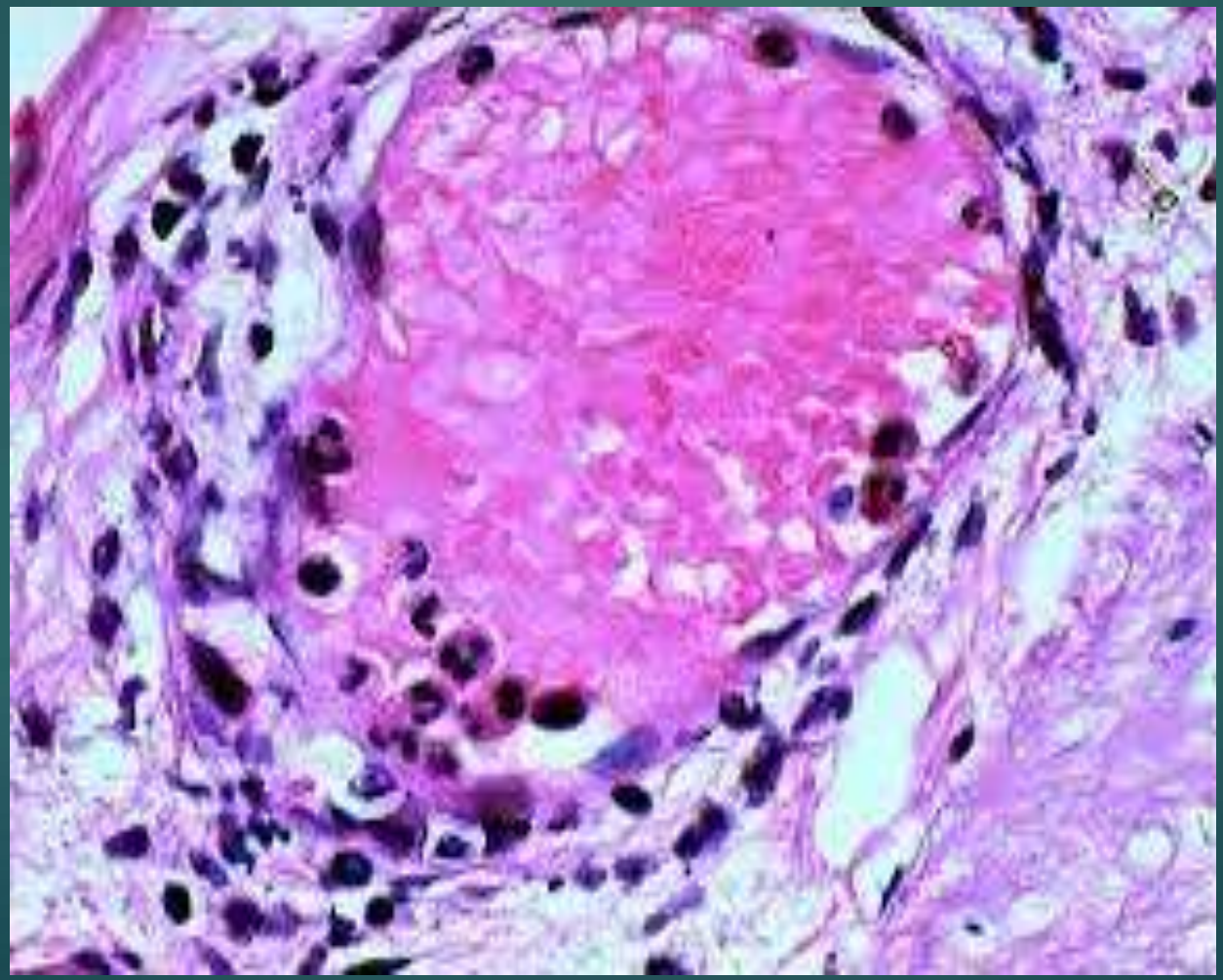
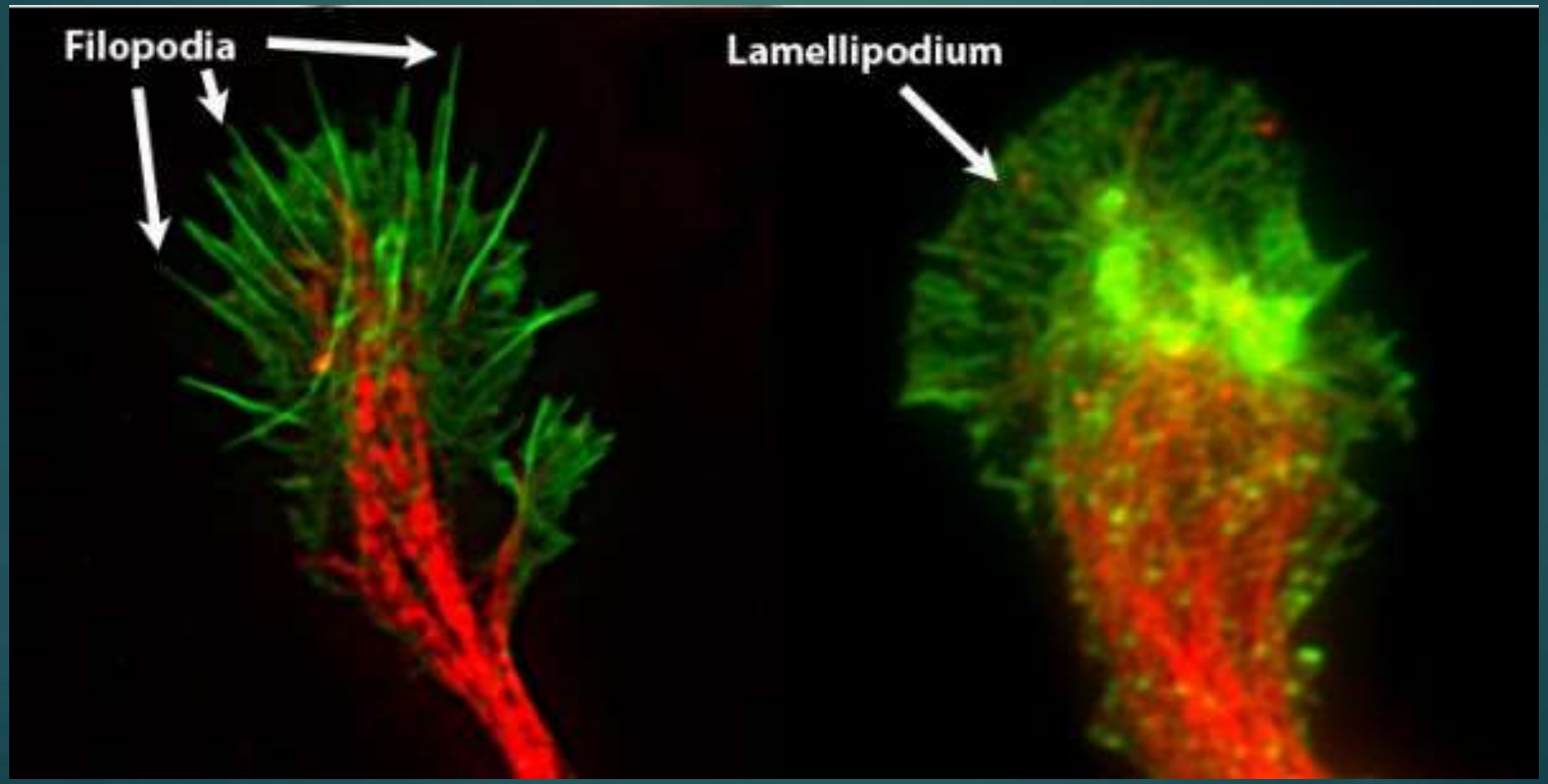
Pathology lab

margination

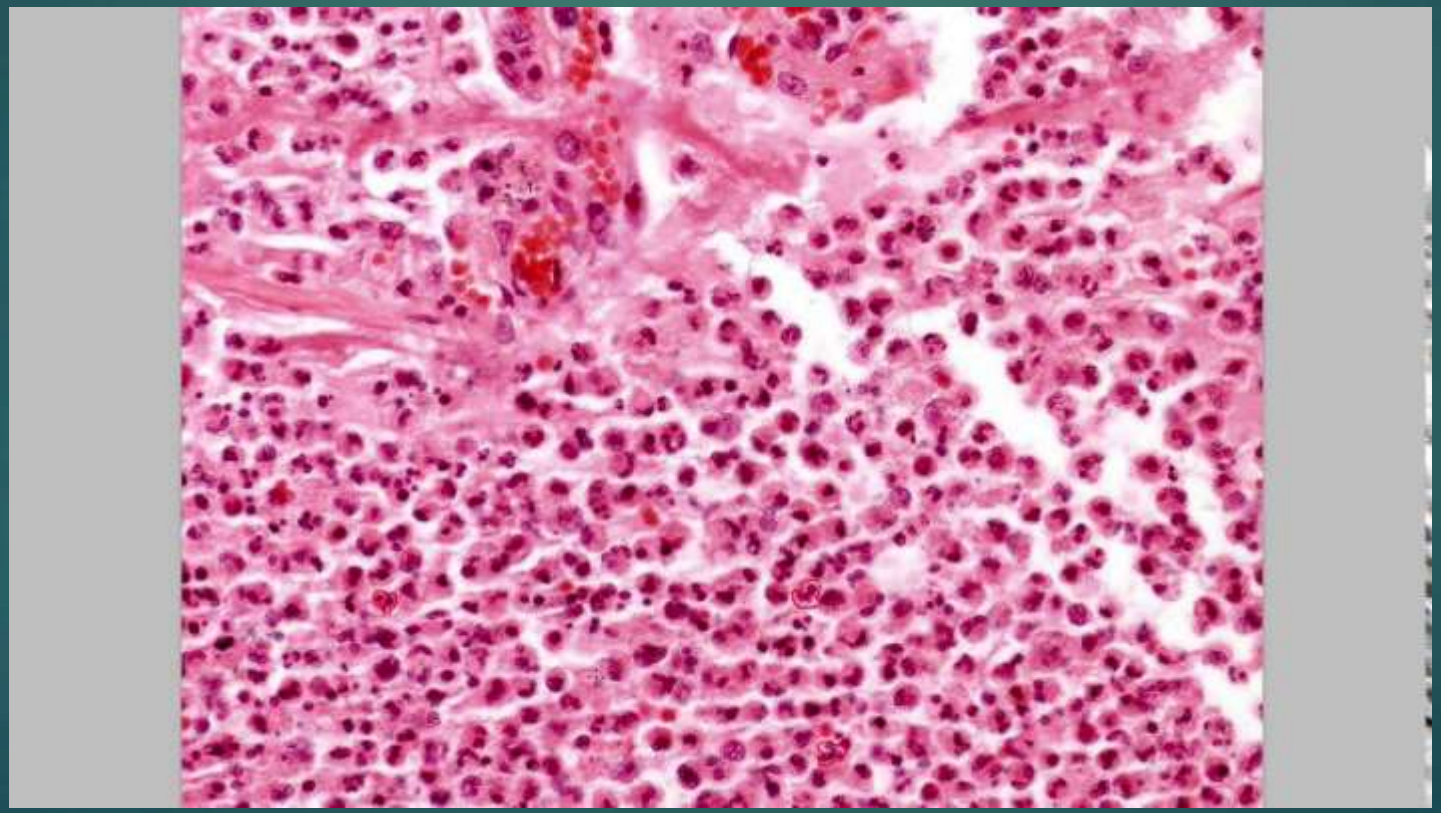


The key difference between lamellipodia and filopodia is that the **lamellipodia** are cytoskeletal actin projections present in the mobile edges of the cells while filopodia are thin cytoplasmic protrusions that extend from the leading edge of the mobile cells

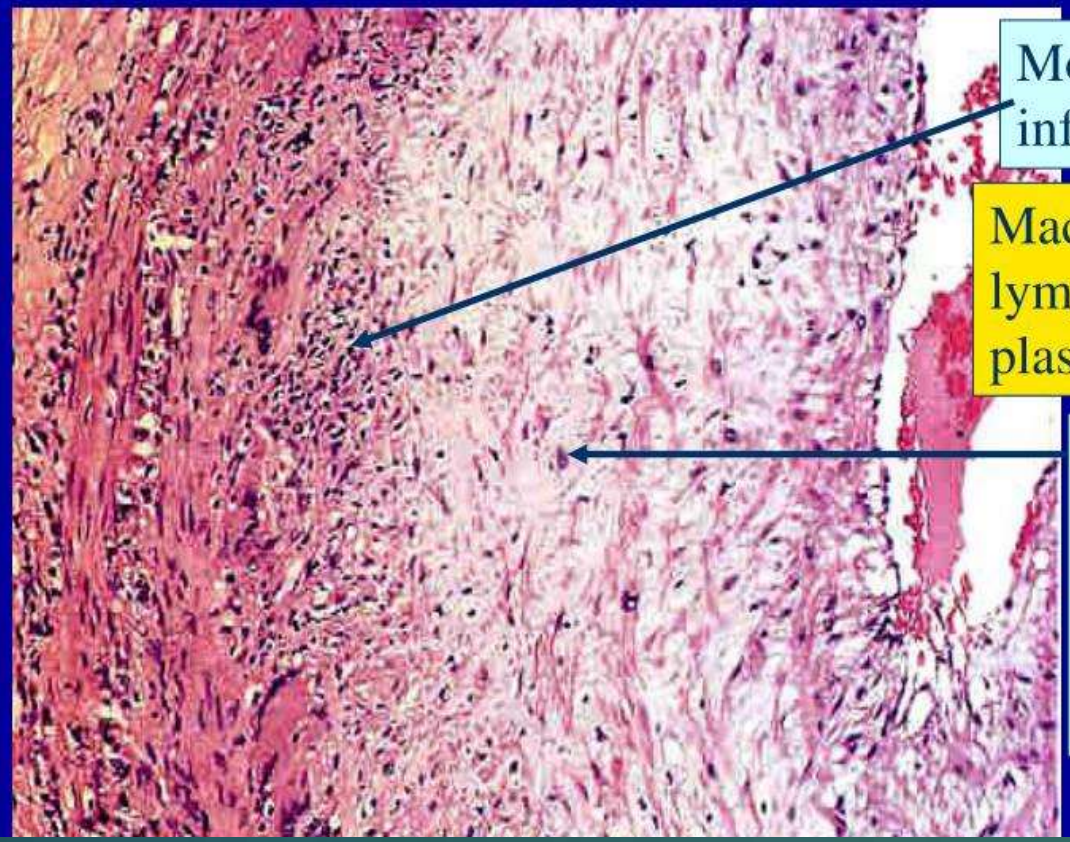


Acute inflammation

In acute inflammation polymorphonuclear neutrophils usually predominate.



Histopathology of chronic inflammation

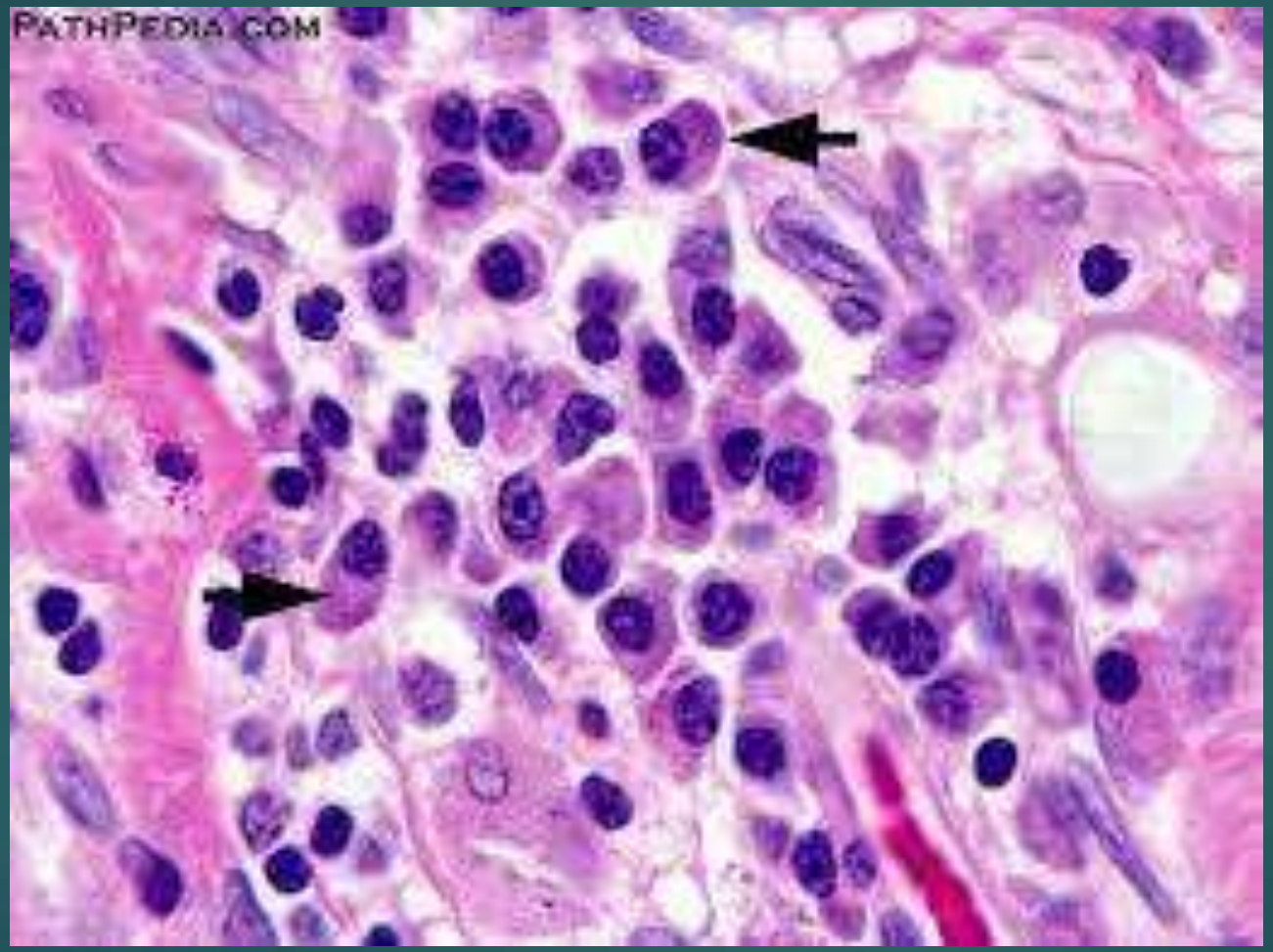


Mononuclear cell infiltration (3 cell types):

