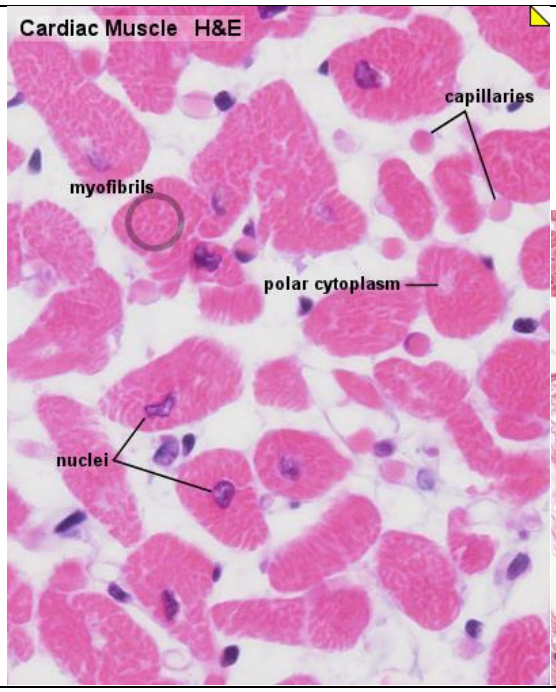
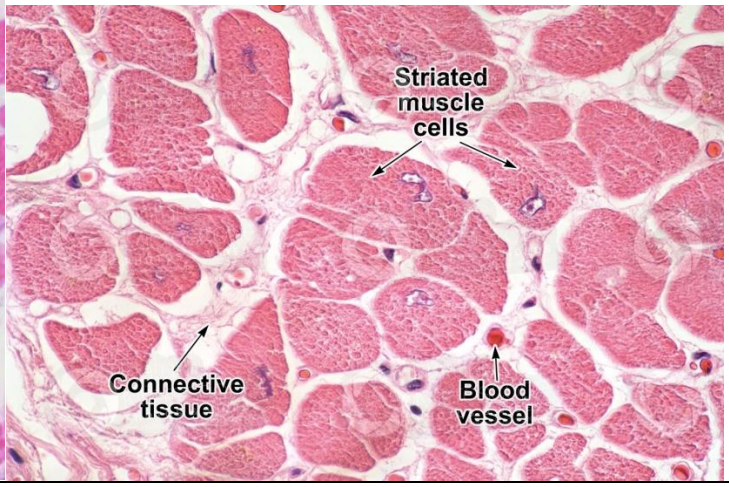
Organ: Heart

