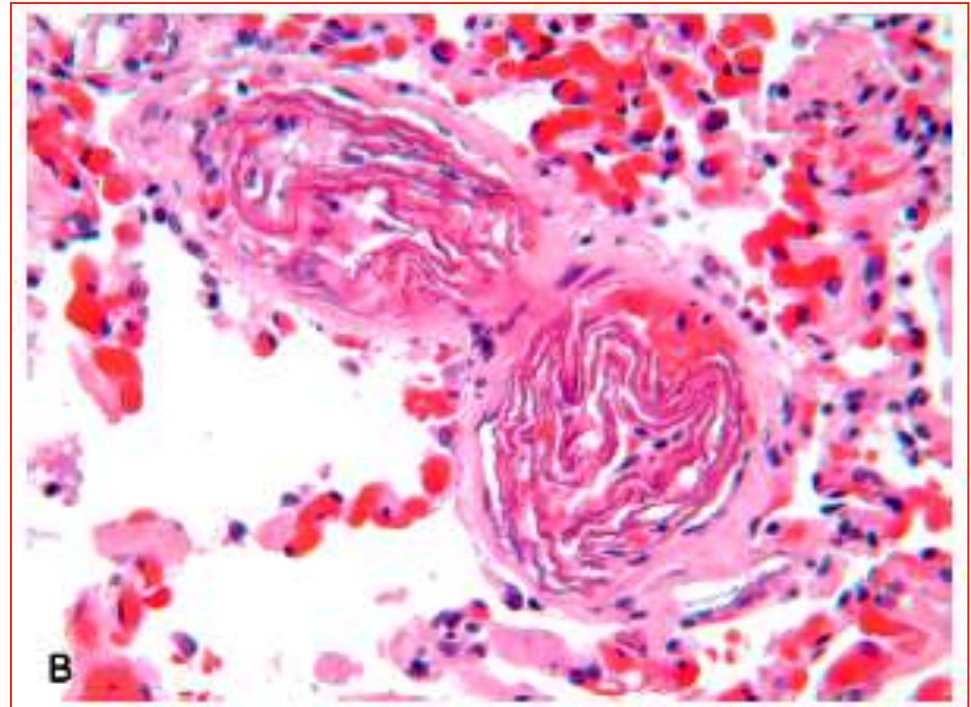
Cardiovascular System - Pathology Lab

3rd year medical students

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A 26 years old pregnant woman had a complicated C/S. 12 hours post her C/S, she started to develop shortness of breath, decreased consciousness, And seizures before she died. This is a microscopic section from her lung.

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



Lymphedema

- Name major types. 1°, 2°
- Give examples on causes



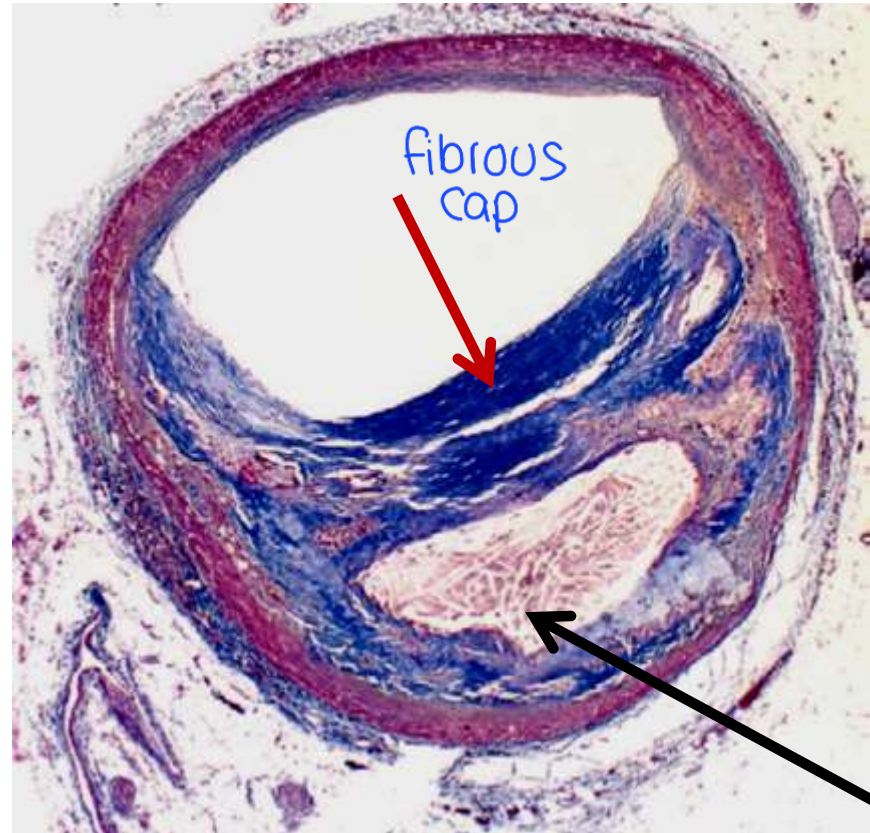
1° → agenesis, hypoplasia

2° → blockage (tumor, lymphadenectomy, radio, fibrosis, inflammation, Scarring, filariasis (anematode parasite infxn → Scarring))