Macrophages, lymphocytes, plasma cells

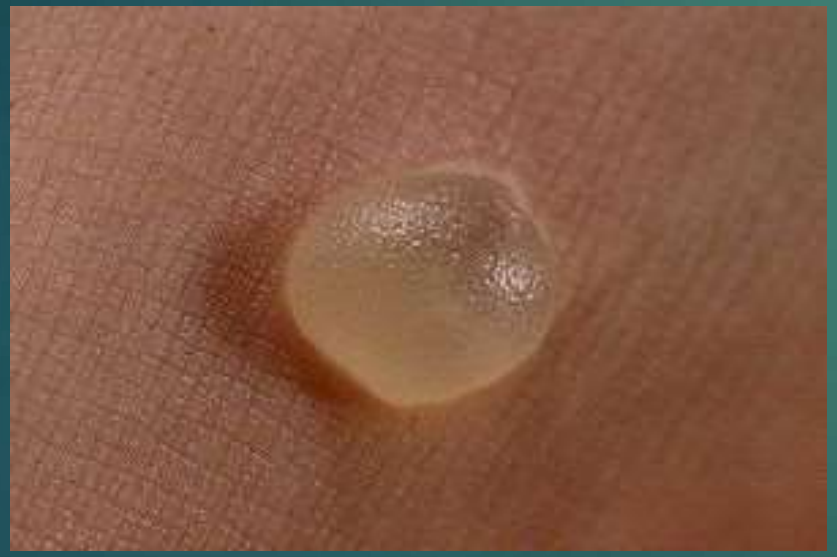
Tissue destruction with replacement of damaged tissue by well-vascularized young fibrous tissue

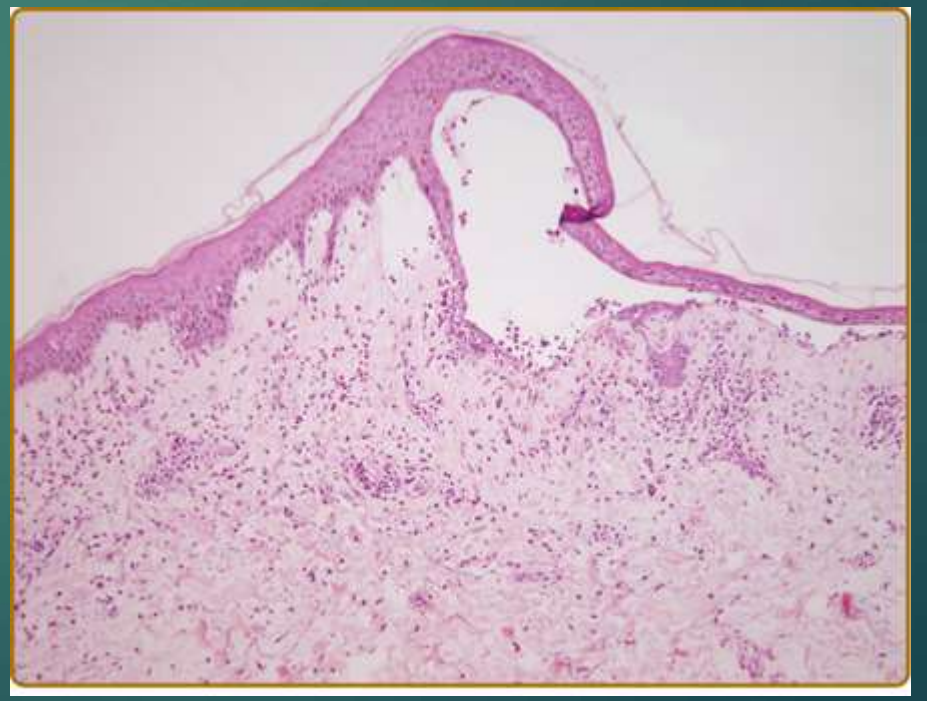
Chronic inflammation



cachexia

Serous Inflammation



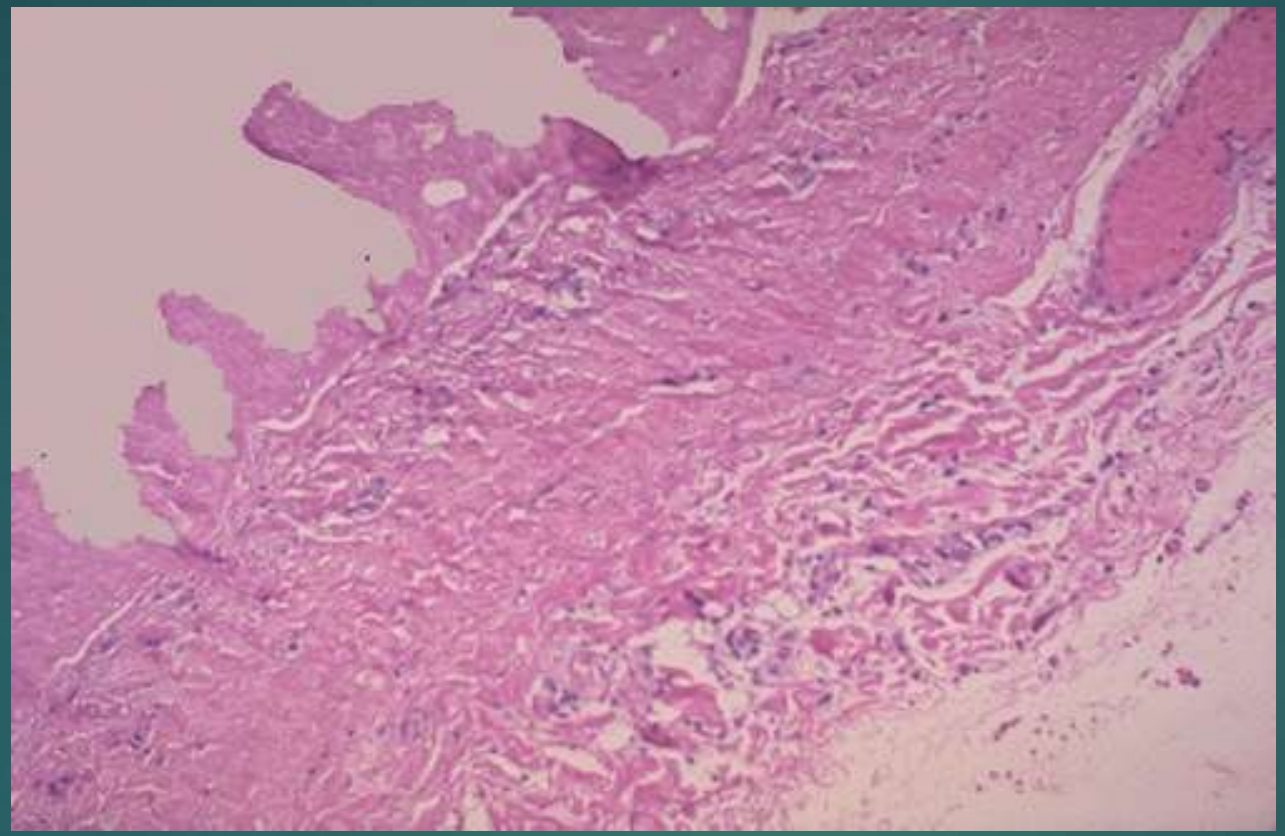


Fibrinous Inflammation

The **pericardial surface** is **dry** with a **coarse granular appearance** caused by **fibrinous exudate**

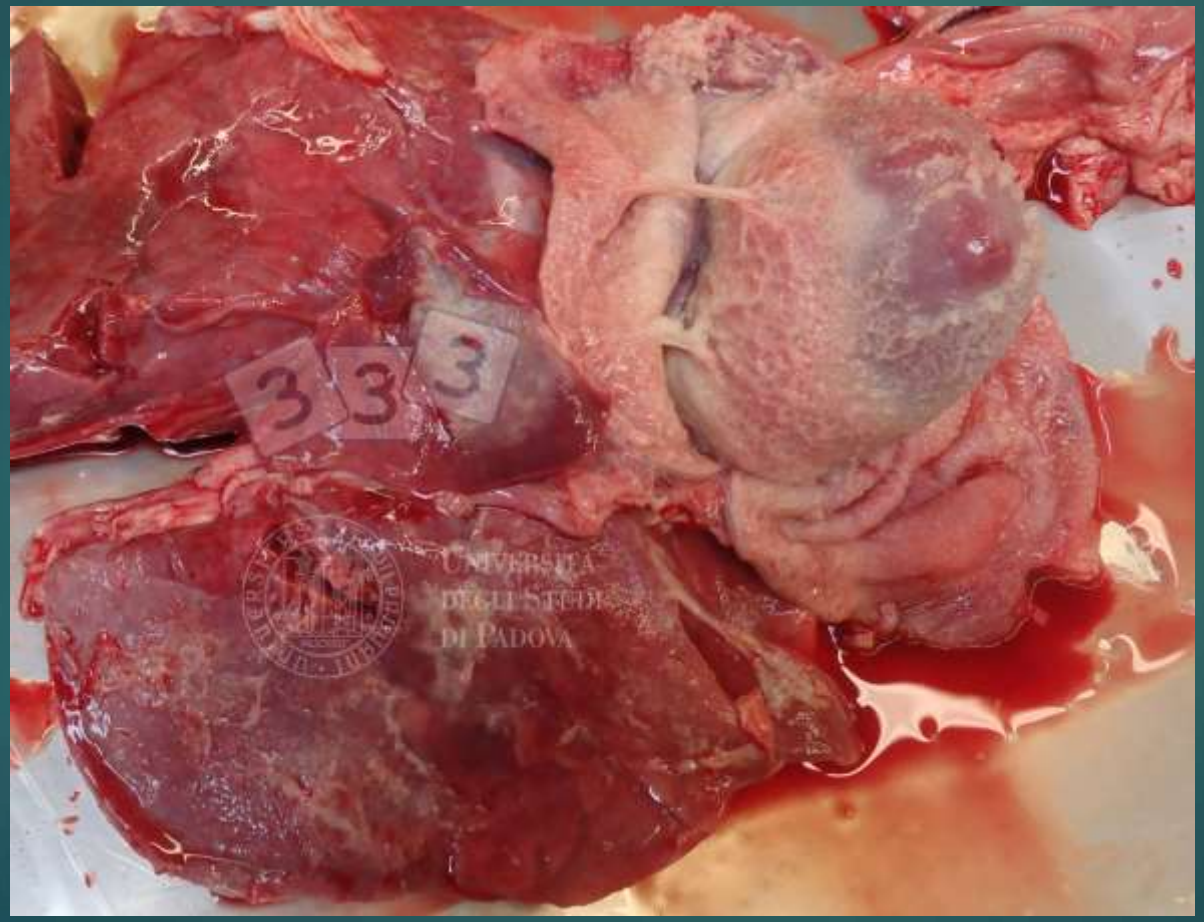
Normally, the visceral **pericardium** is **translucent**

Fibrinous Inflammation

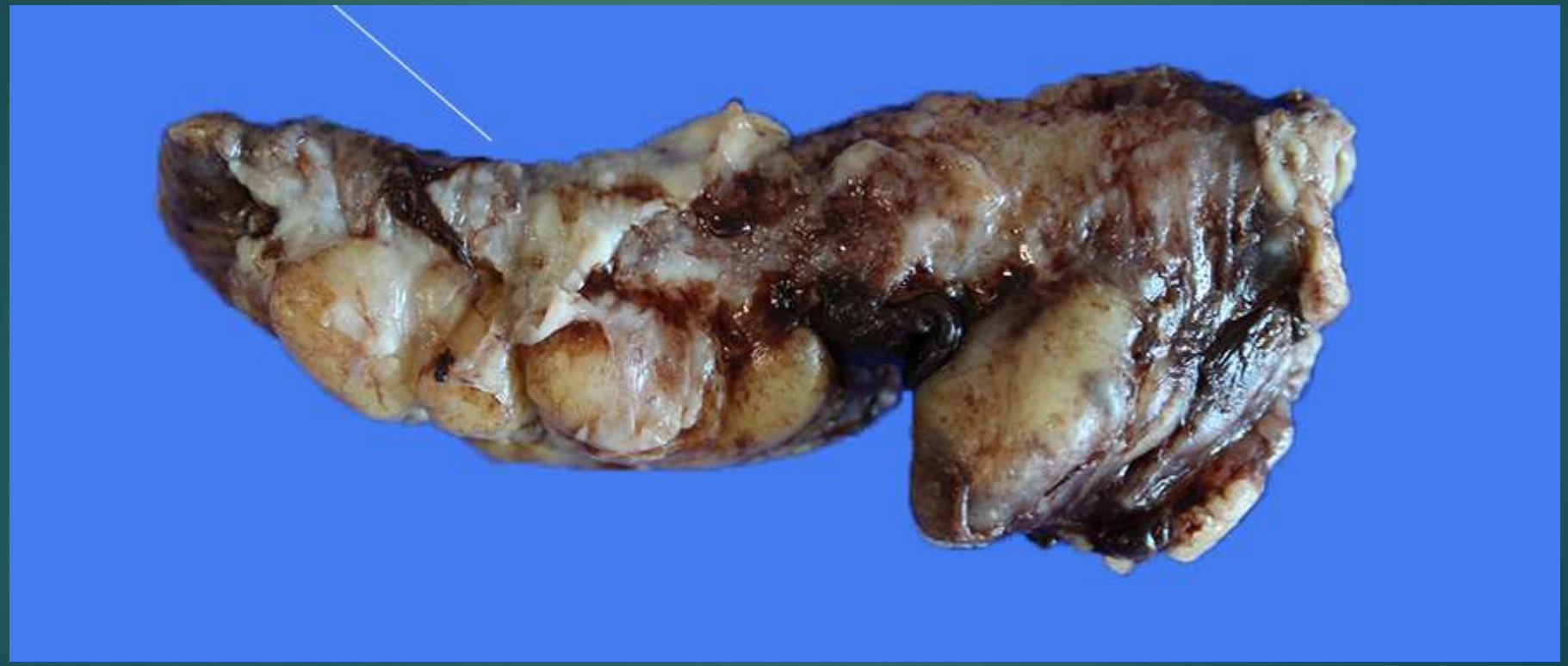


the pericardial surface here shows strands of pink fibrin extending outward. There is underlying inflammation.
fibrin appears as an eosinophilic meshwork of threads

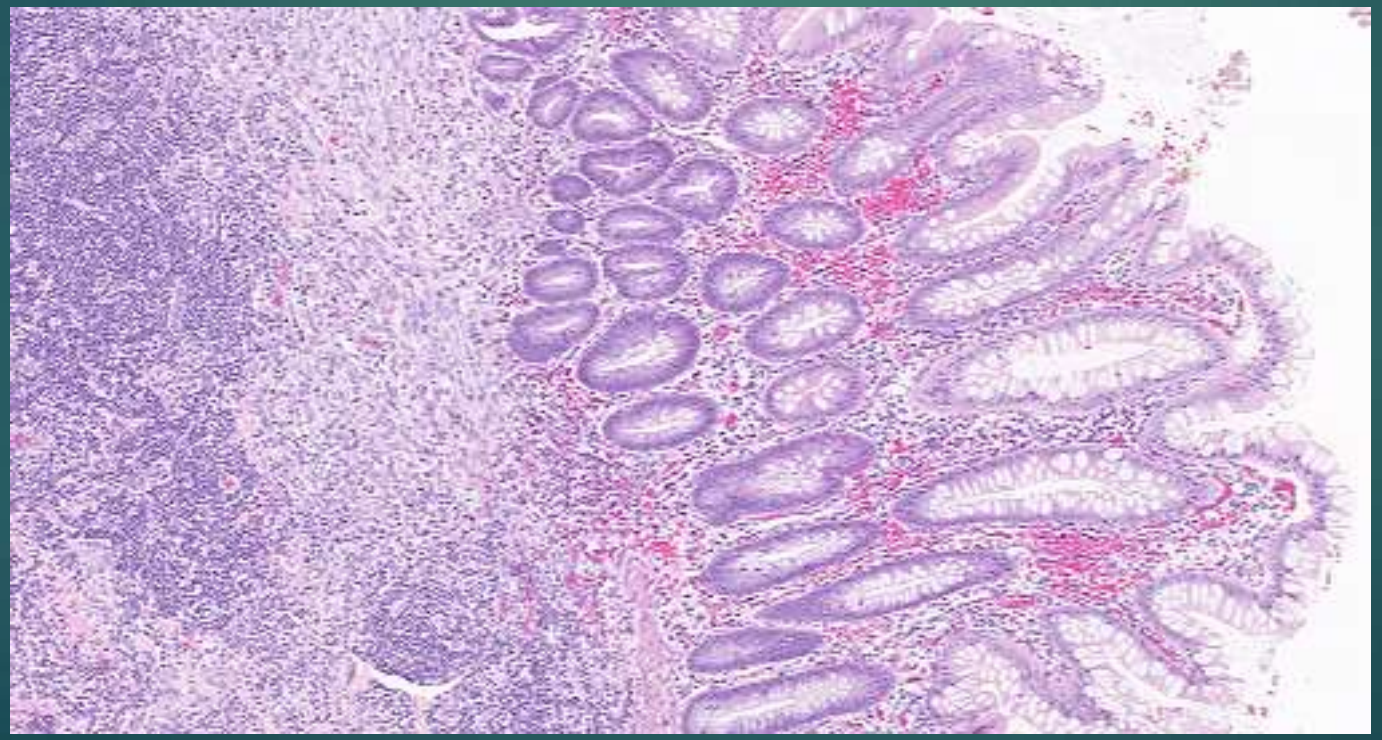
Conversion of the fibrinous exudate to scar tissue (organization) within the pericardial sac