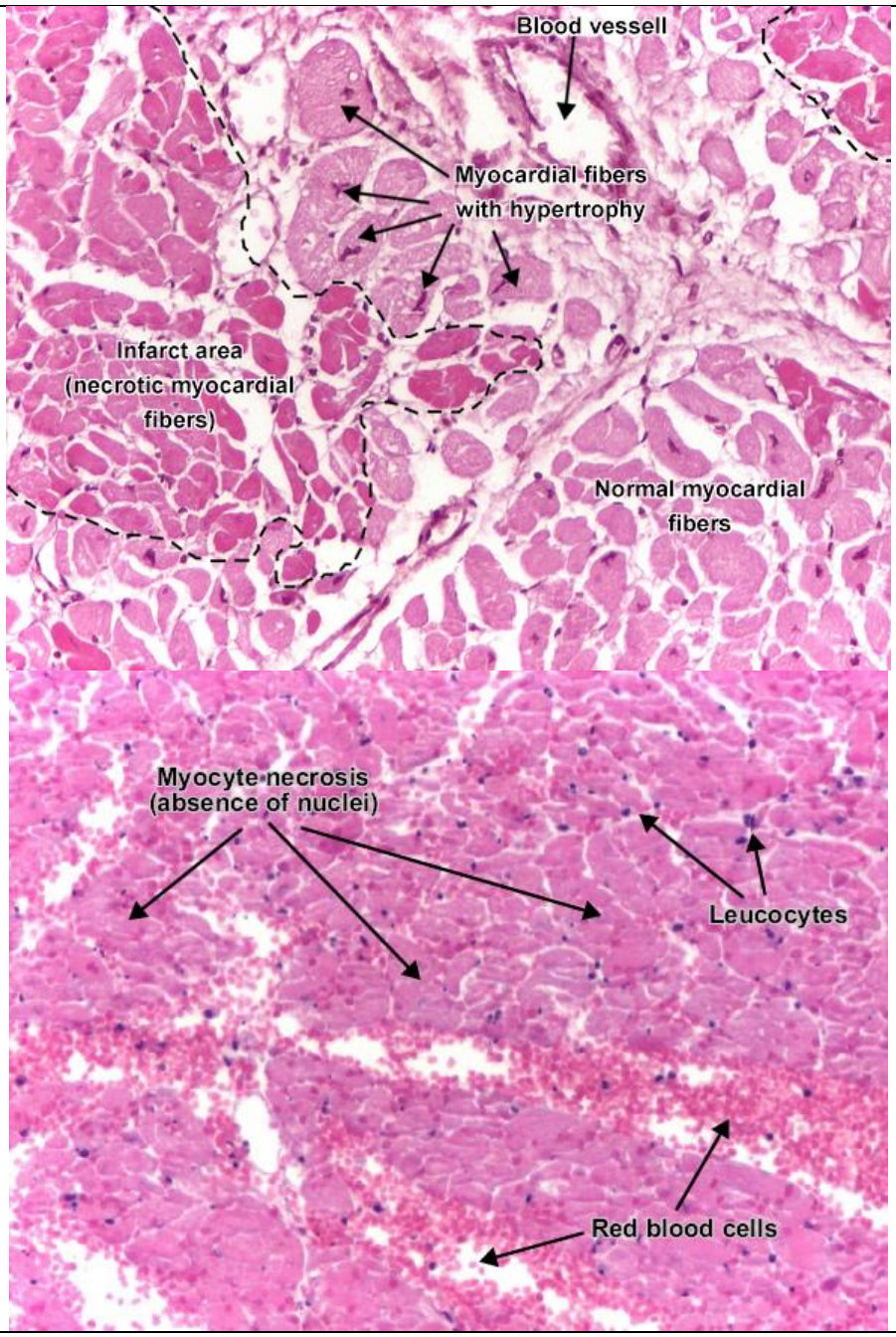
Lesion: The section shows, Cytologic change in all infarcts is coagulative necrosis of the affected area of tissue. Some amount of hemorrhage is generally present in any infarct. Some myocardial fibers are still well defined, with intense eosinophilic (pink) cytoplasm, but another lost their transversal striations and the nucleus. Notice a few myocardial fibers showing hypertrophy. The periphery of an infarct area, inflammatory reaction is noted. Initially, neutrophils predominate but subsequently macrophages and fibroblasts appear and finally become fibrous scar tissue.