most important characteristic:
→ Cholesterol Crystals

Atherosclerosis

- Name parts of this lesion (**red** and **black** arrows)
- Describe the composition of each part



Necrotic Center

- FIBROUS CAP
(smooth muscle cells, macrophages, foam cells, lymphocytes, collagen, elastin, proteoglycans, neovascularization)
- NECROTIC CENTER
(cell debris, cholesterol crystals, foam cells, calcium)

Infarction

Usually wedge shape which gets more defined with time

- lung (A), and spleen (B)

1- what type of infarct do you see in A & B?

2- microscopic features you expect to see in A & B?

RED INFARCTS:

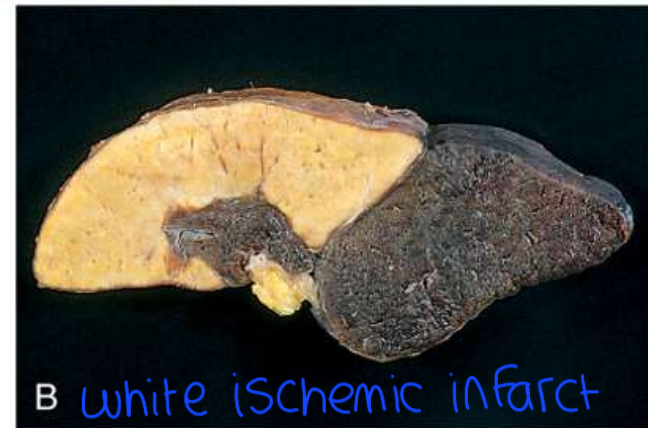
○ occur in any of the following scenarios:

- (1) **venous occlusions** (e.g. ovarian torsion)
- (2) **loose tissues** (e.g. lung) that allow blood to collect in the infarcted zone
- (3) **tissues with dual circulations** (e.g. lung and small intestine) liver (one vessel is occluded & the other gets blood to infarcted area)
- (4) previously congested tissues because of **sluggish venous outflow**
- (5) when flow is **re-established to a site of previous arterial occlusion and necrosis**

WHITE INFARCTS

○ occur with:

- **arterial occlusions** in
- **solid organs** (such as heart, spleen, and kidney).



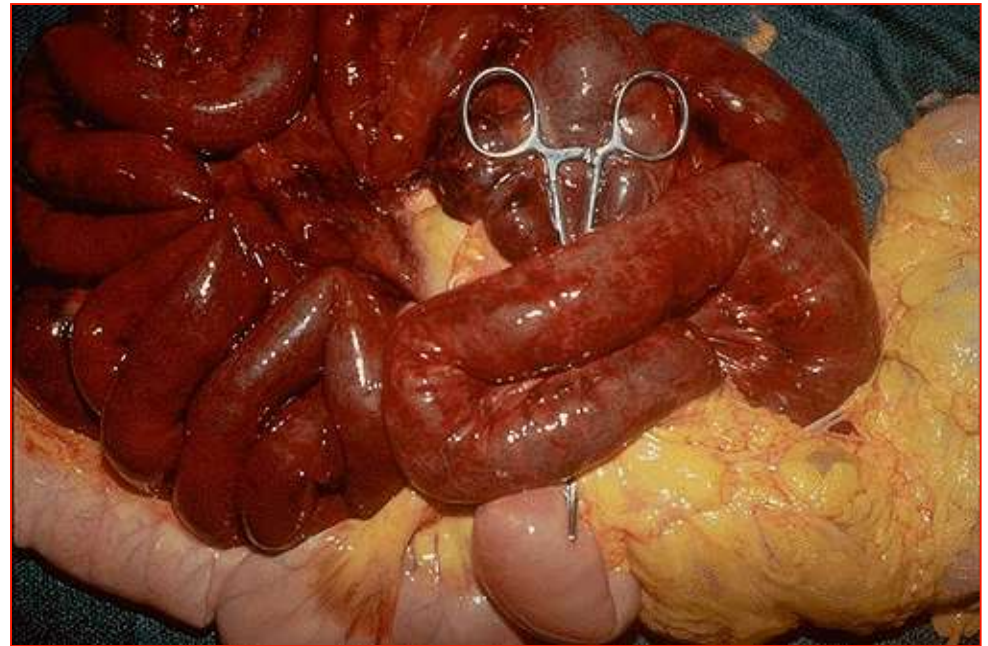
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wedge shaped fibrotic scar

A 74 years old man was brought to ER with severe abdominal pain and rectal bleeding. Laparotomy was performed. This is a picture of His small intestines.