Gross:
Appendix appears swollen and erythematous and a purulent exudate appears



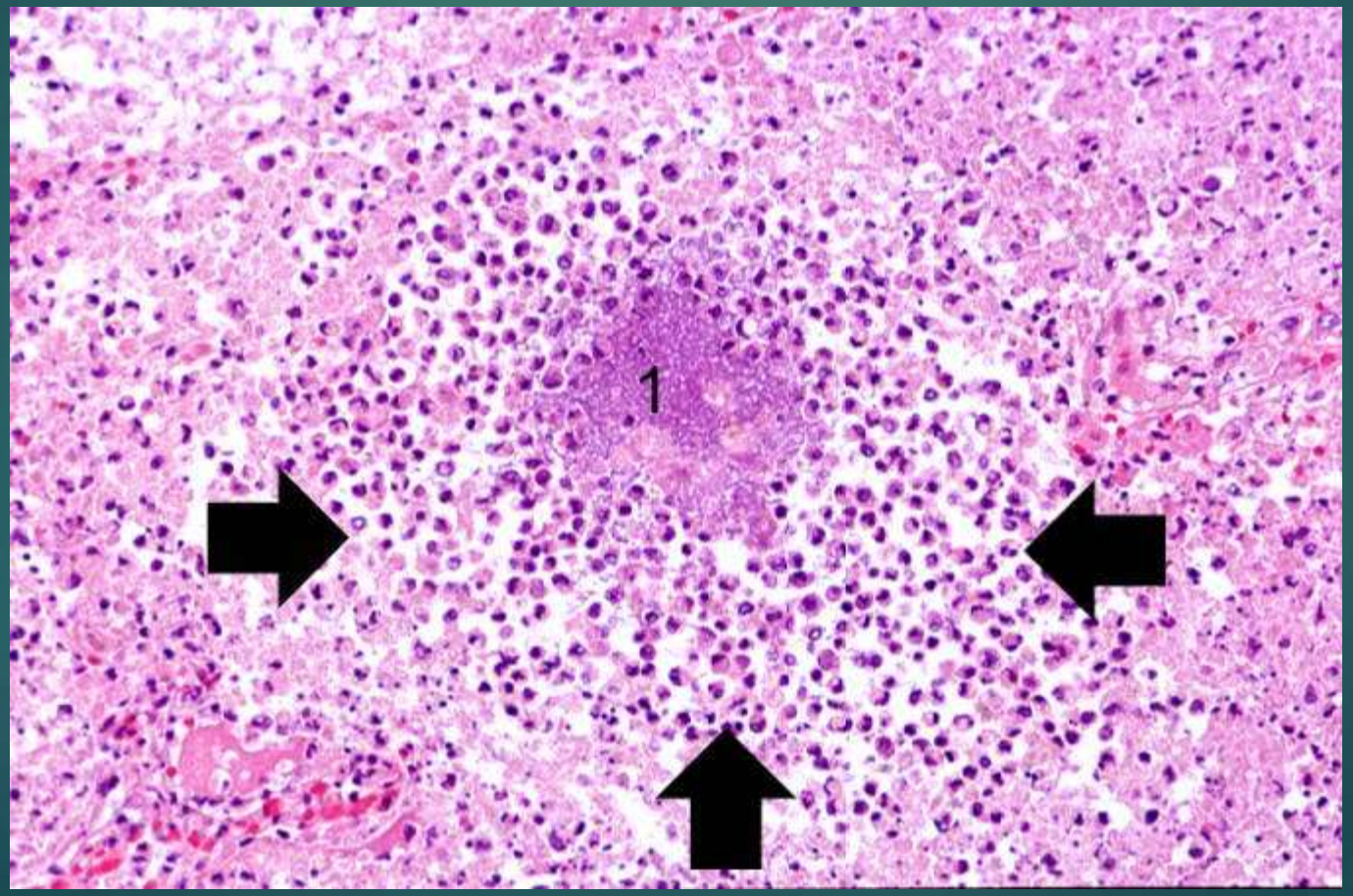
Histology;
Variable acute inflammation with predominance of neutrophils; involves some or all layers of the appendiceal wall.



Gross

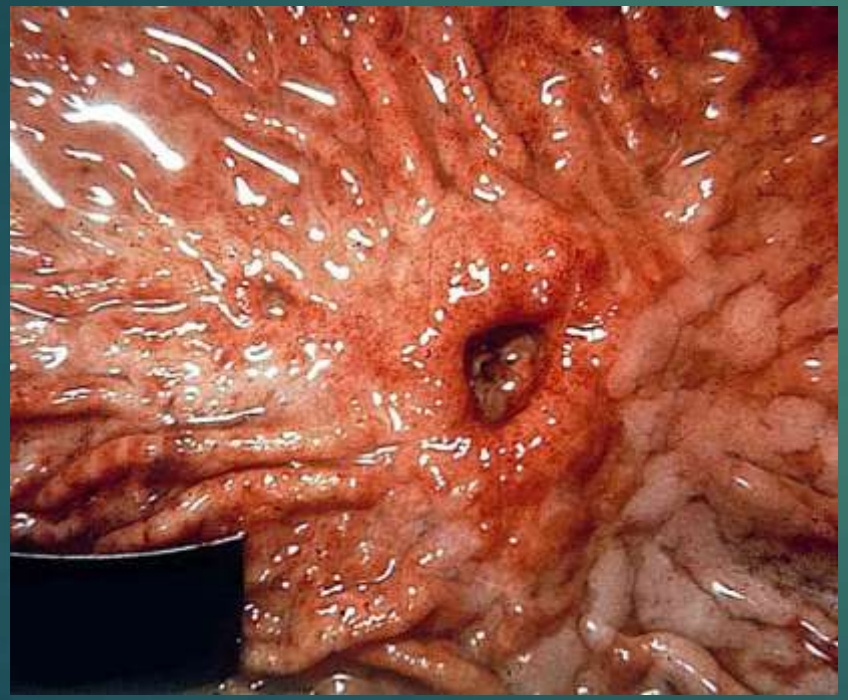
Variably sized abscesses are distributed randomly throughout all lobes of the liver.

Abscess zones:
1.central region with necrotic leukocytes and tissue cells.
2. zone of preserved neutrophils .
3. outer most zone composed of vascular dilation, parenchymal and fibroblastic proliferation

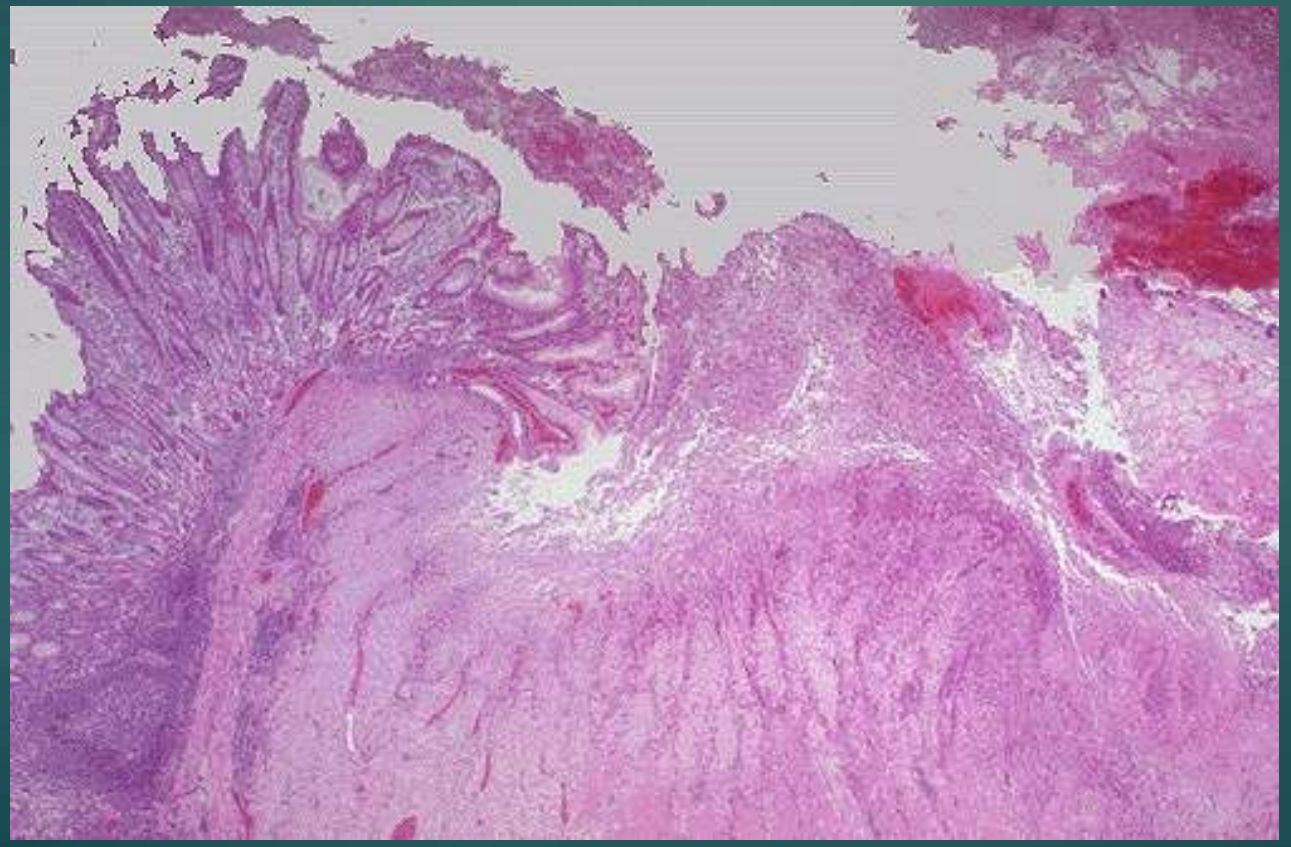


Gross

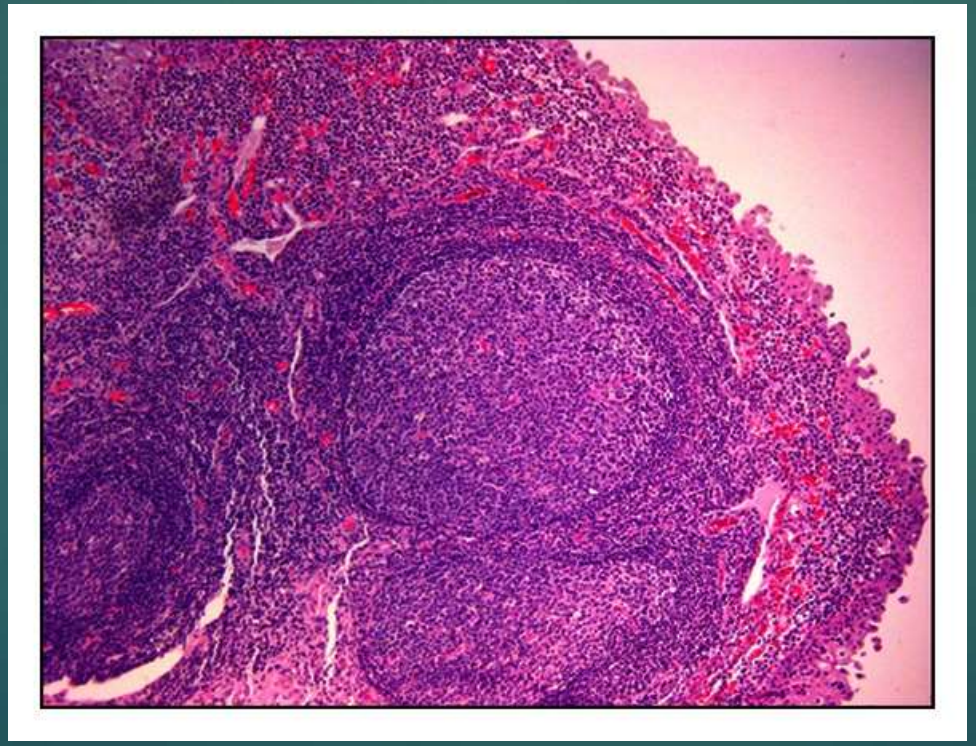
ulcer: An ulcer is a local defect, or excavation, of the surface of an organ or tissue that is produced by the sloughing (shedding) of inflamed necrotic tissue.

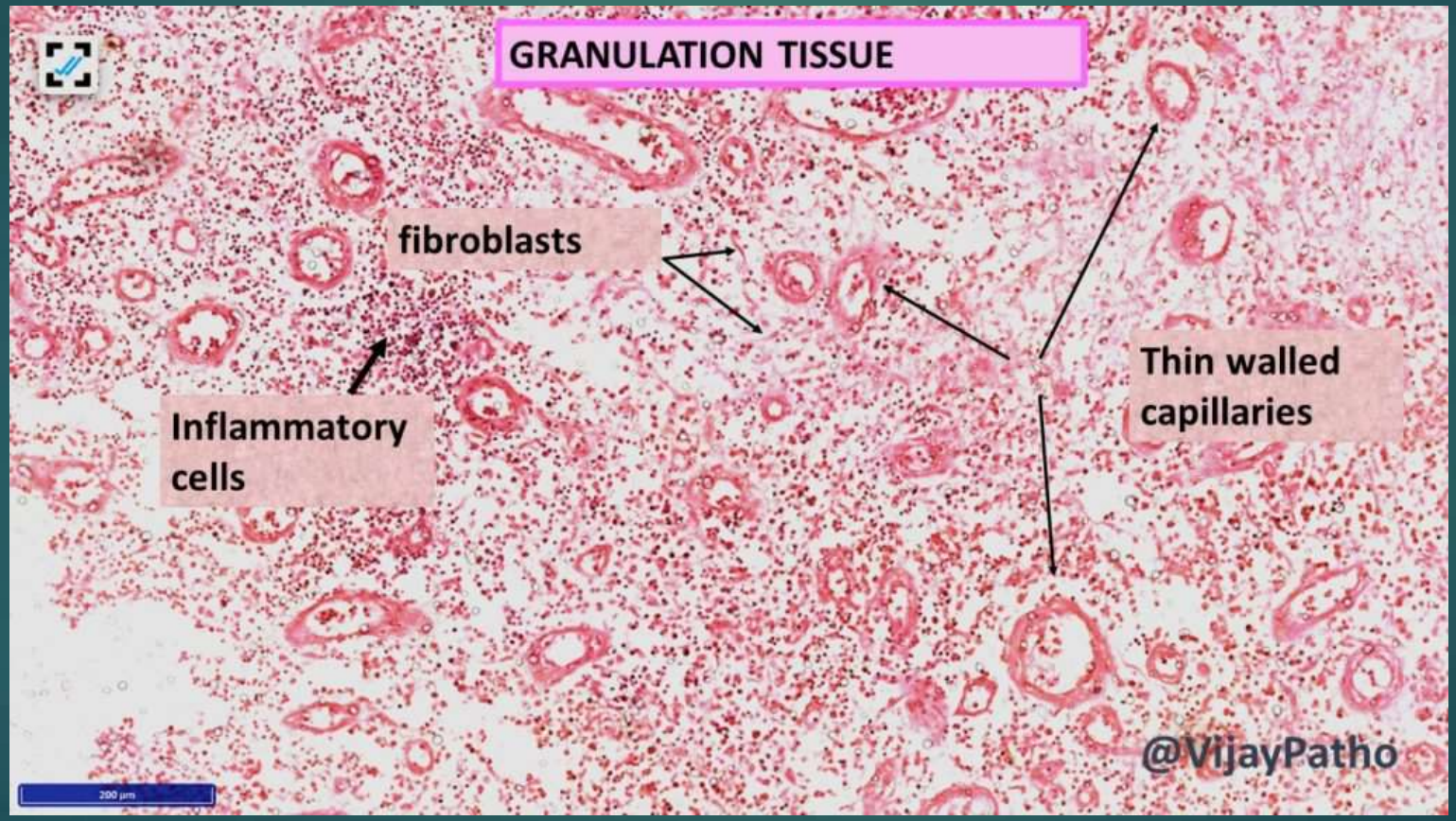


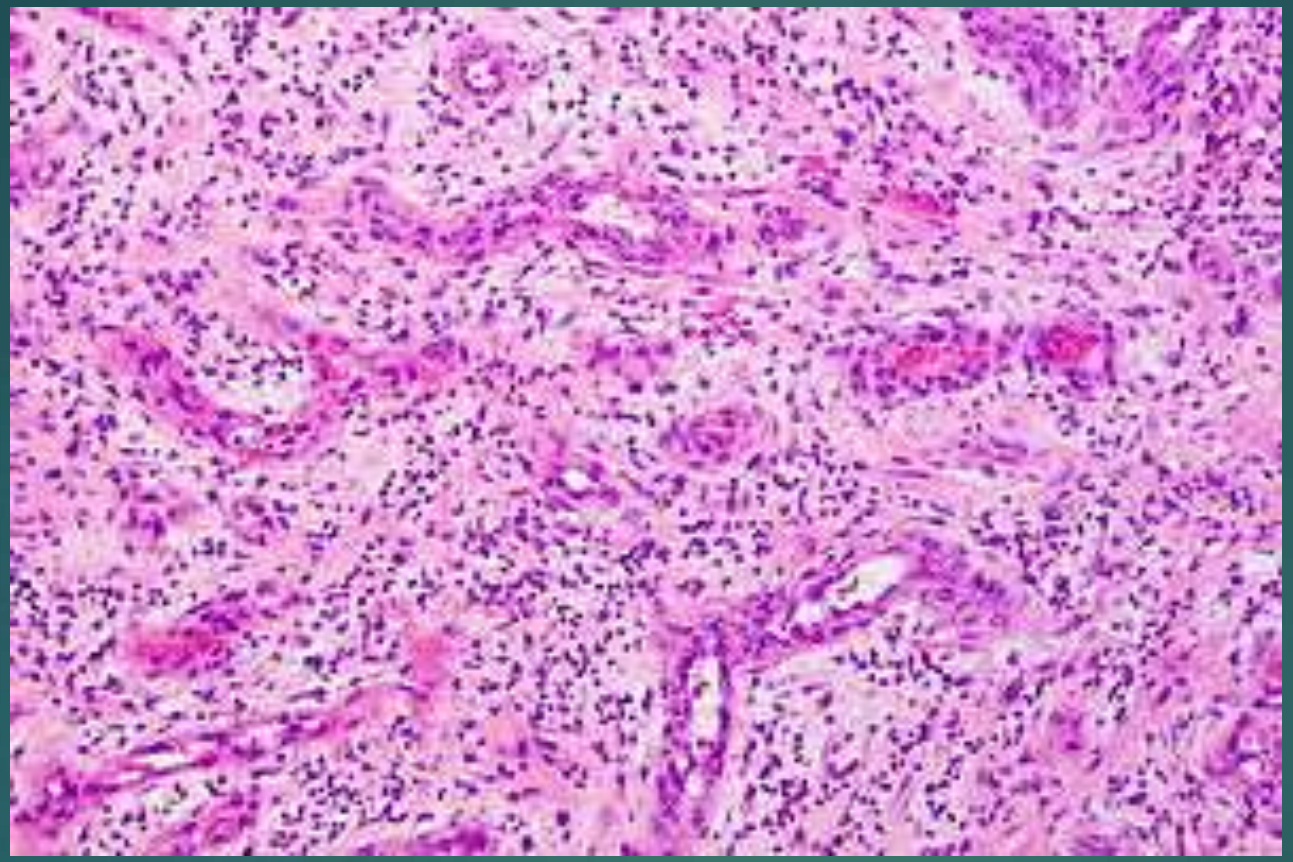
Histology;
acute ulcer:
intense polymorphonuclear infiltration and vascular dilation in the margins of the defect.
Chronic ulcer:
the margins and base of the ulcer develop fibroblast proliferation, scarring, and the accumulation of lymphocytes, macrophages, and plasma cells.