Diagnosis: Myocardial infarction

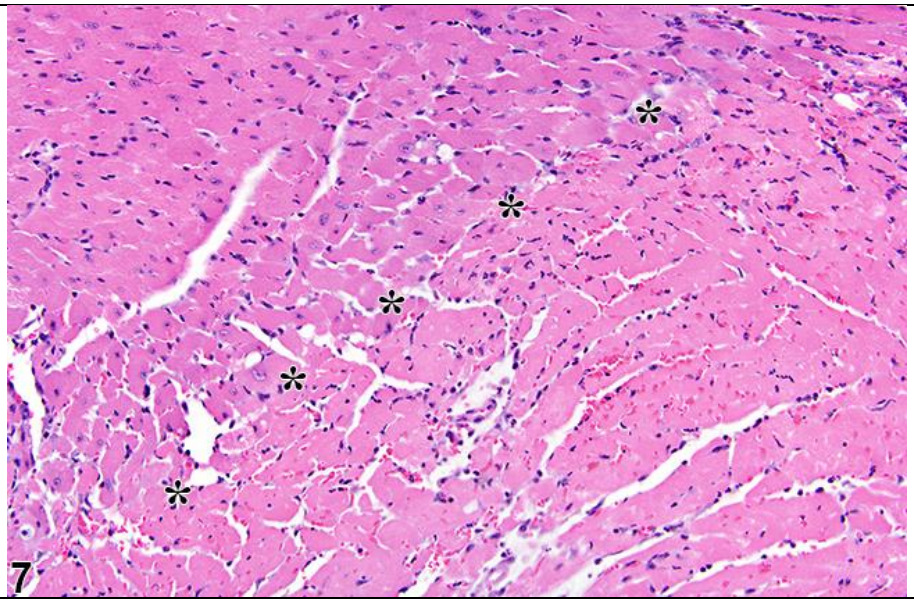




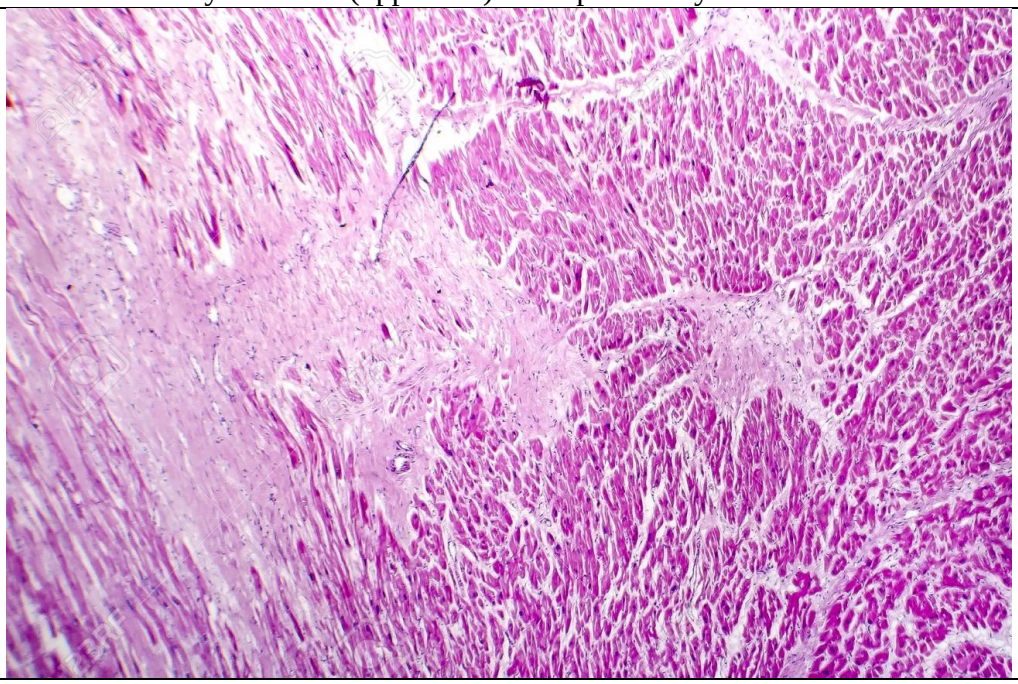
Normal heart muscle



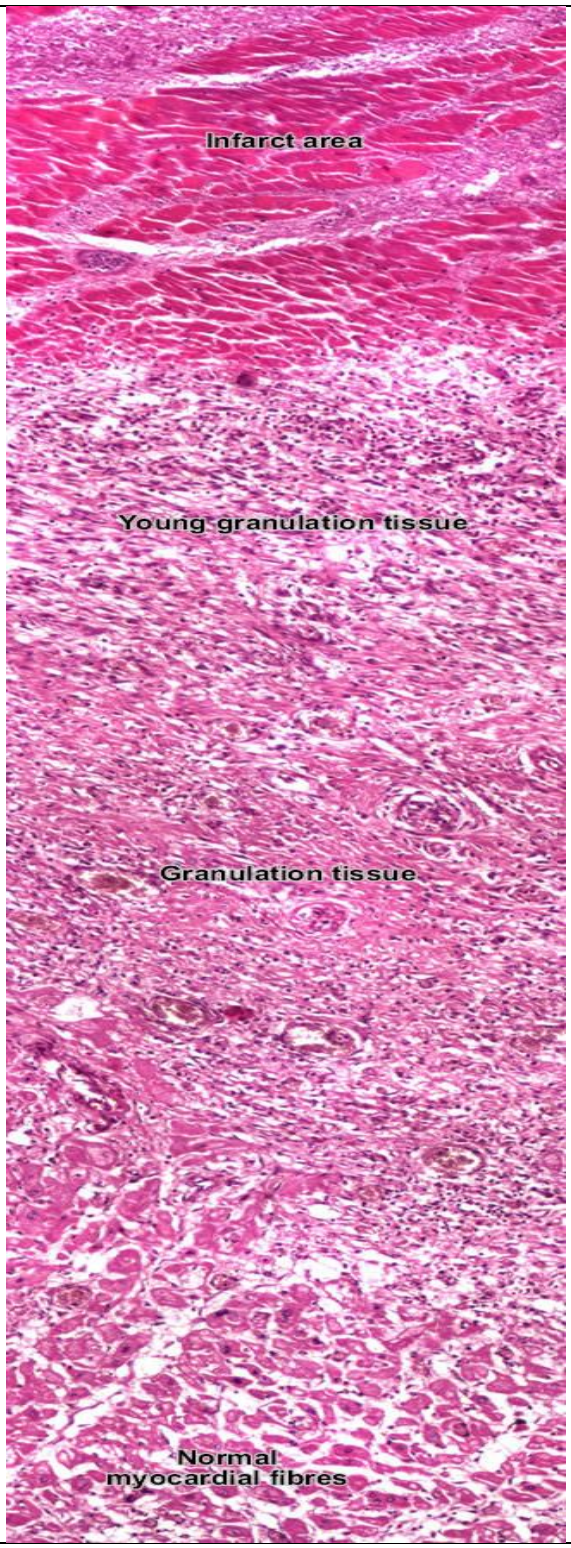
myocardial infarct: myocardial fibers are still well delineated, with intense eosinophilic (pink) cytoplasm, but lost their transversal striations and the nucleus. The interstitial space may be infiltrated with red blood cells. Make the distinction between interstitial leucocytes (small, outside the myocardial fibers) and the myocardial nucleus



Heart, Myocardium – Necrosis: The pale, necrotic area (infarct) at the lower right and the normal myocardium (upper left) are separated by asterisks.