Infarction

- **A case of sudden mesenteric artery occlusion.**
- **What type of infarcts is it? Why?** red infarct (Small intestine has dual circulation)



Aortic aneurysm

- What part of the aorta is involved ?

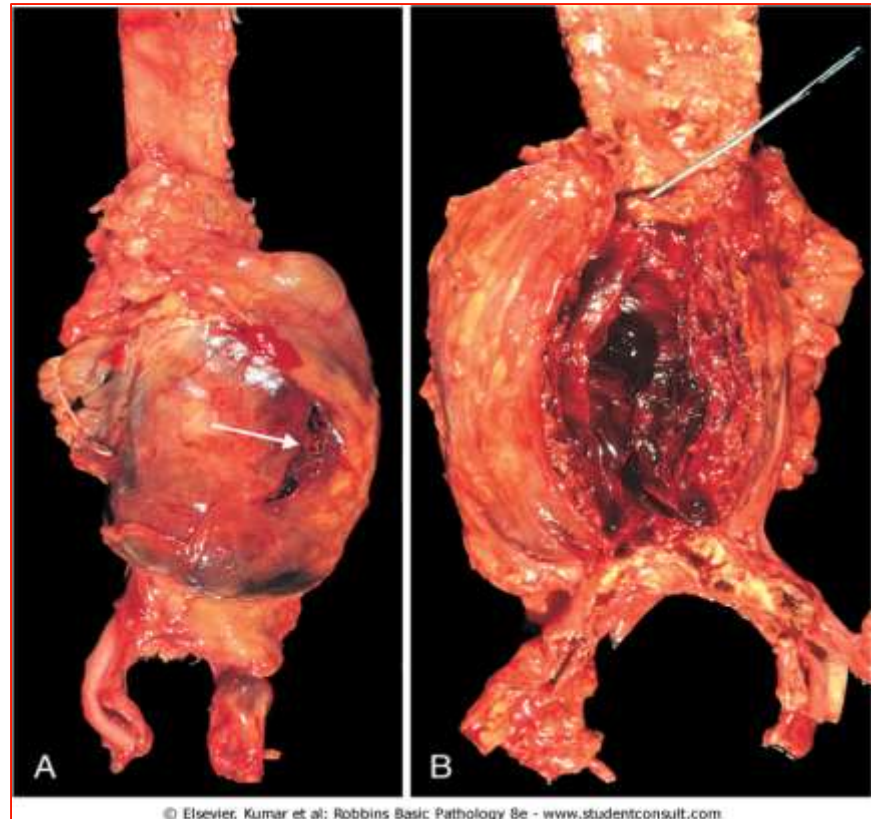
Abdominal aorta

- Picture A, white arrow?