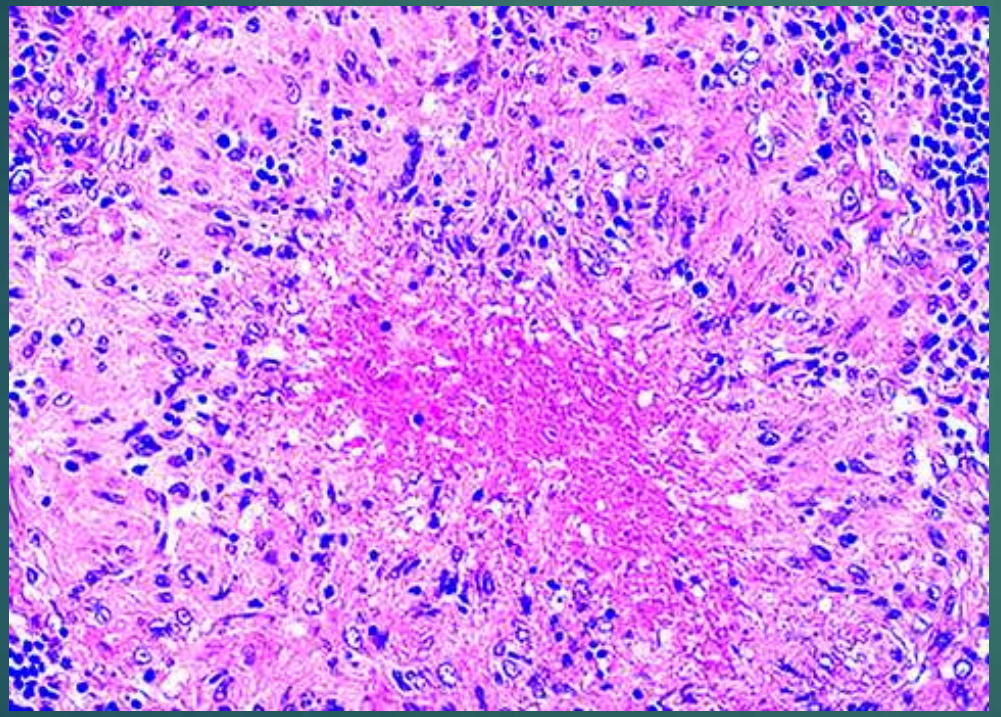
Tertiary lymphoid organs: definition, examples: Hashimoto thyroiditis, Helicobacter pylori gastritis

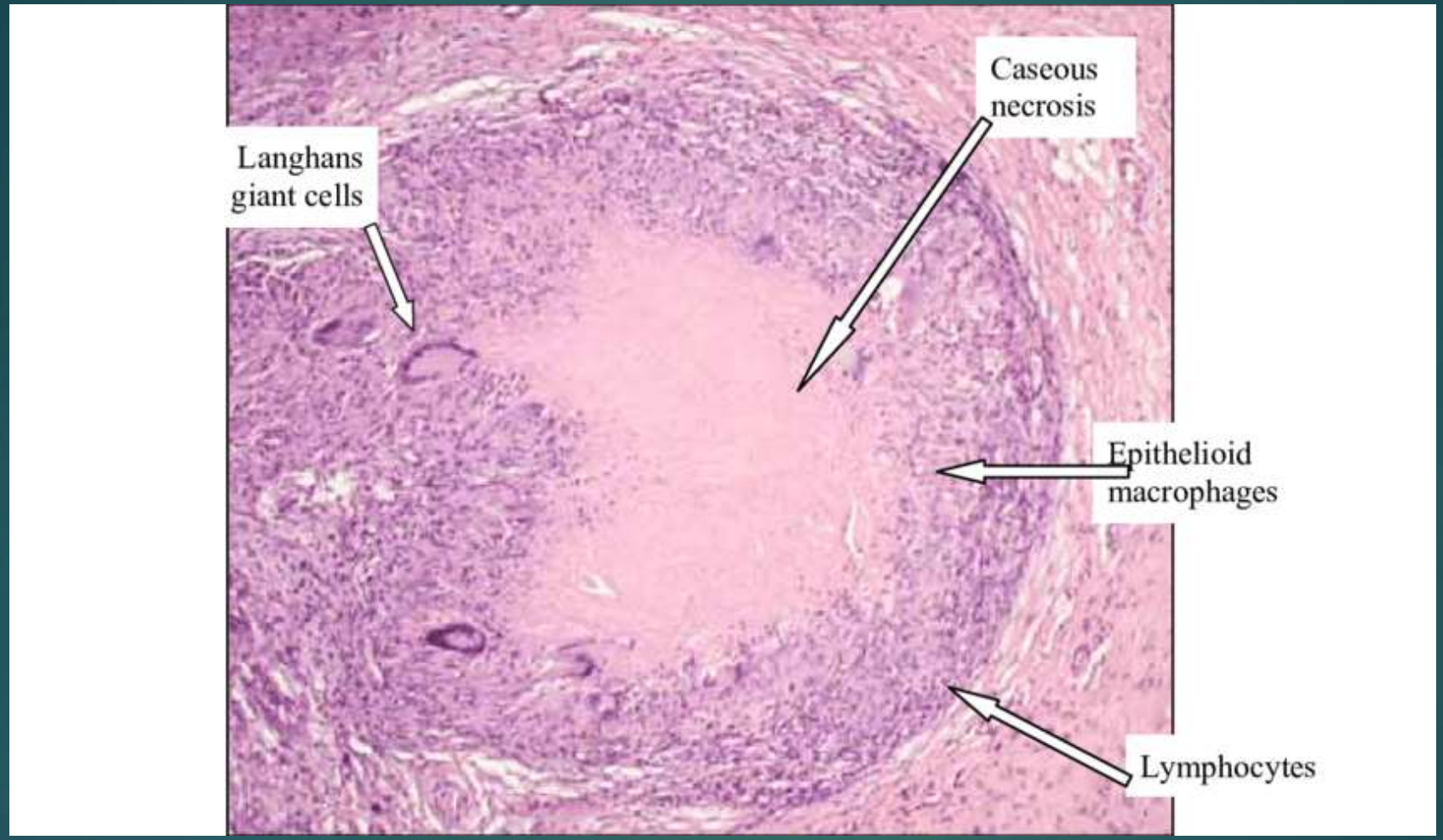



GRANULATION TISSUE
fibroblasts
Inflammatory cells
Thin walled capillaries
@VijayPatho



Granuloma formation is a cellular attempt to contain an offending agent that is difficult to eradicate




Caseous necrosis
Langhans giant cells
Epithelioid macrophages
Lymphocytes

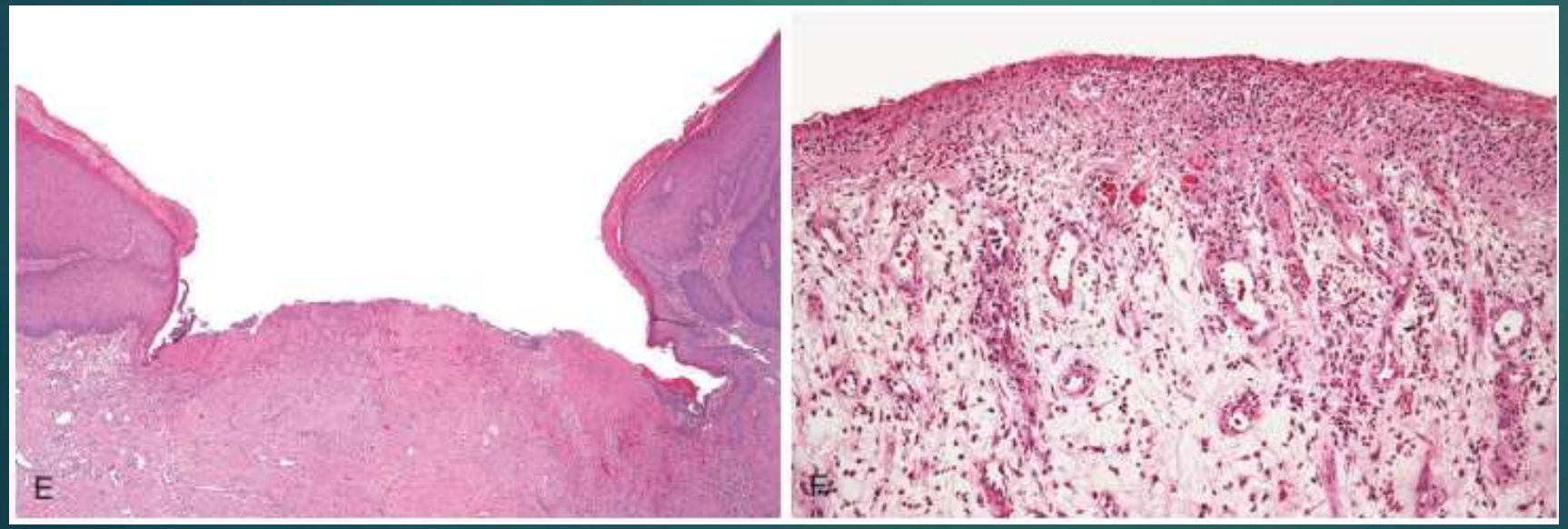
Venous leg ulcers:
seen in chronic venous hypertension, which may be caused by severe varicose veins or congestive heart failure

Arterial ulcers:
develop in individuals with atherosclerosis of peripheral arteries, especially associated with diabetes.

Pressure sores:
caused by prolonged compression of tissues against a bone, for example, in bedridden

Diabetic ulcers:
caused by:
small vessel disease causing ischemia, neuropathy, systemic metabolic abnormalities, and secondary infections

Morphology of Any ulcer

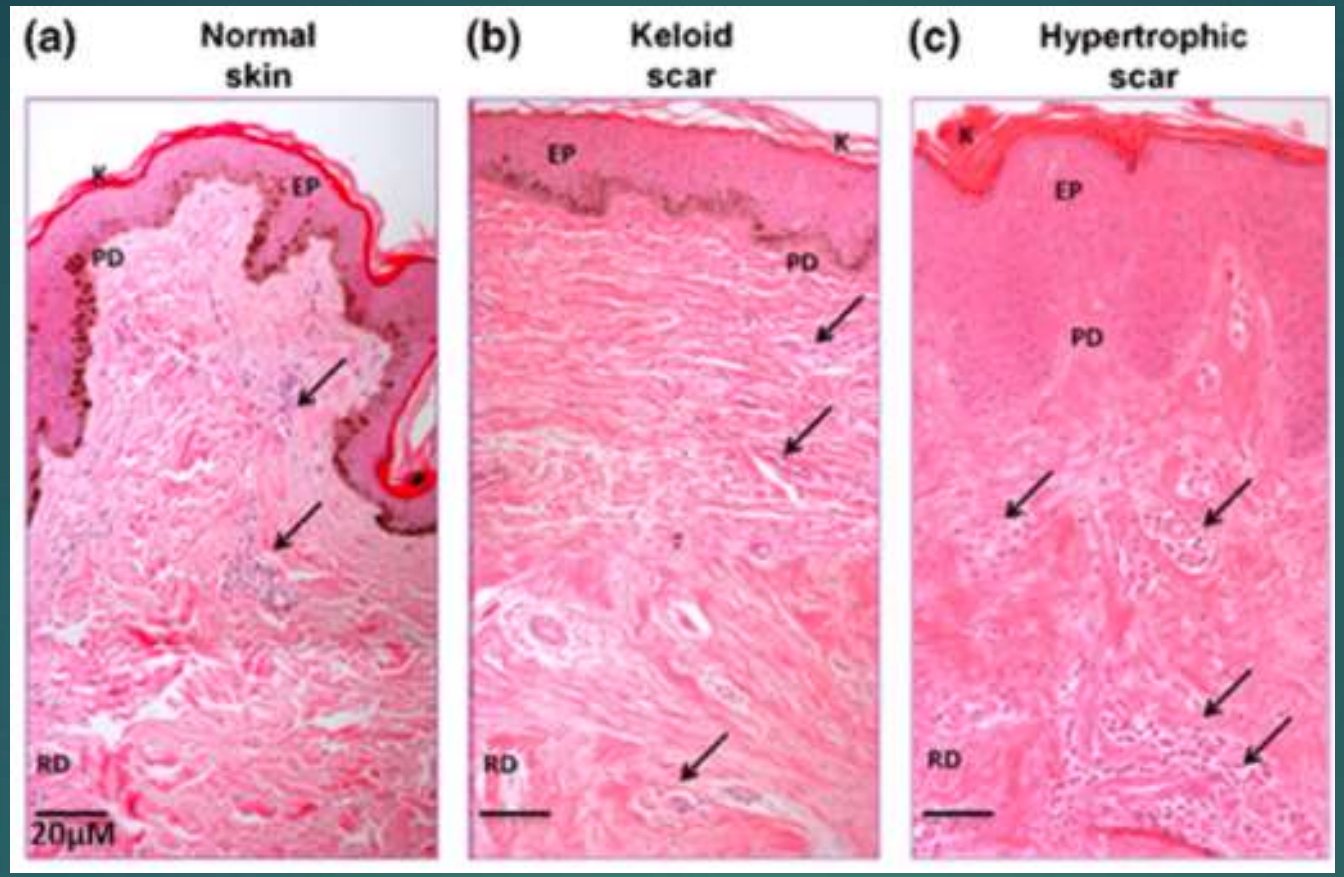


epithelial ulceration and extensive granulation tissue in the underlying dermis

wound rupture (dehiscence): cause??

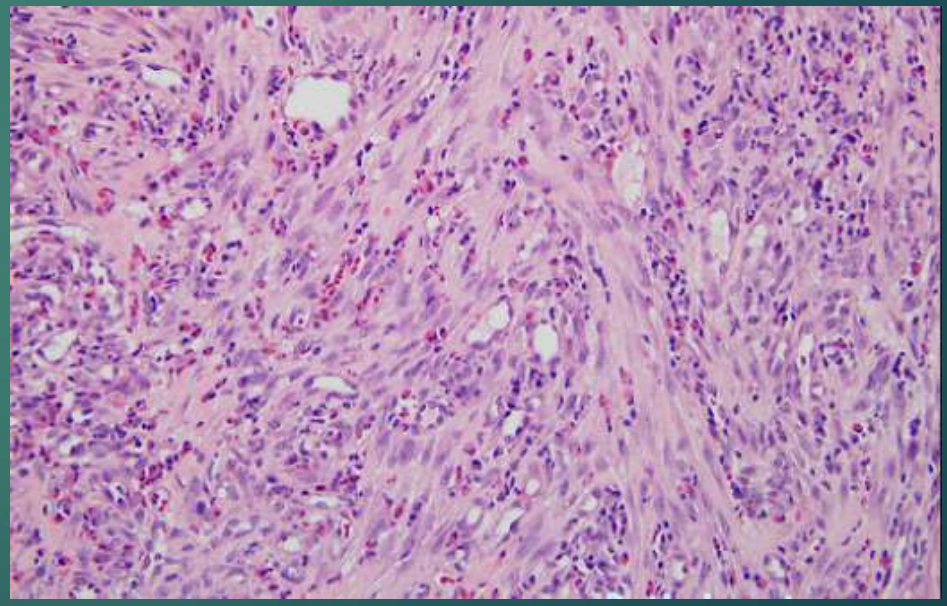
Hypertrophic scar

keloid

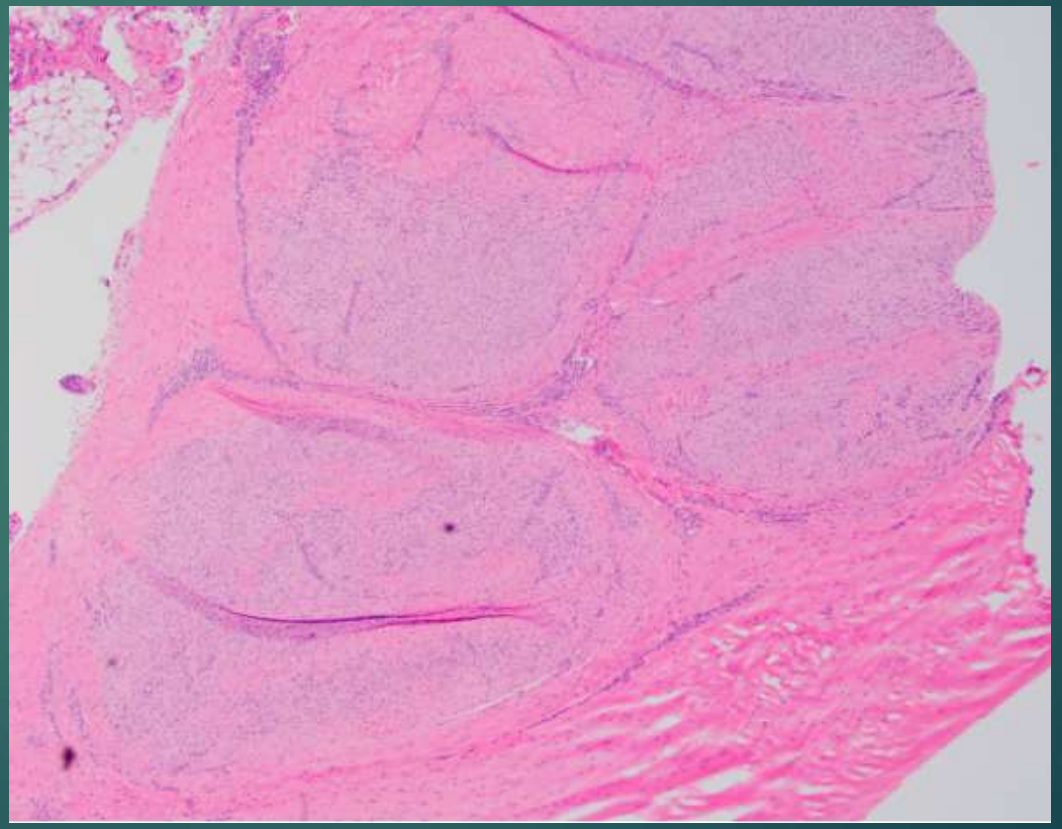


A. In normal skin, the characteristic random orientation and bundle formation of collagen fibres
B. increased number of thick collagen fibres arranged in bundles
C. The collagen fibres were arranged randomly and showed highly cellular zones