Acute myocardial infarction

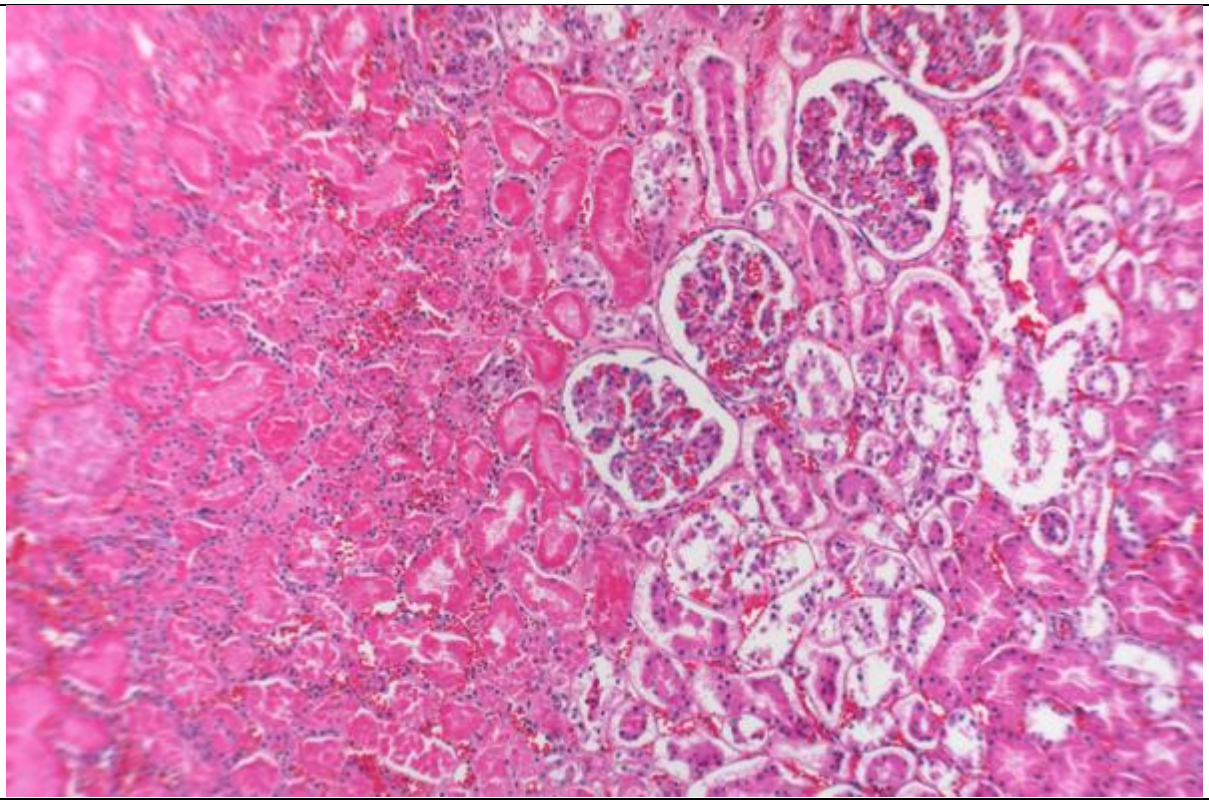


In area of coagulative ischemic necrosis, myocardial fibers preserve their contour, but the cytoplasm is intensely eosinophilic and transversal striations and nuclei are lost. The interstitium of the infarcted area is initially infiltrated with neutrophils, then with lymphocytes and macrophages, in order to phagocyte the myocyte debris. The necrotic area is surrounded and progressively invaded by granulation tissue