rupture

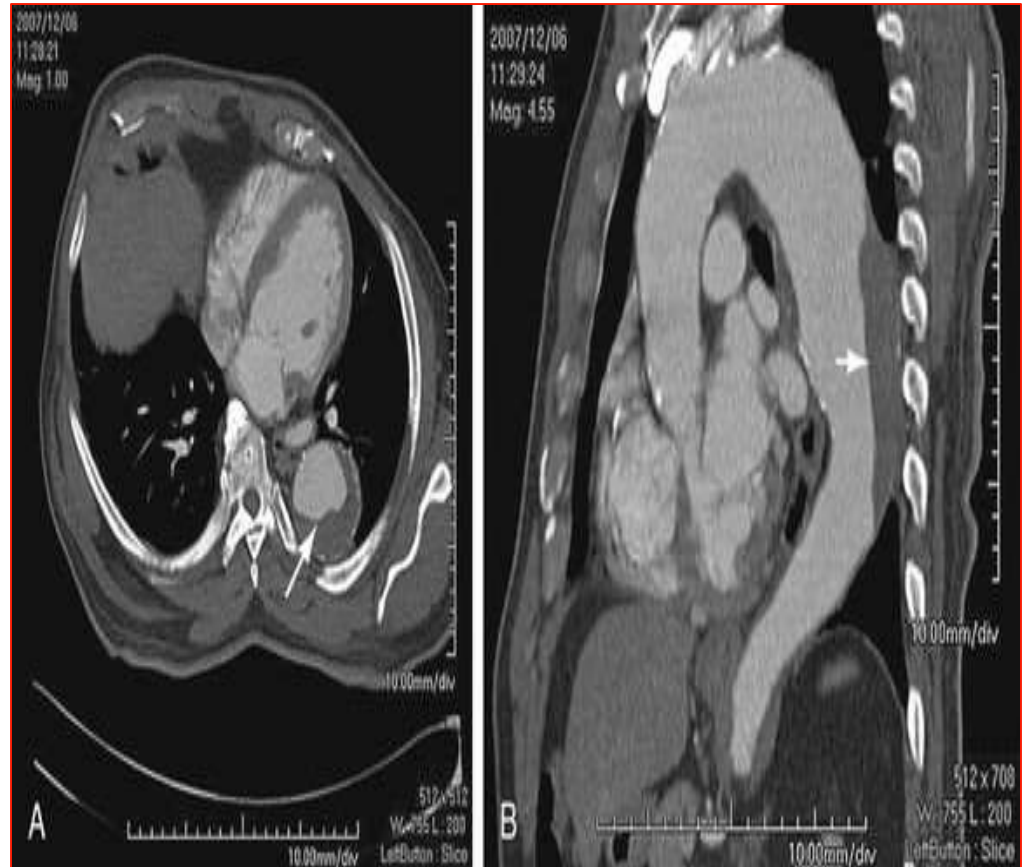
- picture B?

mural thrombosis



Aortic aneurysm

- What part of the aorta is involved?
thoracic aorta
- white arrows represents?
mural thrombosis



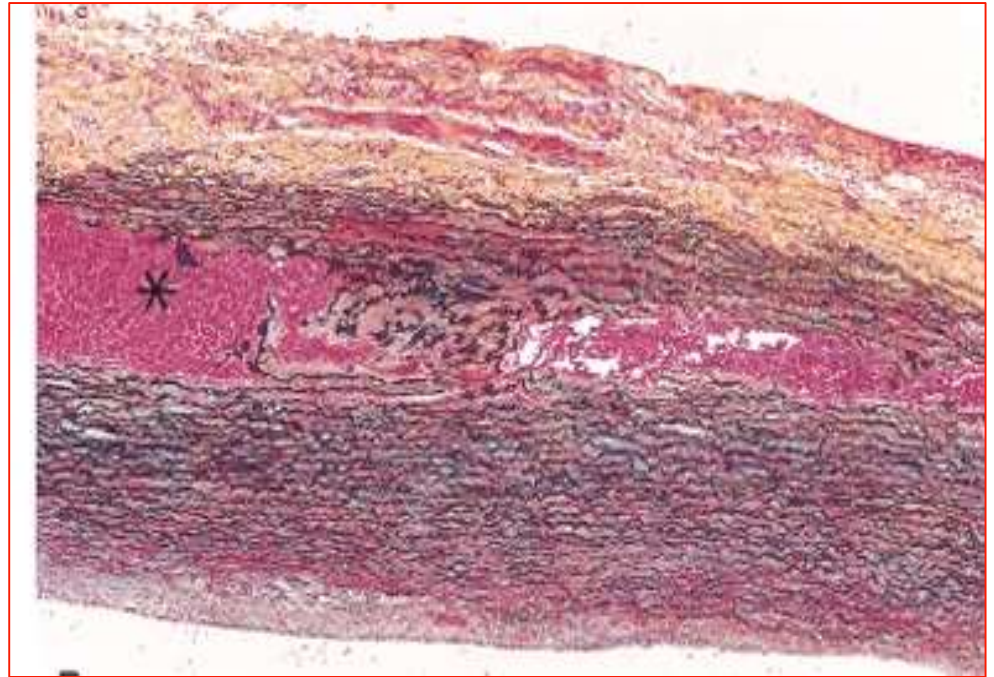
Aortic dissection

- The special histochemical stain in this microscopic section of aorta shows elastic fibers in black color. What does the black star represents?

blood in tunica media

- Name a major precipitating factor *Htn*

- other causes?