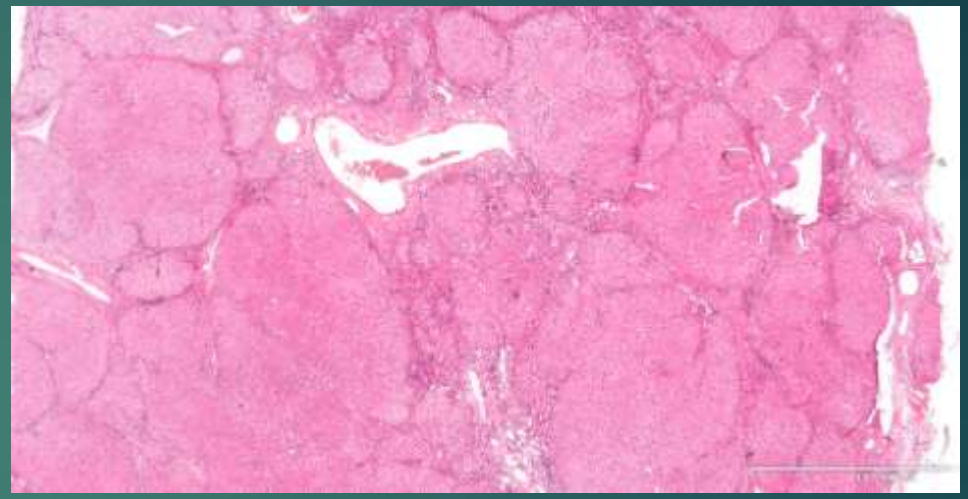
Exuberant granulation



contracture



liver cirrhosis

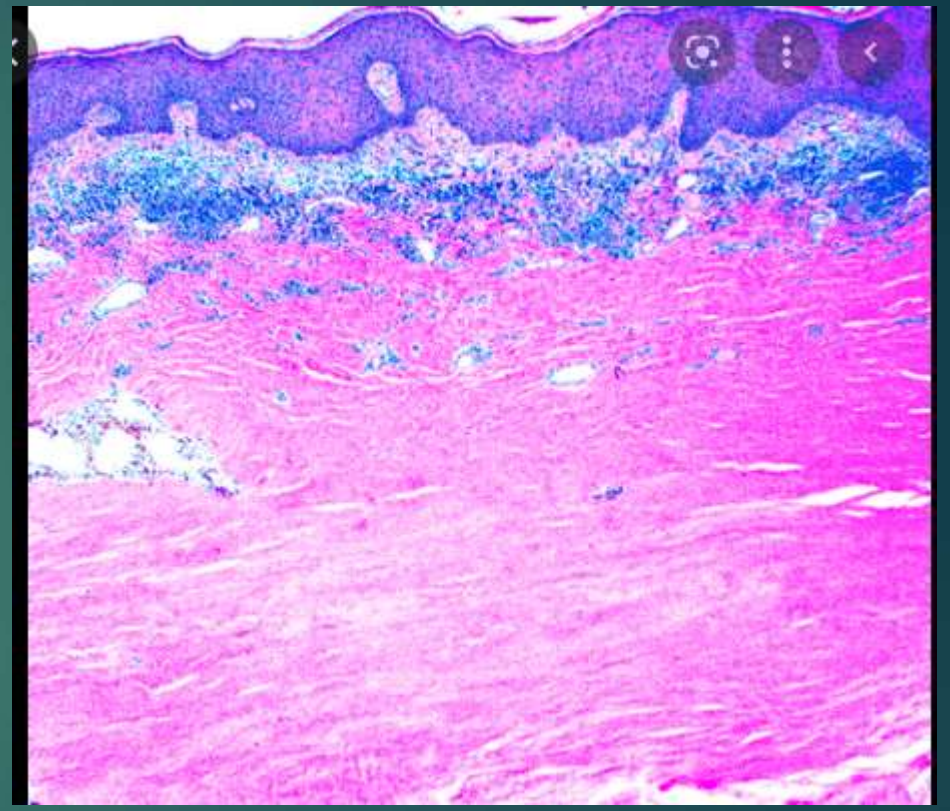


Diffuse nodulation of liver due to fibrous bands subdividing liver into regenerative nodules

diffuse disruption in architecture of the liver with bridging fibrous septa and parenchymal nodules formation.

systemic sclerosis (scleroderma).

- shortening and hardening of muscles, tendons, or other tissue, often leading to deformity and rigidity of joints.



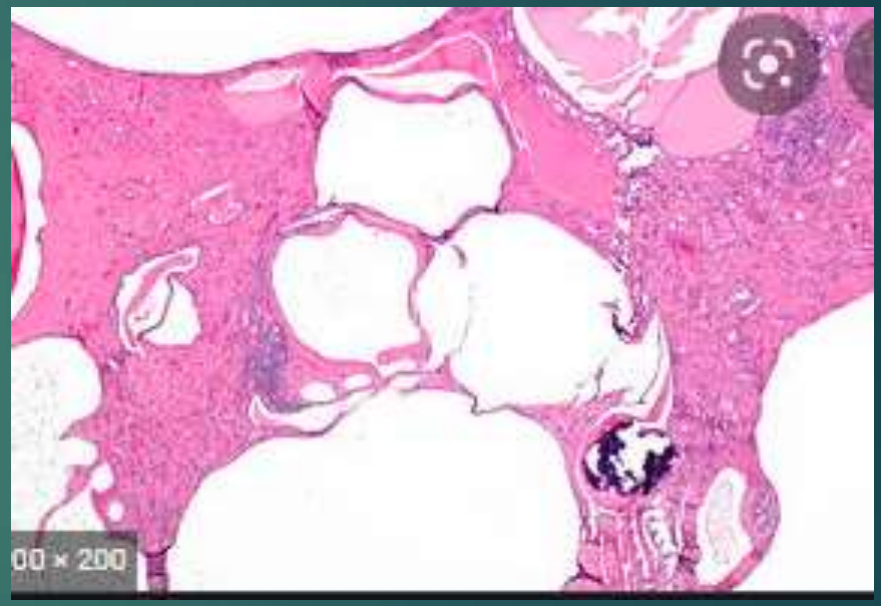
- thickened collagen bundles within papillary and reticular dermis

End-stage kidney disease Gross

•enlarged kidneys with bosselated surface and composed of numerous subcapsular cysts

End-stage kidney disease histology

Cystic expansions of all portions of renal tubule and glomerular capsule, lined by atrophic epithelium.

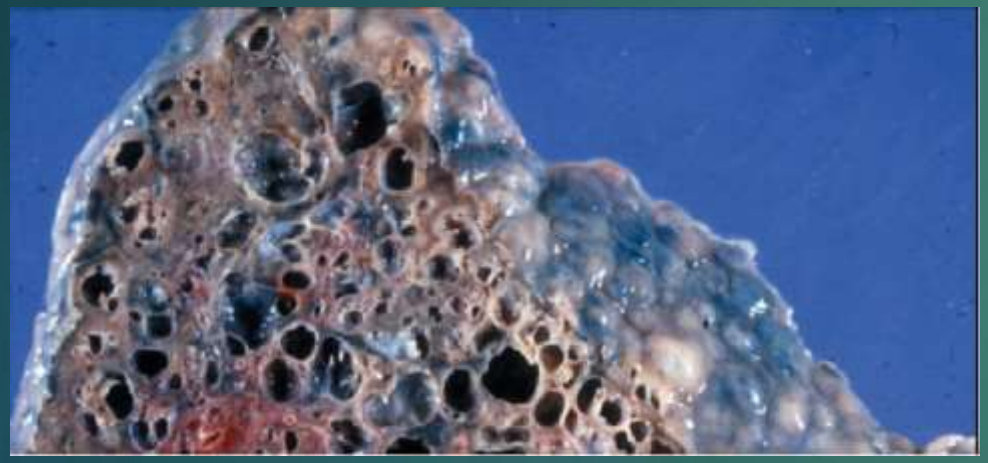


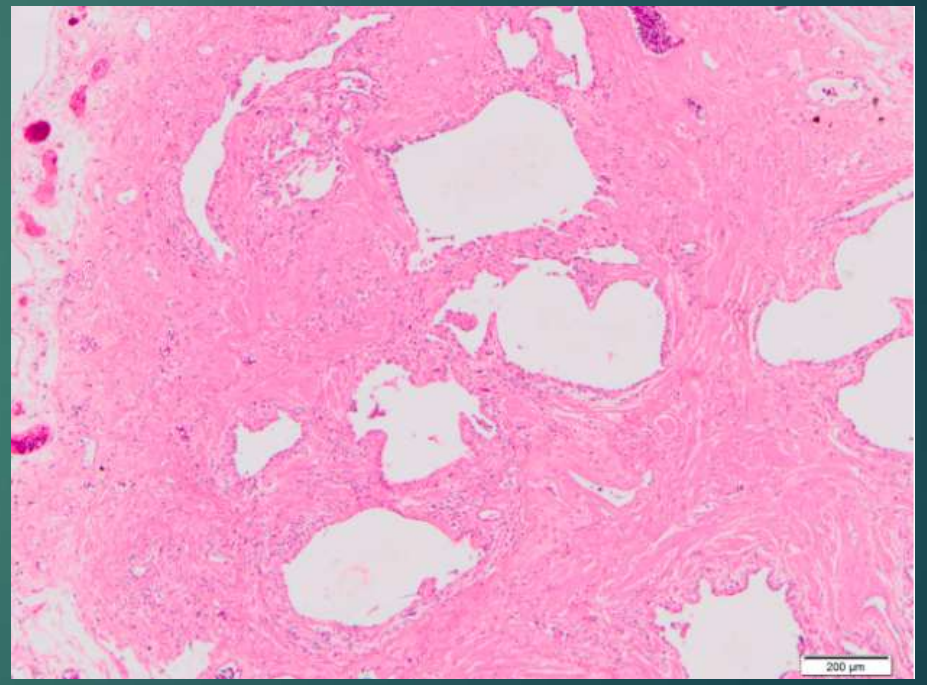
Hyperemia

Congestion

❖fibrosing diseases of the lung.

Grossly: Honeycomb, Cystic spaces with fibrotic wall
Histology: cystic spaces lined by bronchiolar epithelium and fibrotic wall

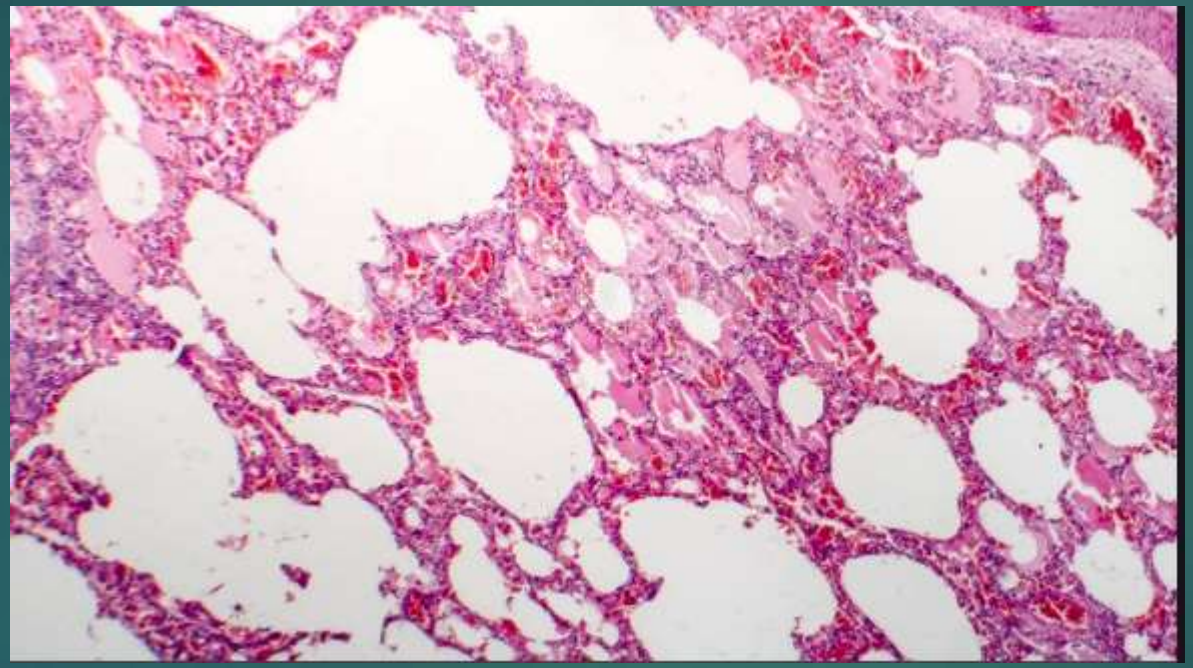




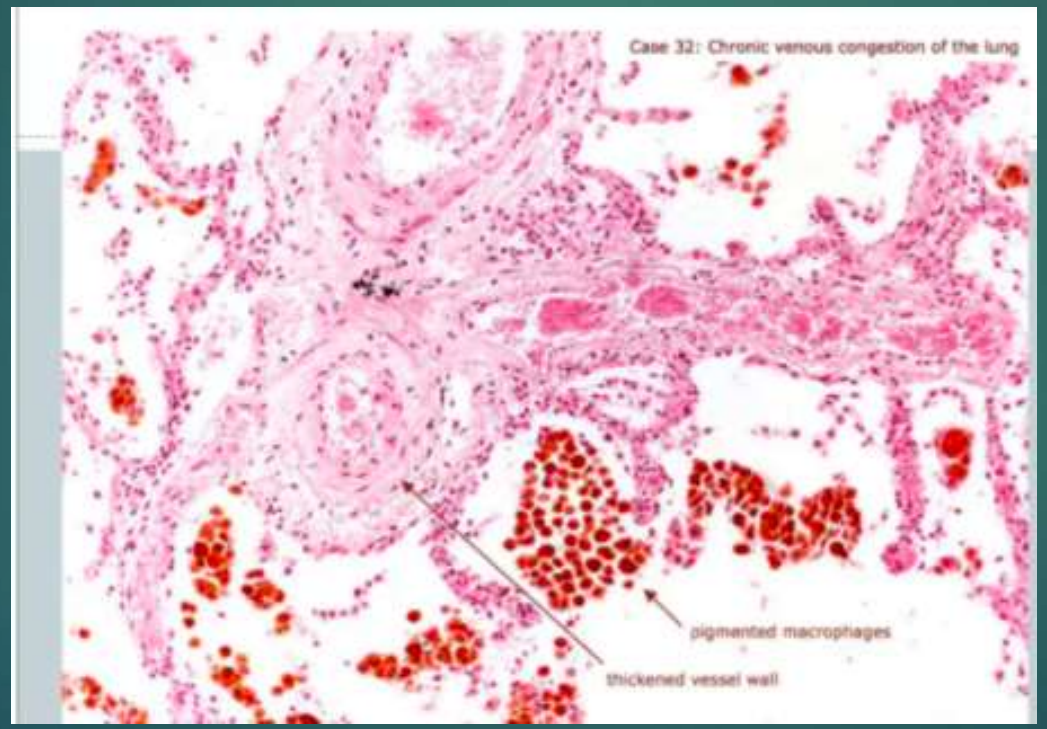
LUNG CONGESTION

Cut surfaces of hyperemic or congested tissues feel wet and typically ooze blood

acute pulmonary congestion is marked by blood-engorged alveolar capillaries and variable degrees of alveolar septal edema and intraalveolar hemorrhage

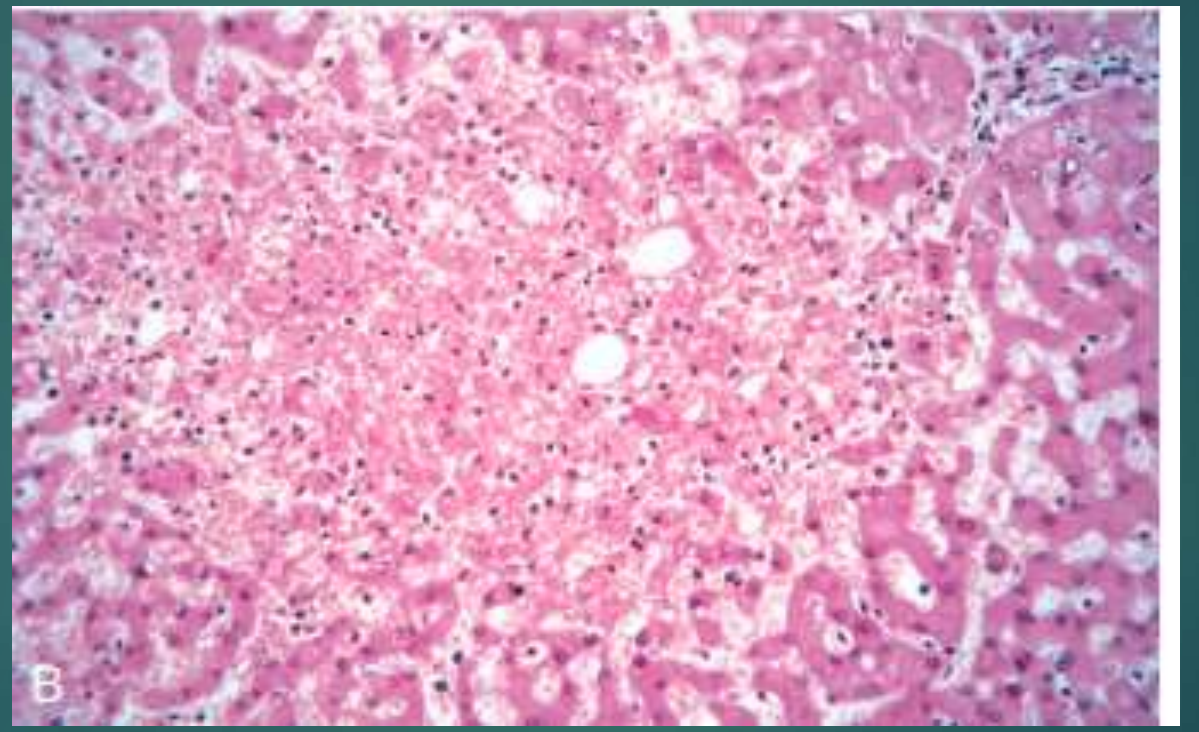


chronic pulmonary congestion, the septa become thickened and fibrotic, and the alveolar spaces contain numerous macrophages laden with hemosiderin ("heart failure cells") derived from phagocytosed red cells.