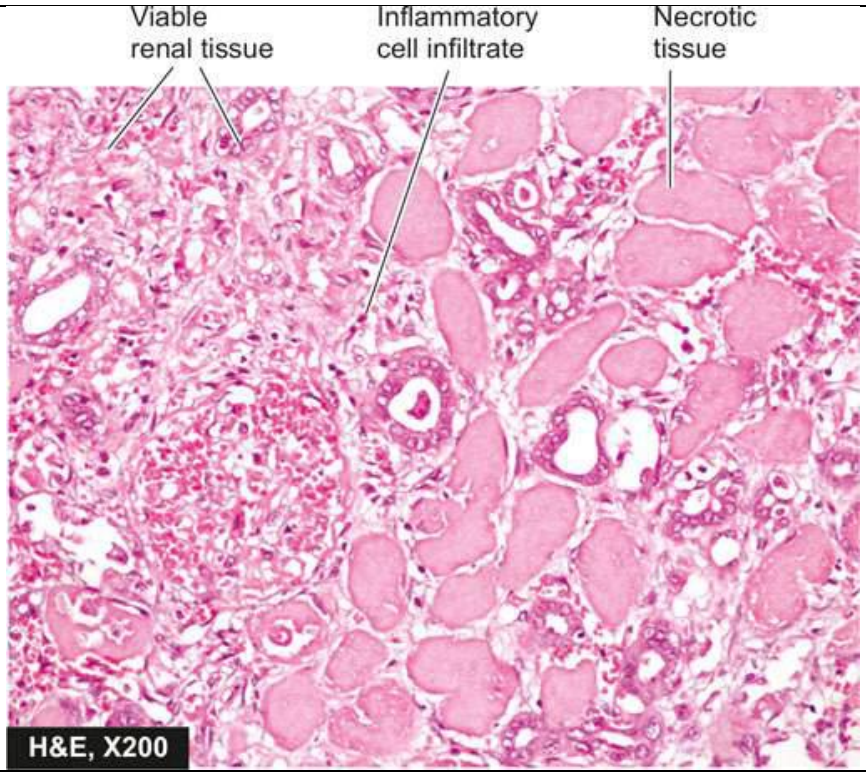
Organ: kidney

Lesion: The section shows, coagulative necrosis of renal parenchyma, and ghosts of renal tubules and glomeruli without intact nuclei and cytoplasmic content. The margin of the infarct shows inflammatory reaction—initially acute but later macrophages and fibrous tissue predominate.

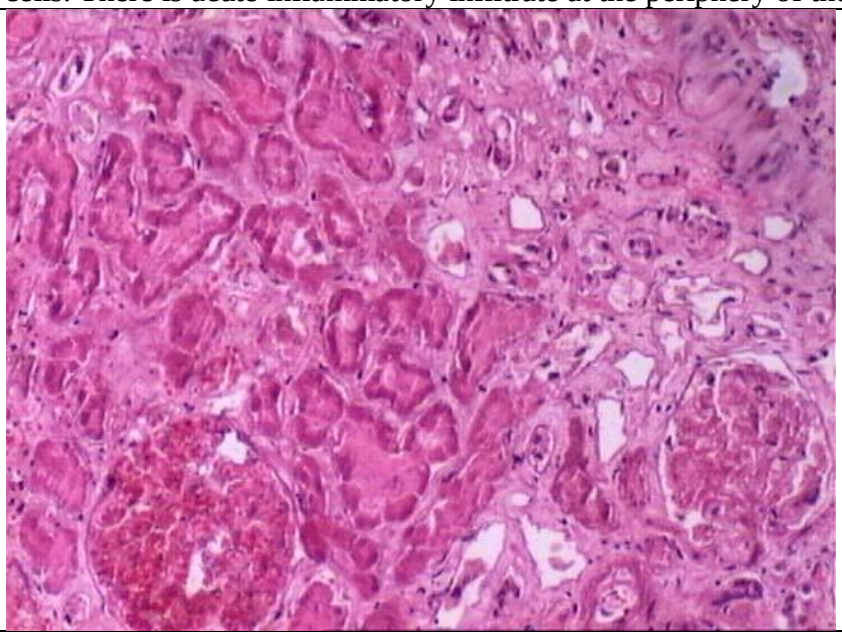
Diagnosis: Kidney infarction



renal infarct with coagulation on the left and viable renal tissue on the right. Acute inflammatory cells are present at the margin.



Renal infarct. Renal tubules and glomeruli show typical coagulative necrosis i.e. intact outlines of necrosis cells. There is acute inflammatory infiltrate at the periphery of the infarct.