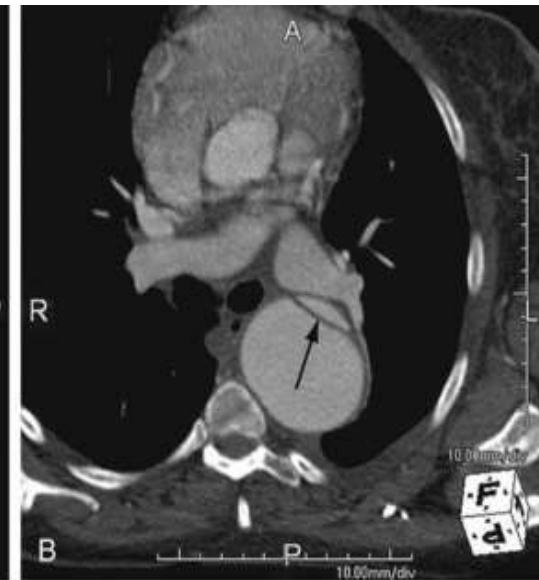


→ inherited or acquired CT disorders → abnormal vascular ECM (Marfan Syndrome, Ehlers Danlos Syndrome, Vit C deficiency, Cu⁺⁺ metabolic defects)

Aortic dissection

-black arrows
represents?

type B aortic dissection
(only descending aorta),
no involvement of
ascending & arch

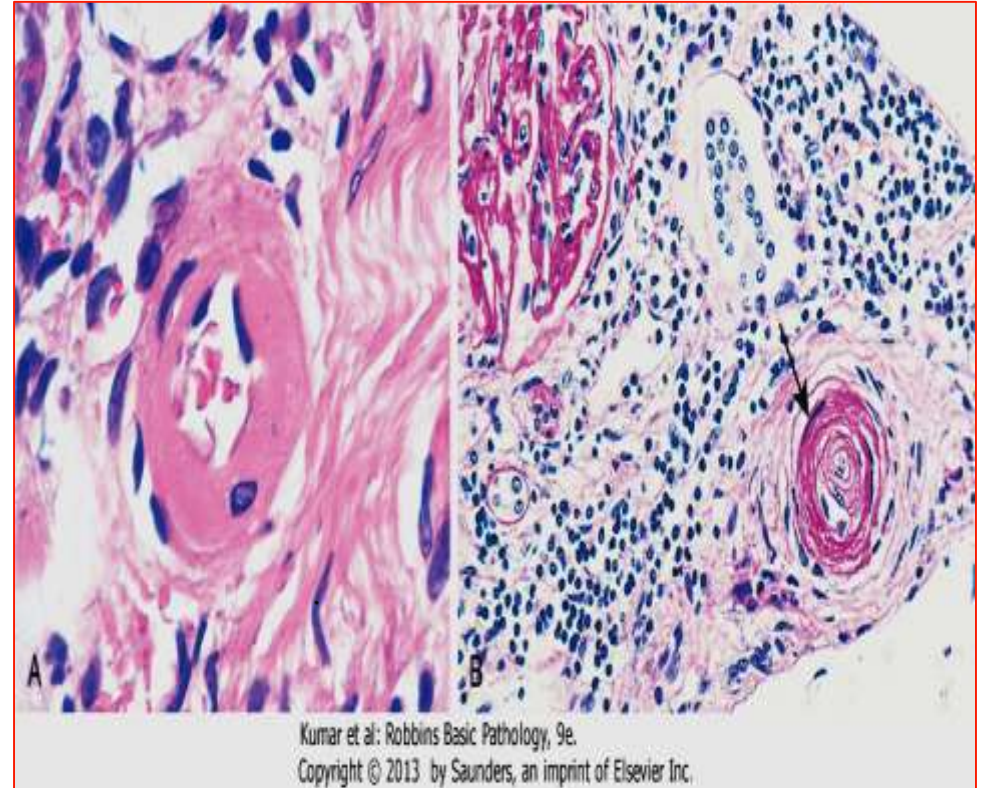


hyaline
arteriosclerosis
(benign Htn) ←

hyperplastic
arteriosclerosis
(malignant Htn) →

Arteriosclerosis

- types? A, B
- causes?