HEPATIC CONGESTION

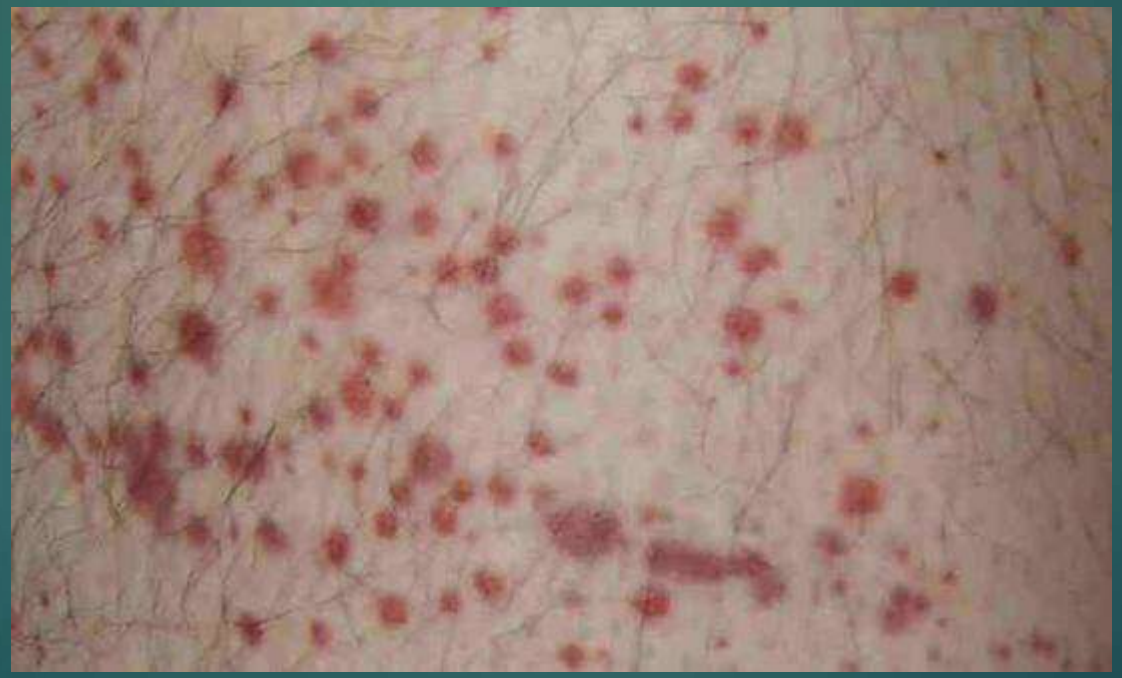
centrilobular hepatocyte necrosis.
Hemorrhage.
hemosiderin-laden macrophages



peau d'orange caused by Infiltration and obstruction of superficial lymphatics by breast cancer

Elephantiasis
massive edema caused by lymphatic obstruction by parasitic infection

Petechiae :
are minute (1 to 2 mm in diameter) hemorrhages into skin, mucous membranes, or serosal surfaces .

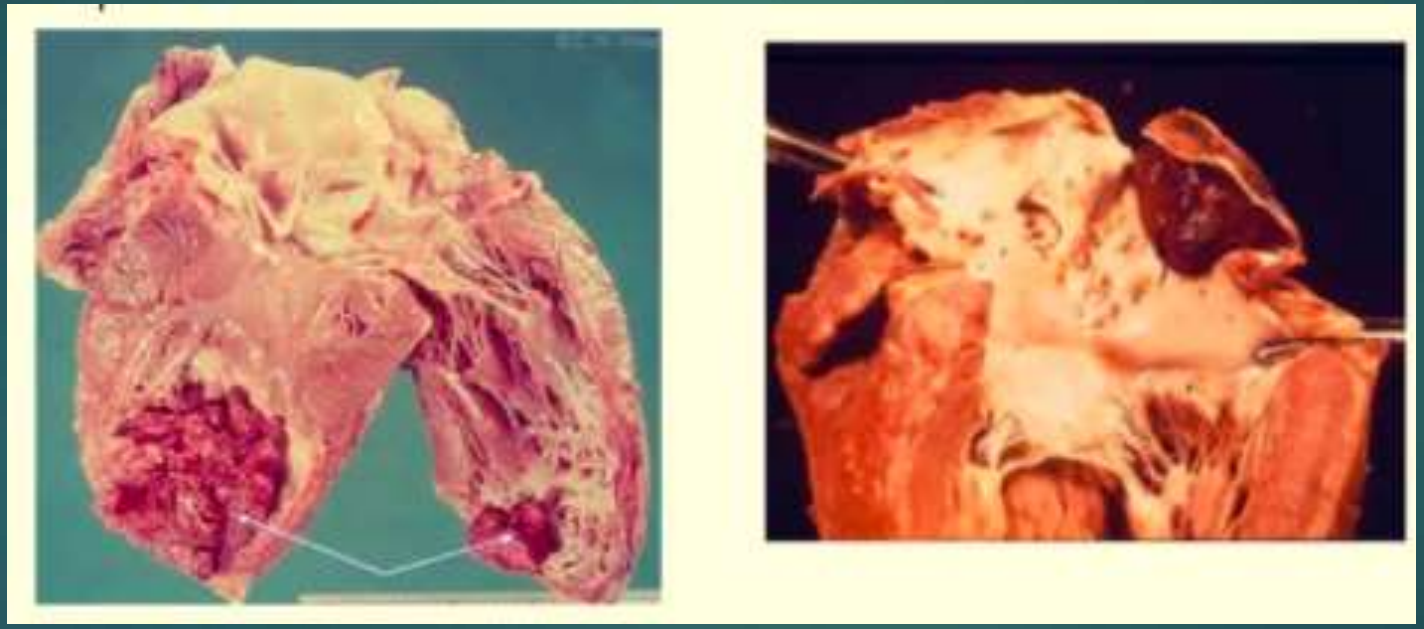


Purpura

are slightly larger (3 to 5 mm) hemorrhages.

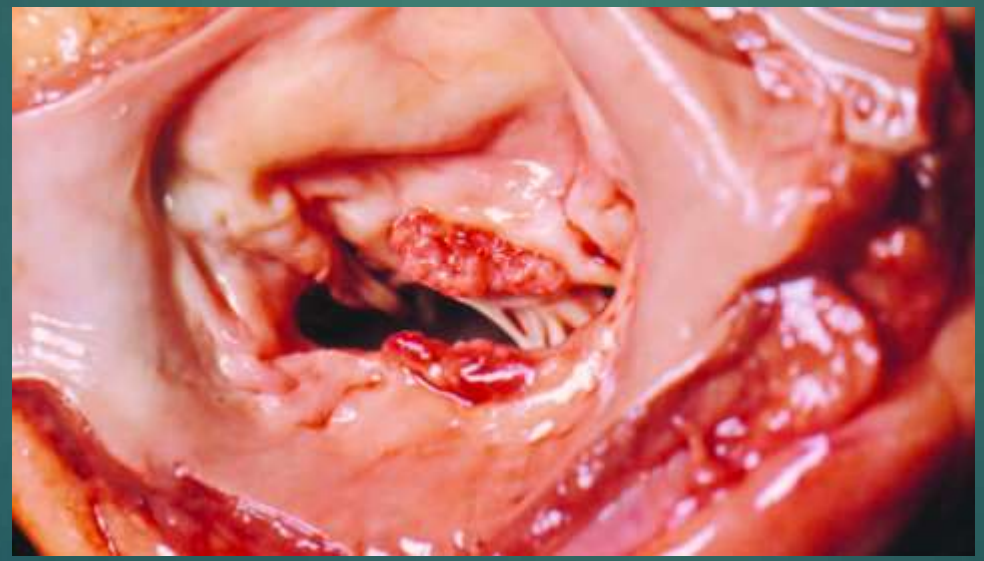
Ecchymoses:
are larger (1 to 2 cm) subcutaneous hematomas (also called bruises).

Mural thrombi:
Thrombi occurring in heart chambers or in the aortic lumen



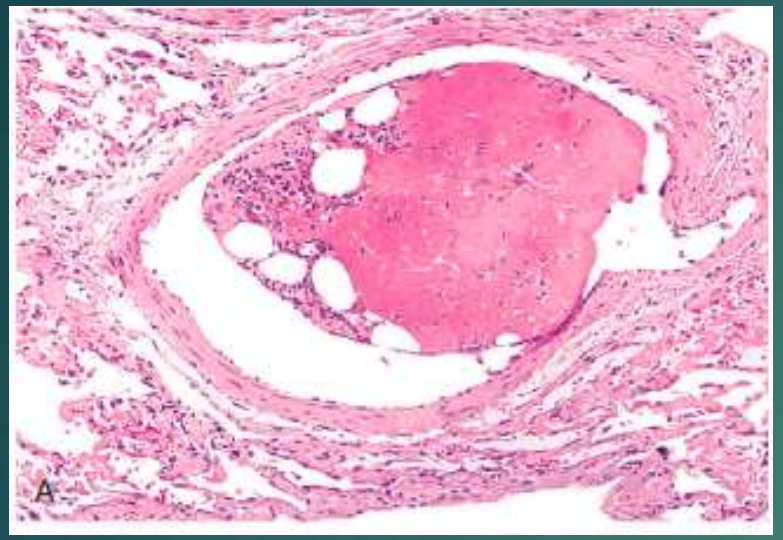
Venous thrombi (phlebothrombosis):

Cardiac Vegetations

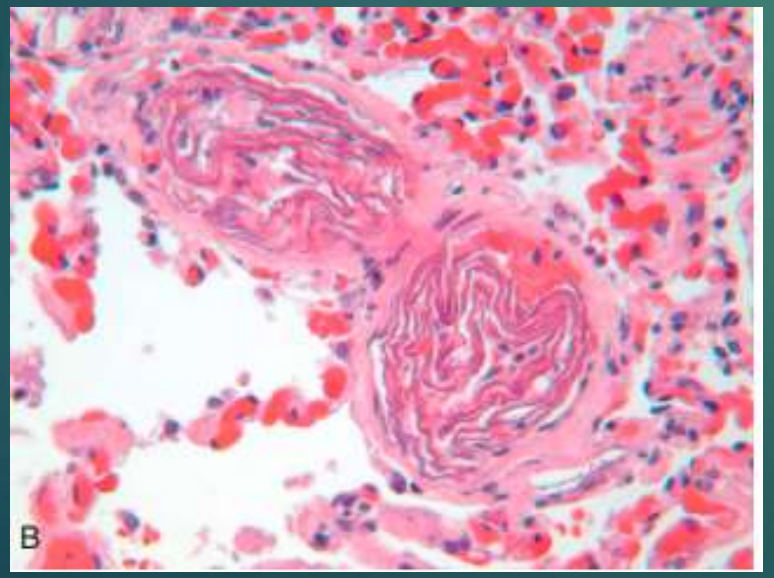


lines of Zahn

DIC

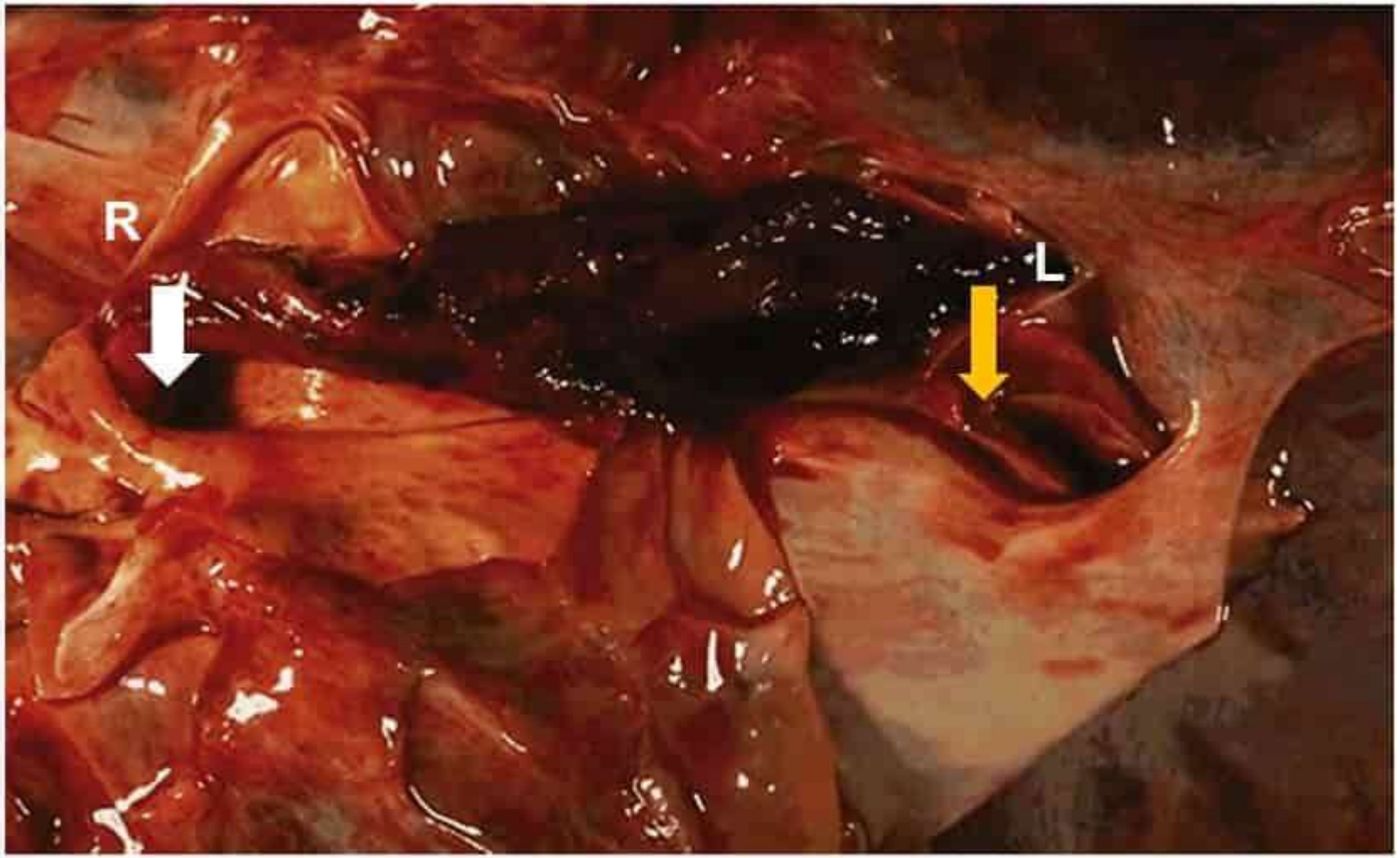


Bone marrow embolus



Amniotic fluid emboli

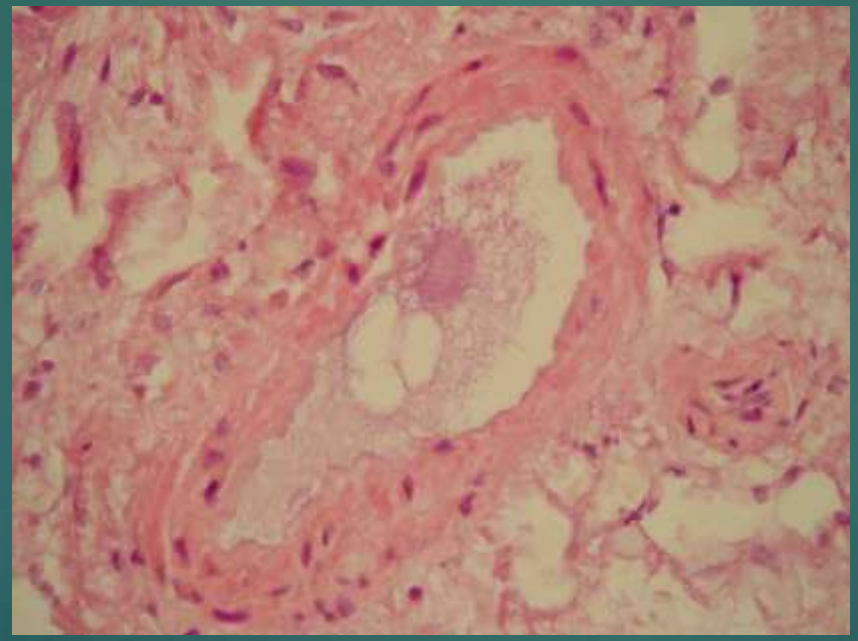
DVT



Pulmonary embolism, gross;

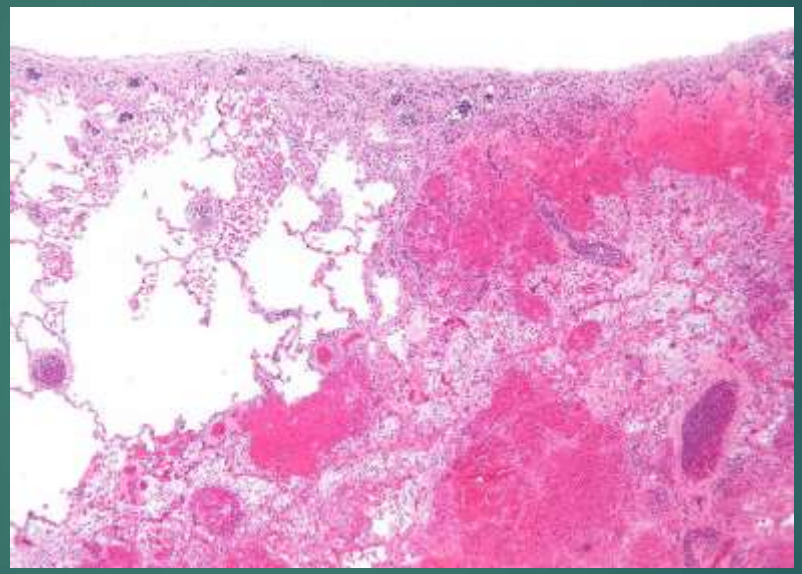
A Saddle embolus that bridges the pulmonary artery trunk as it divides into right and left main pulmonary arteries.