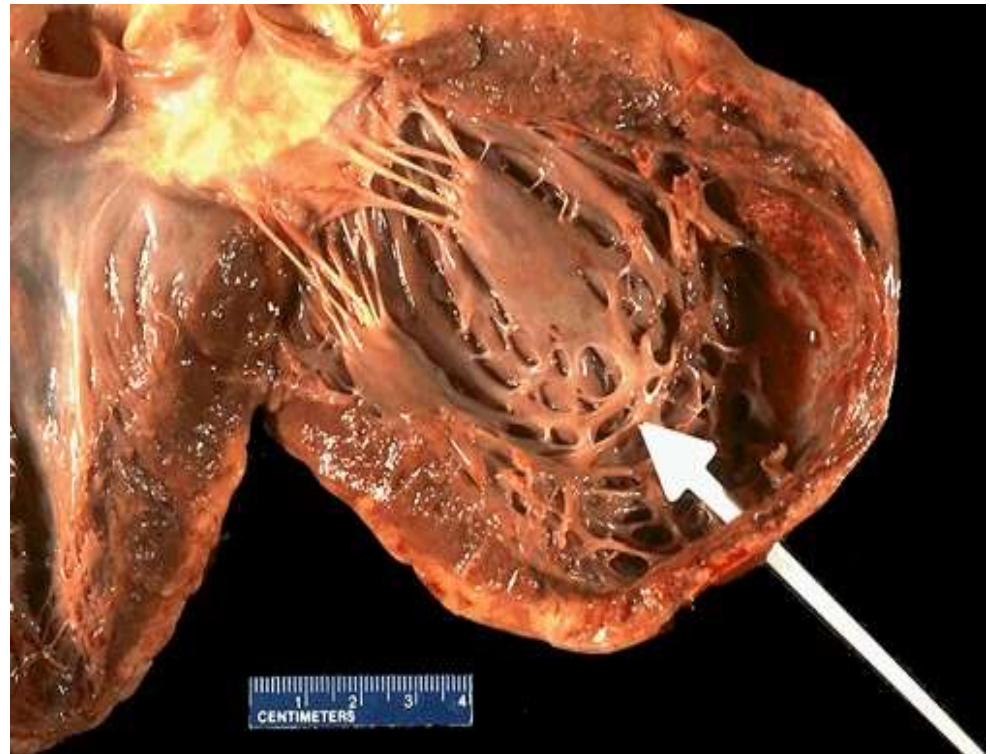
- ① hyaline arteriosclerosis → with benign Htn
 - complication: nephrosclerosis (glomerular scarring)
 - other causes: Age, DM
- ② hyperplastic arteriosclerosis → with malignant Htn
 - basement memb duplication → onion skin
 - fibrinoid vessel wall necrosis (necrotizing arteriolitis)

Complications of MI

-what complication is seen in this picture (white arrow)?

transmural wall defect

-Mention the consequences that may follow this.

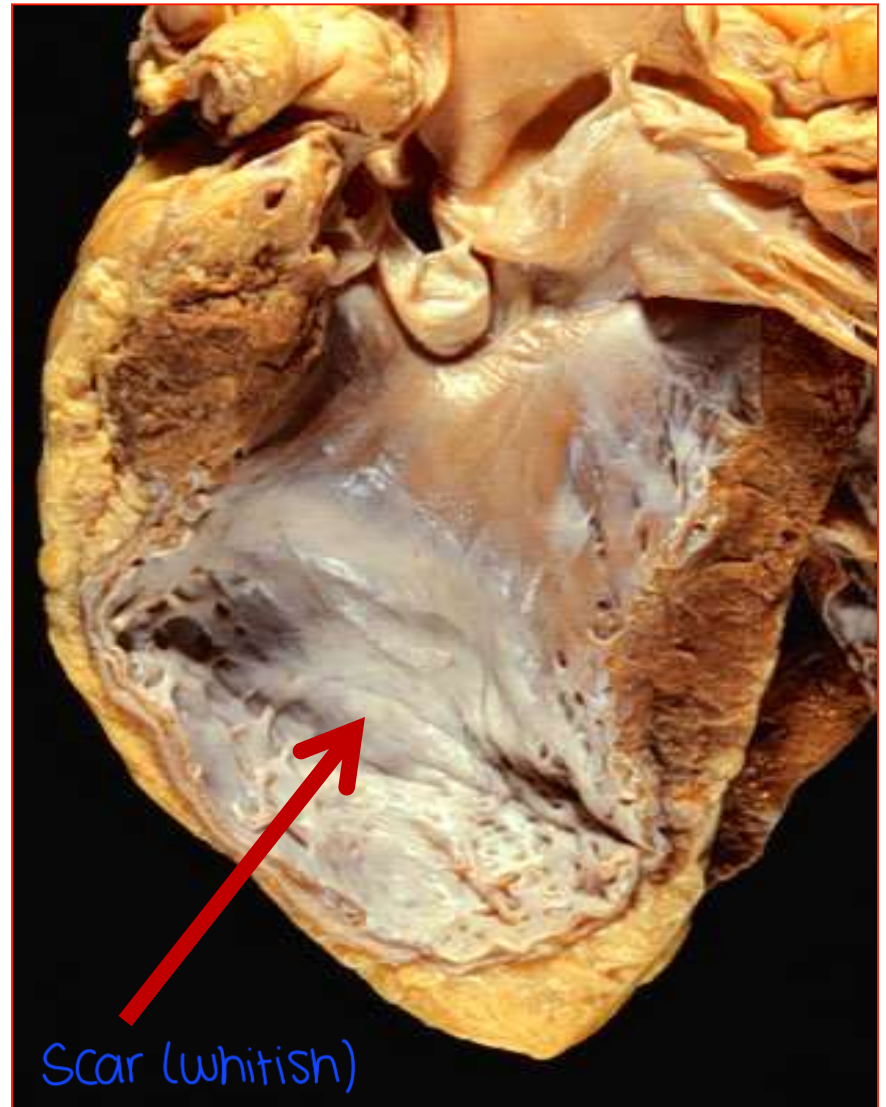


rupture of free wall of ventricle → exit of blood to pericardium
→ Cardiac tamponade → Can be fatal

Complications of MI

- **A recent or old MI?** (red arrow) Old (>6 weeks)
- **What post-MI complication is seen?**
Ventricular aneurysm
- **potential clinical consequences?**

→ mural thrombus, arrhythmia, heart failure



Scar (whitish)

caused by healing of transmurular anteroseptal infarction

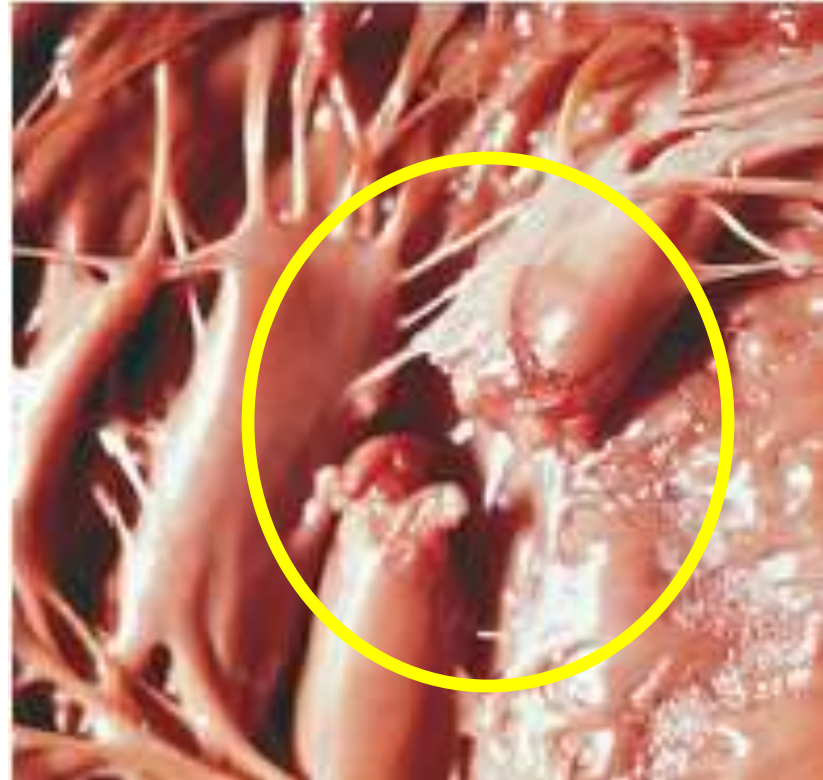
Complications of MI

- what complication of acute MI do you see?