Fat Embolism



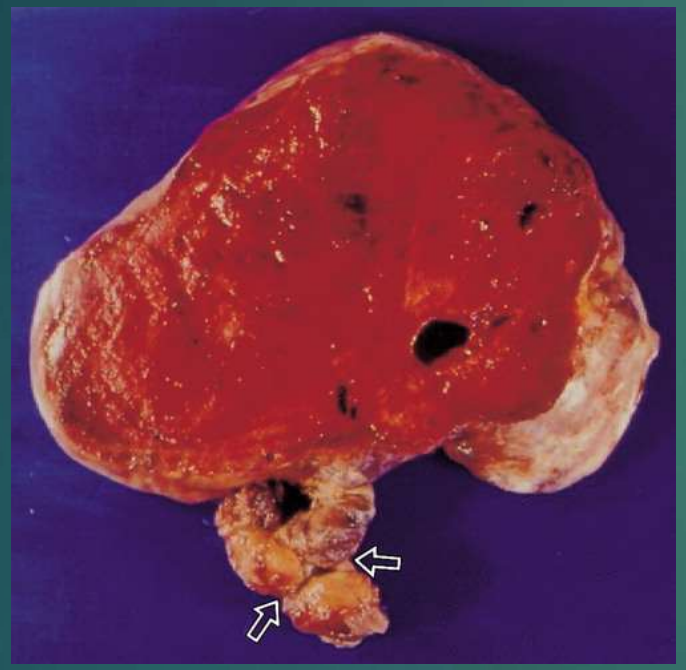
Red infarction

classic wedge-shaped infarct

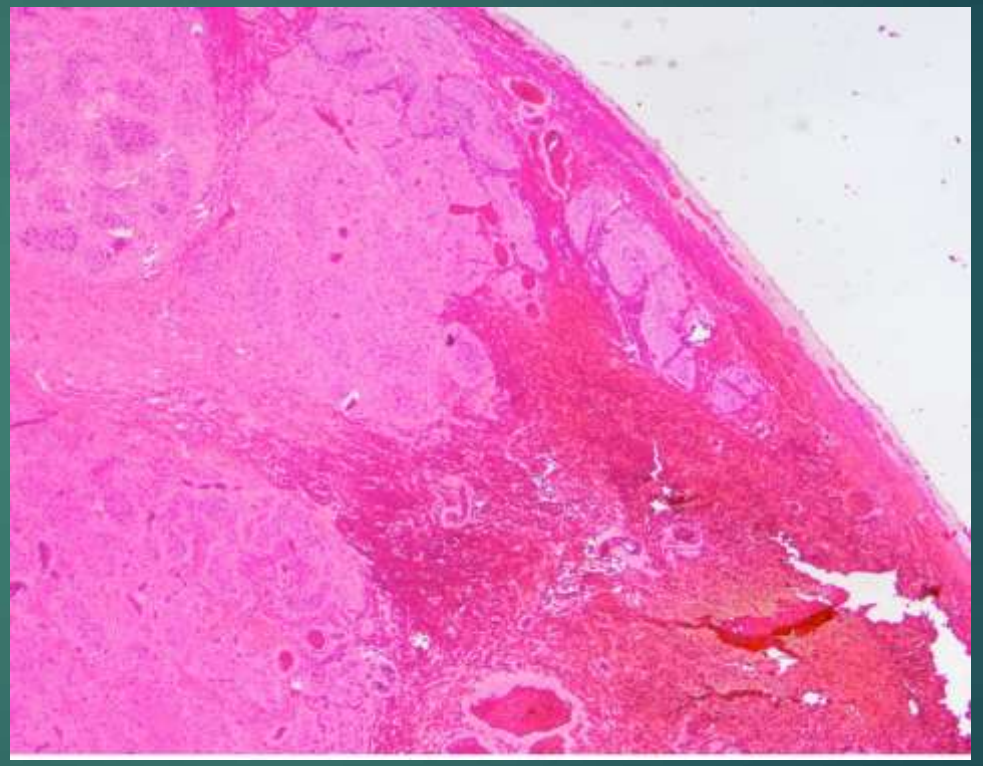


1.Necrosis of alveolar walls - loss of nuclei.
2.Alveolar hemorrhage.

Red infarction



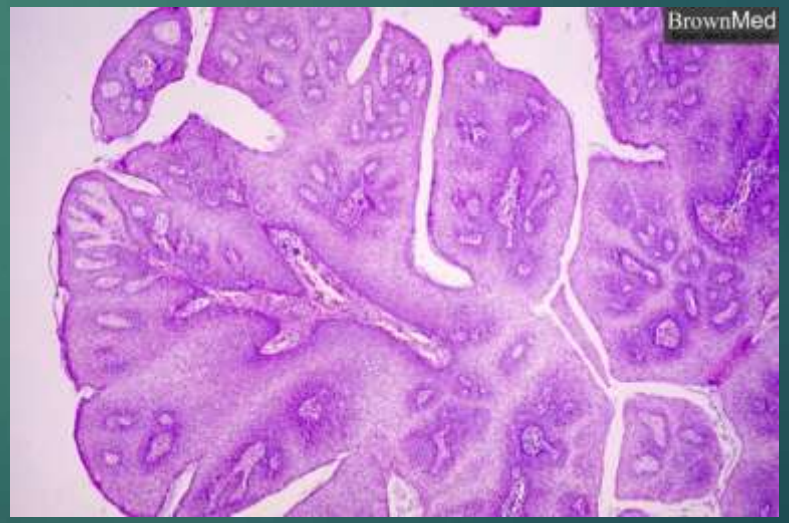
dark brown, ovarian mass with a twisted, thickened left fallopian tube (arrows).



Hemorrhage and necrosis

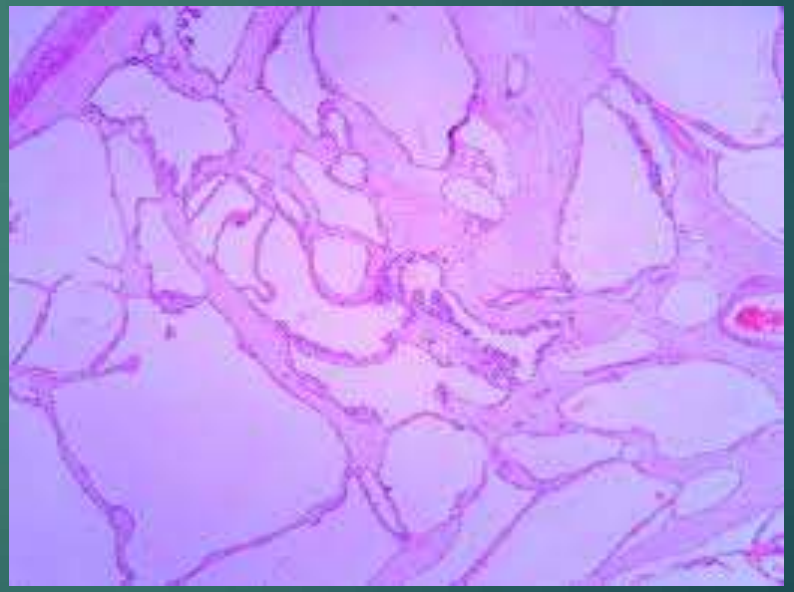
white infarction

Papillomas

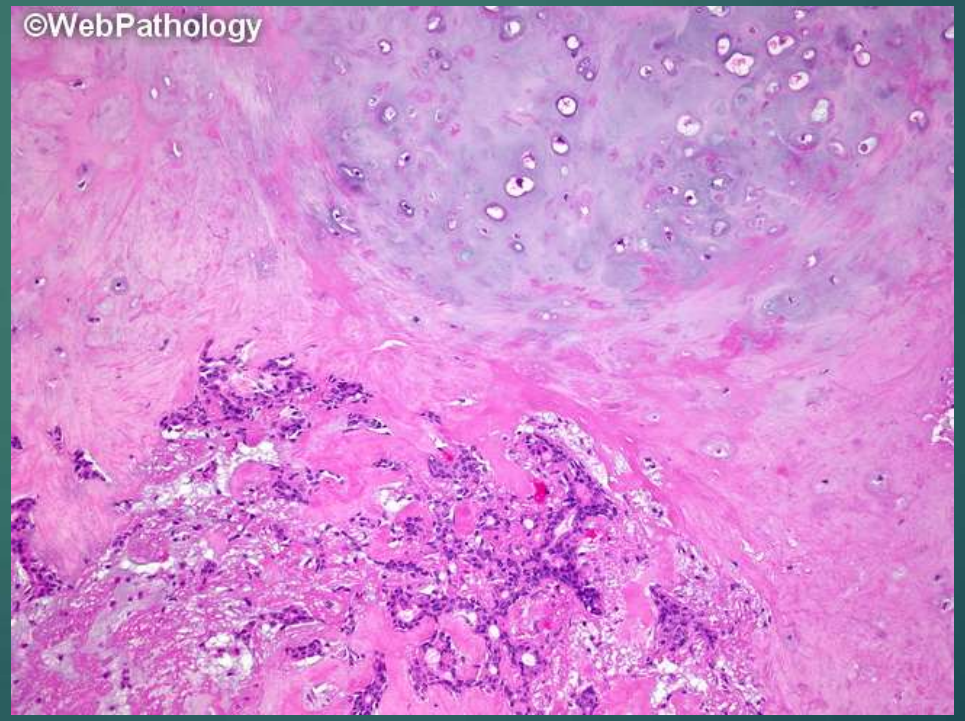


GASTROINTESTINAL POLYP

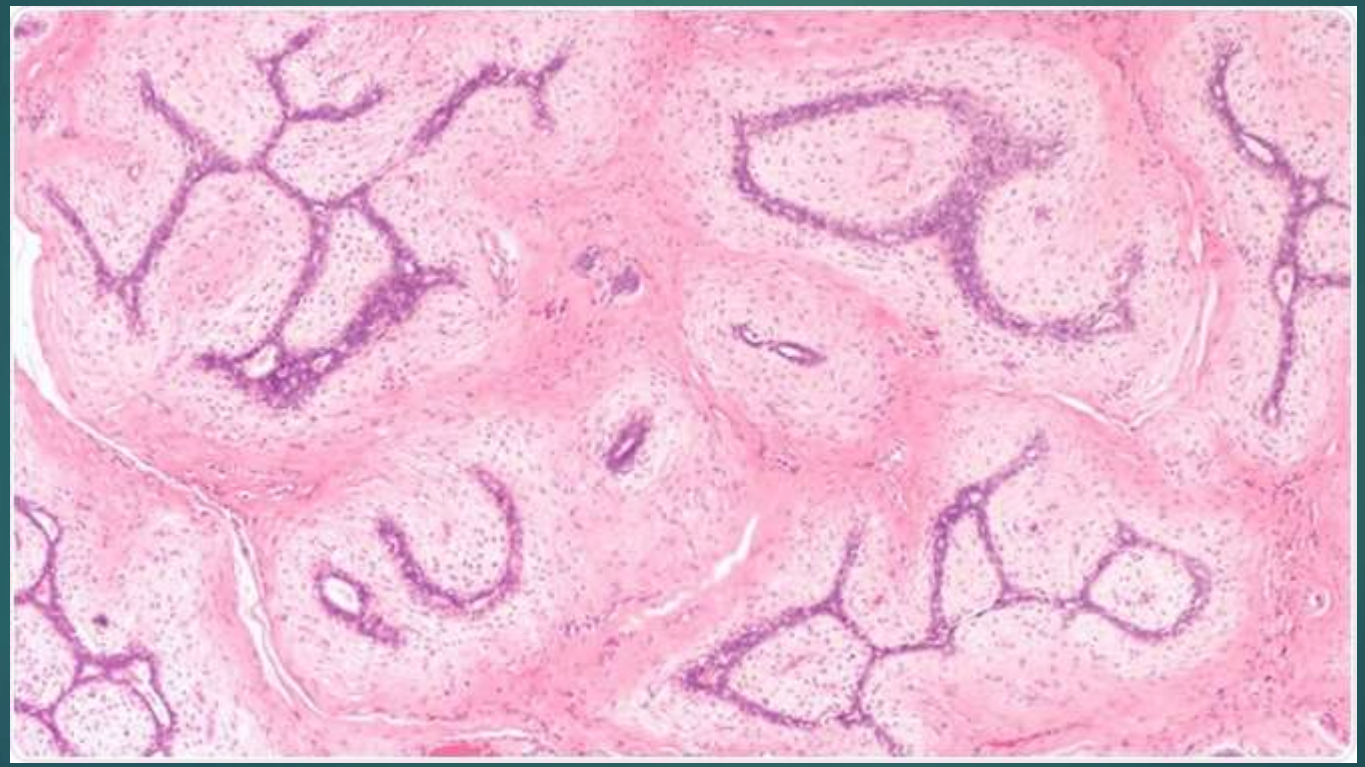
OVARIAN CYSTADENOMA



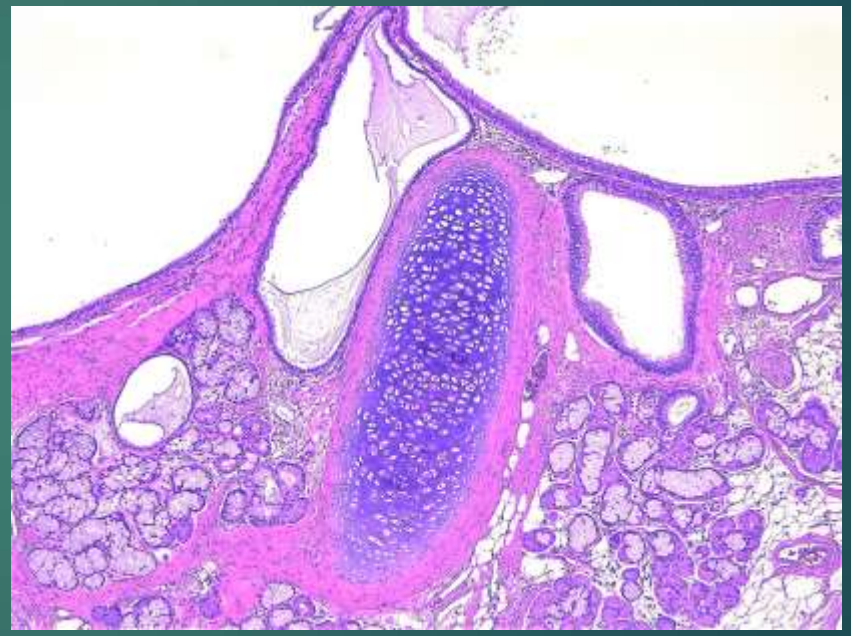
pleomorphic adenoma
It contain epithelial components with islands of cartilage or bone

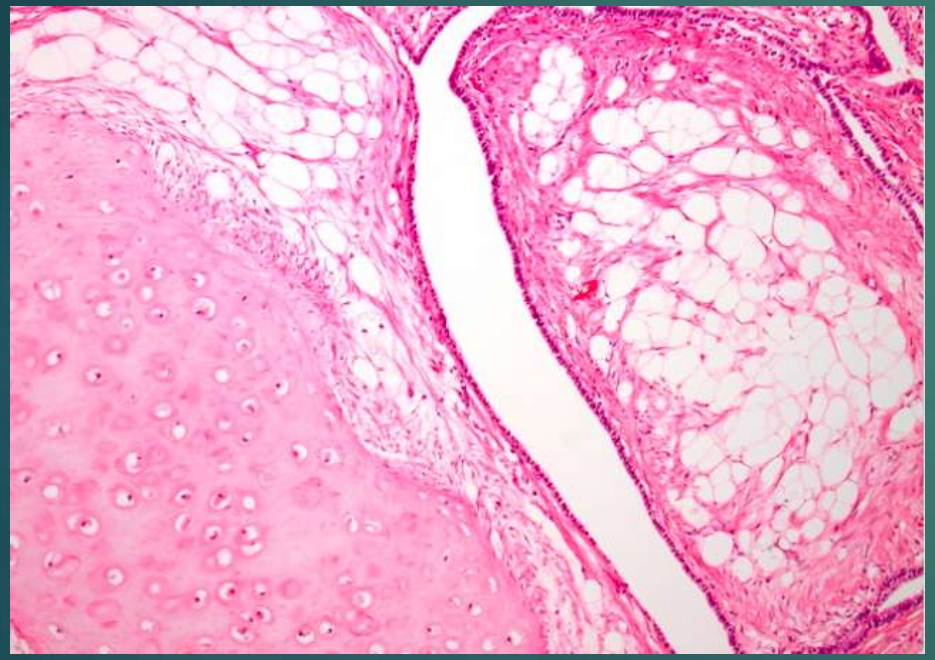


Fibroadenoma of the female breast contain: proliferating ductal elements (adenoma) embedded in loose fibrous tissue