papillary m rupture

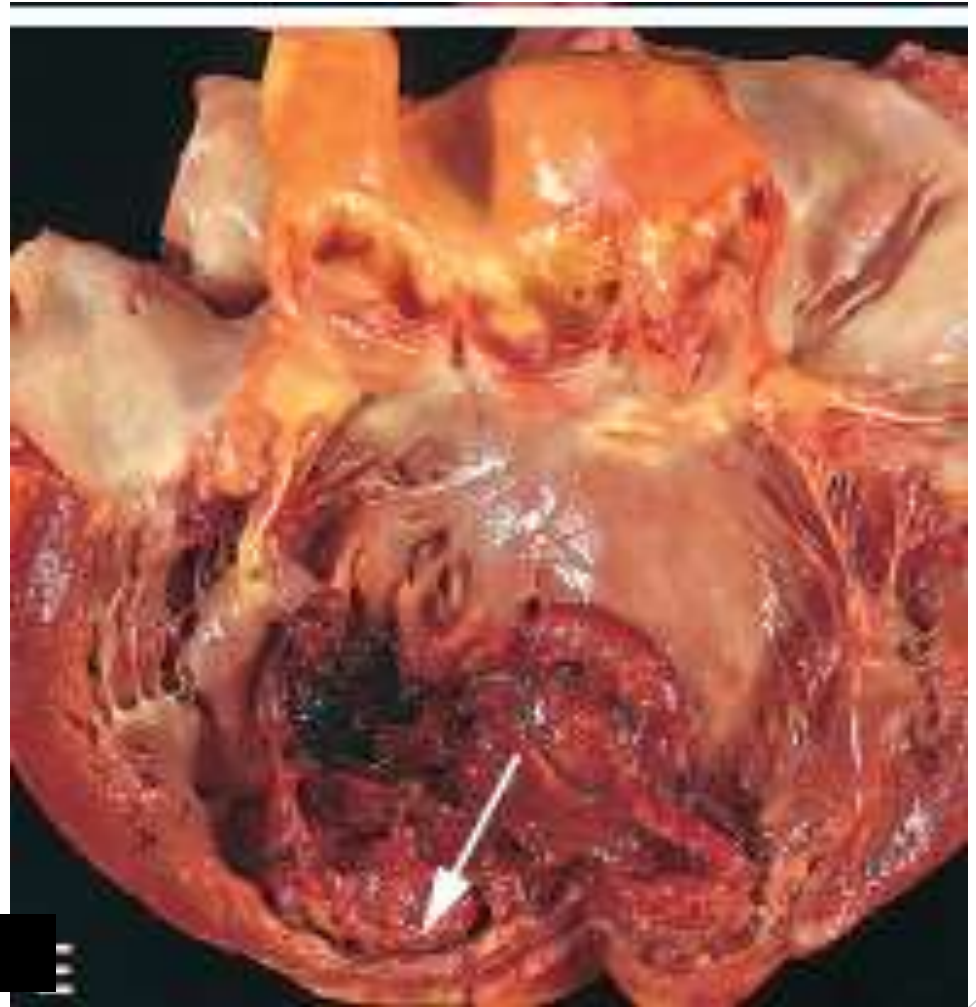
ex: mitral valve

- potential adverse effects ? regurgitation



Complications of MI

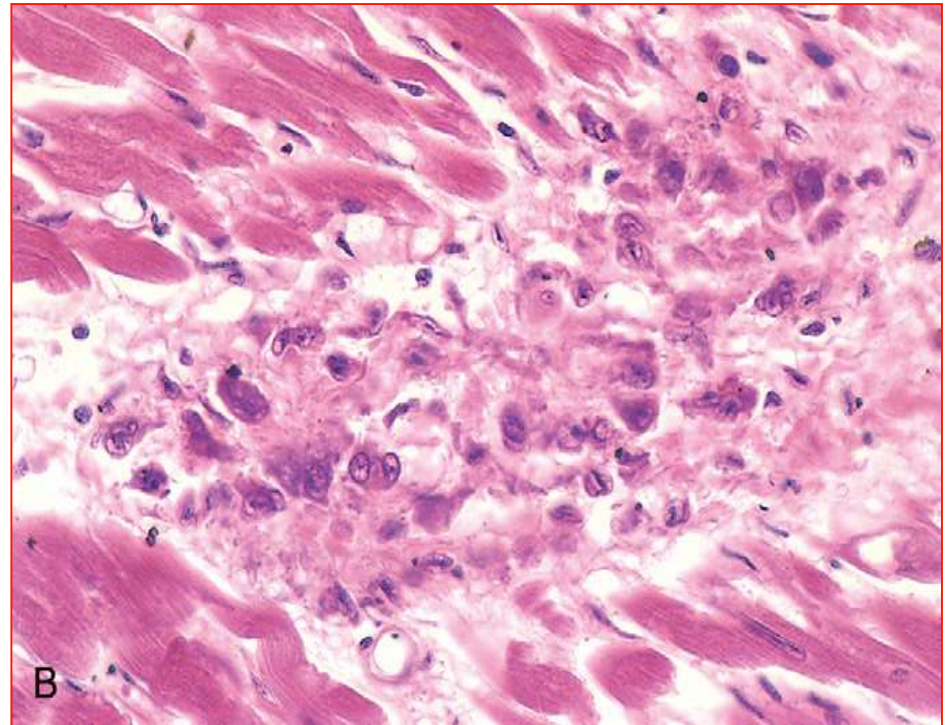
-what significant complication of acute MI do you see?
thrombosis



→ 80% Children / 3-4 months post GAS infxn

Acute rheumatic heart disease

- **Aschoff bodies** are *pathognomonic* for rheumatic fever
- **Composition?**
Collections of T-lymphocytes, plasma cells, and macrophages



- **JONES** (joint arthritis, Carditis, nodules SQ, erythema marginatum, Sydenham's chorea in nervous system)
- Carditis morph: vegetations / inflammatory lesions