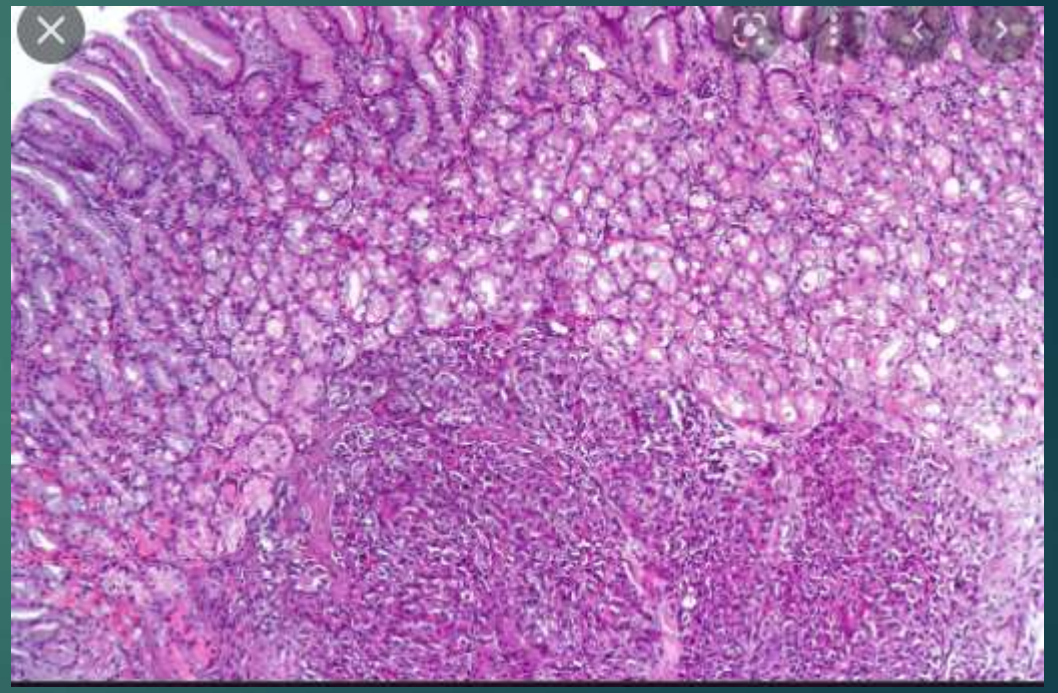


Teratoma



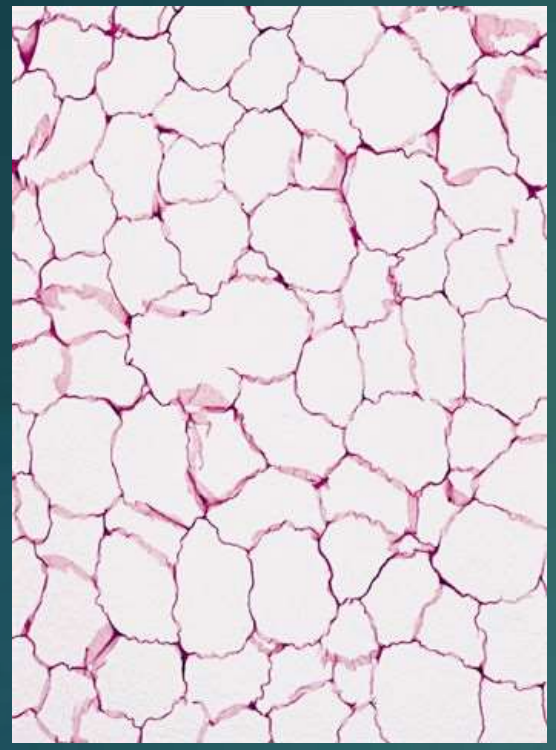


Hamartoma:

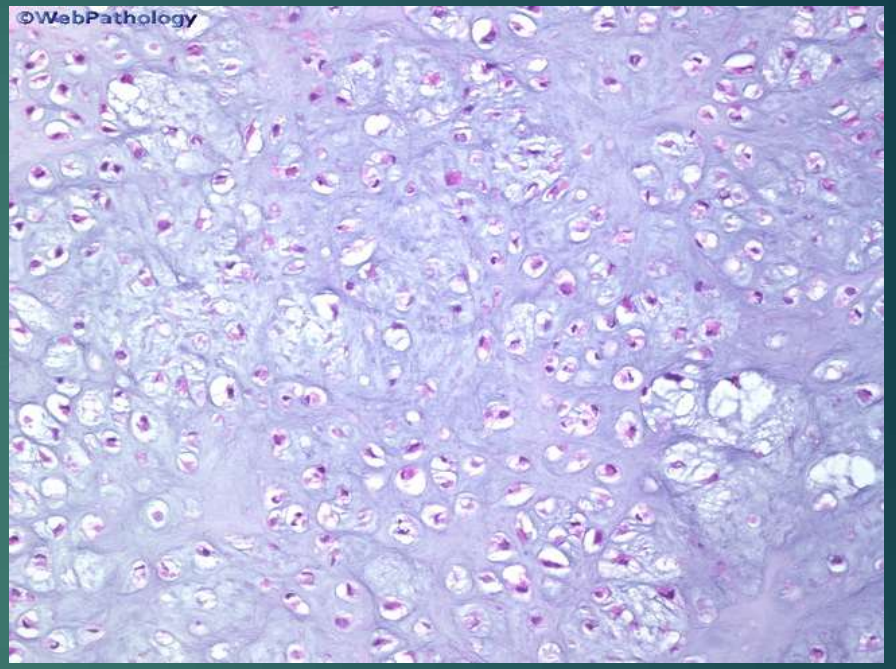


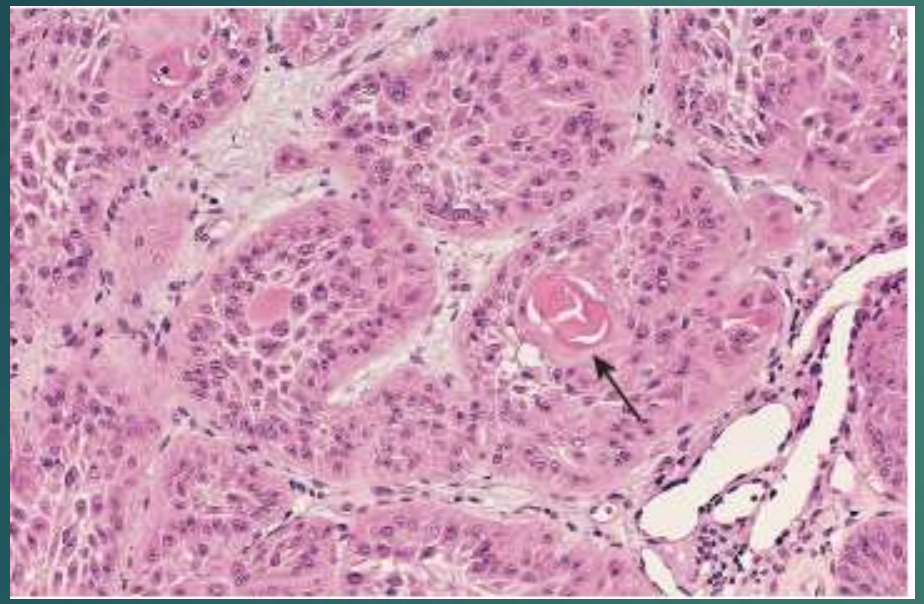
Choristoma:

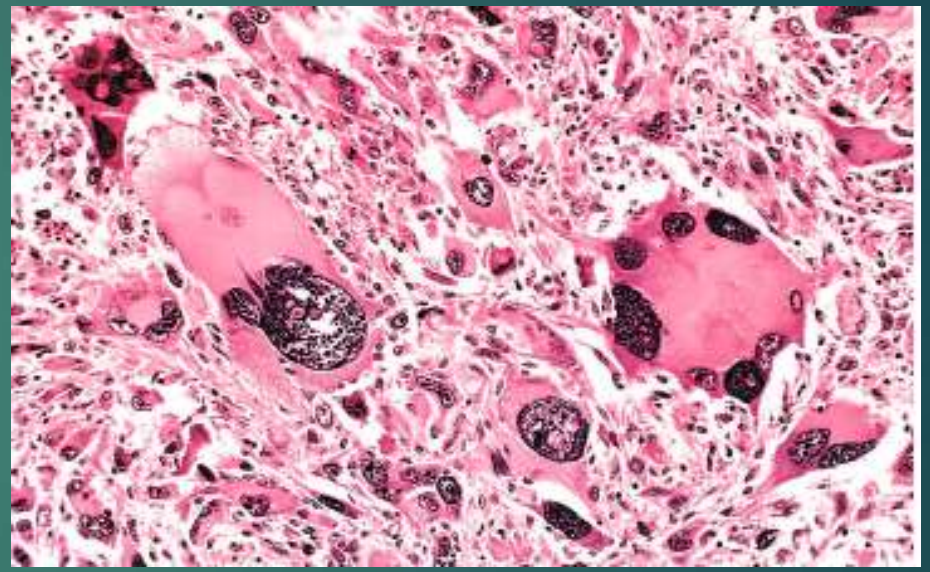
LIPOMA



chondroma

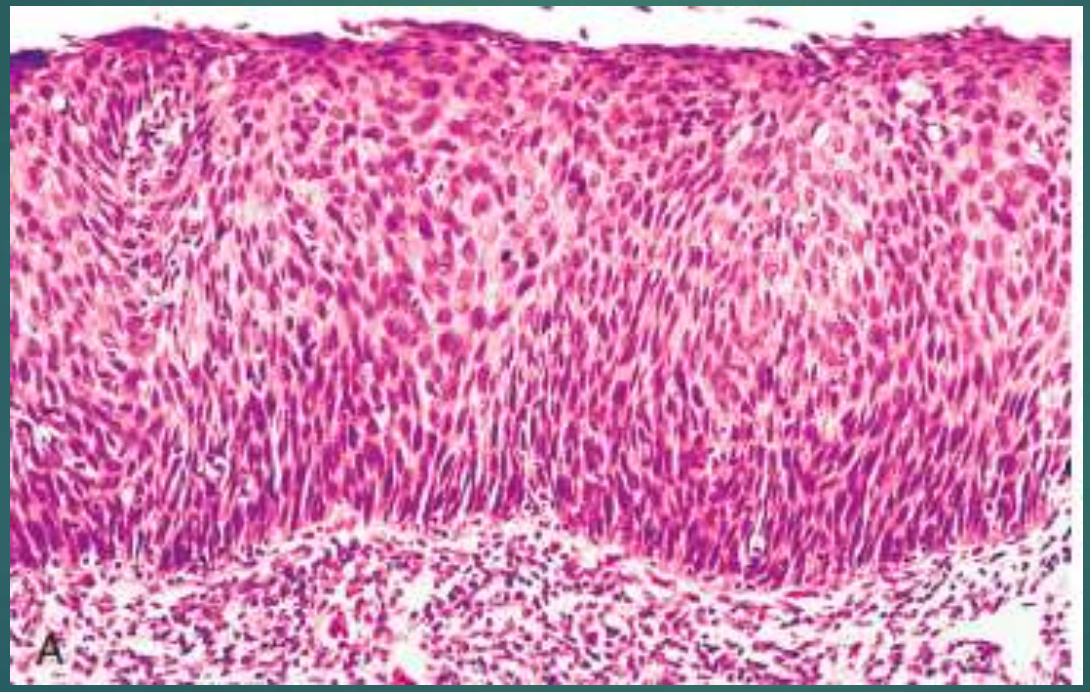




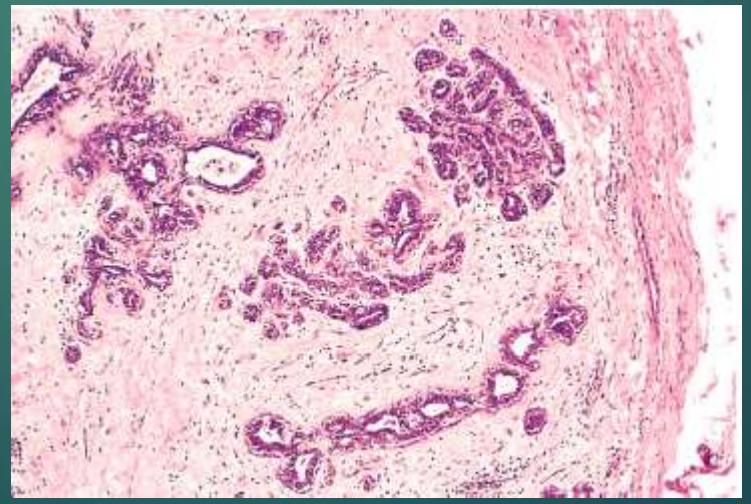


Well-differentiated squamous cell carcinoma Pleomorphic malignant tumor

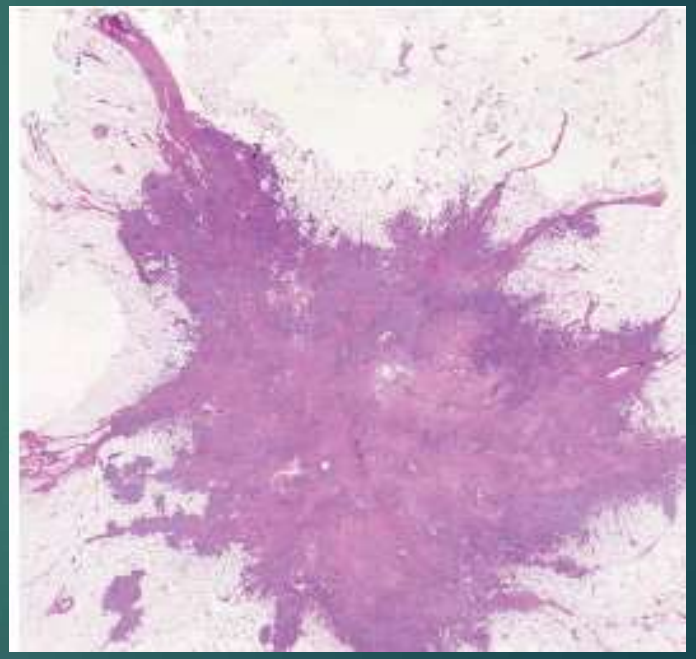
CARCINOMA IN-SITU



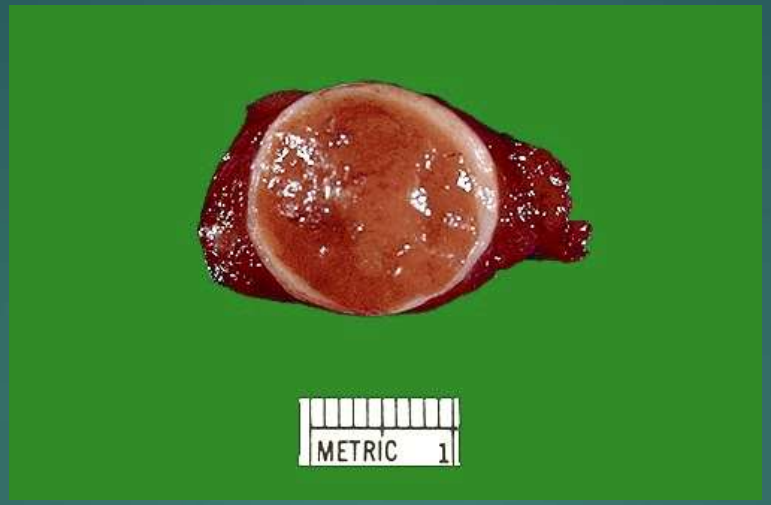
FIBROADENOMA

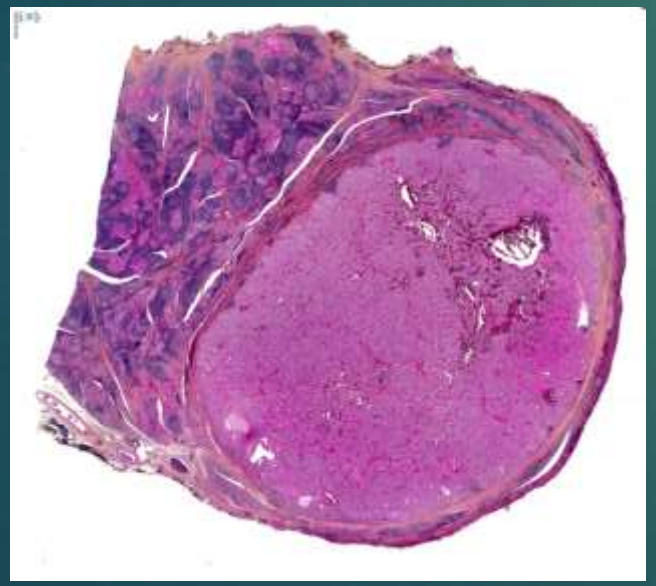


BREAST CANCER

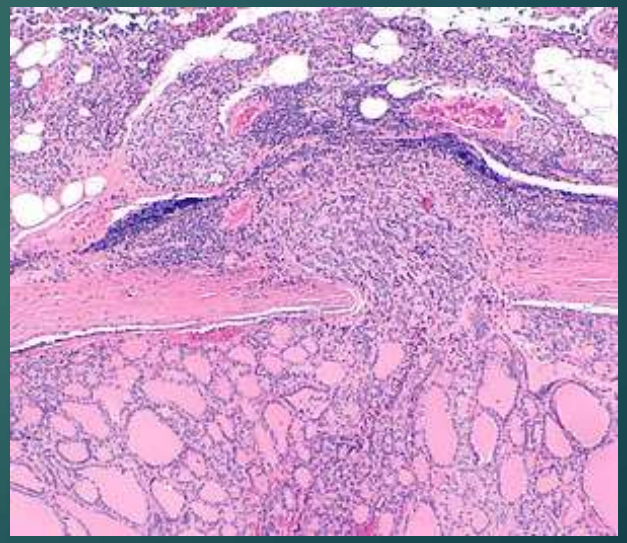


Thyroid nodule





Follicular adenoma



Follicular carcinoma

MULTIFOCAL HEPATIC METASTSIS

Seeding of ovarian cancer in peritoneal surface.