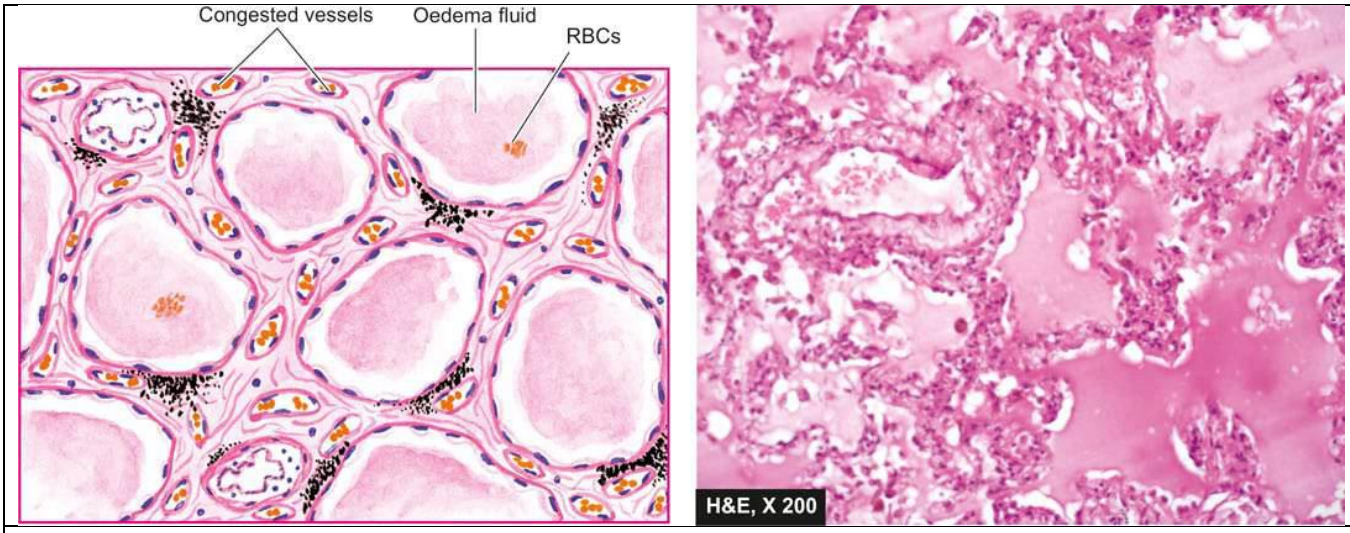


Renal infarction with coagulative necrosis. Note the renal tubules and glomeruli are deeply acidophilic stained.

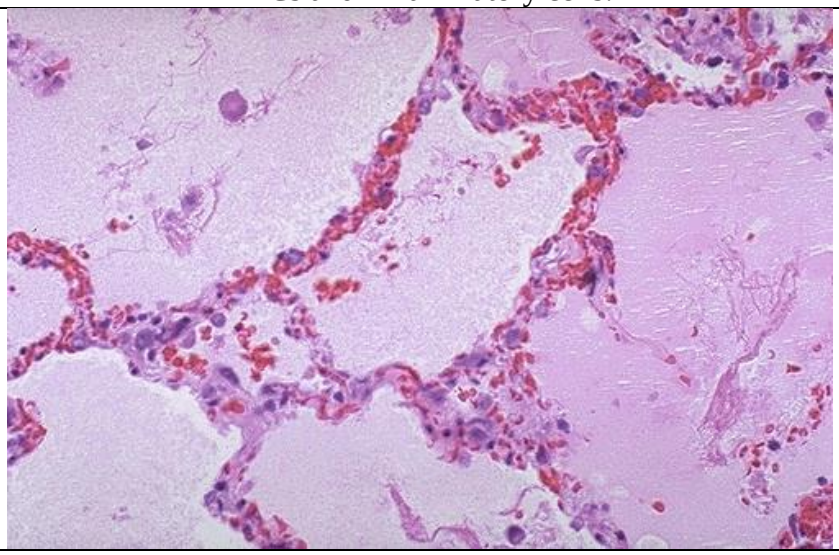
Organ: Lung

Lesion: The section shows, the alveolar capillaries are congested. The excess fluid collects in the interstitial lung spaces in the septal walls (interstitial oedema), and later, the fluid fills the alveolar spaces (alveolar oedema). The Oedema fluid appears as eosinophilic, granular and pink proteinaceous material with some RBC and alveolar macrophage.

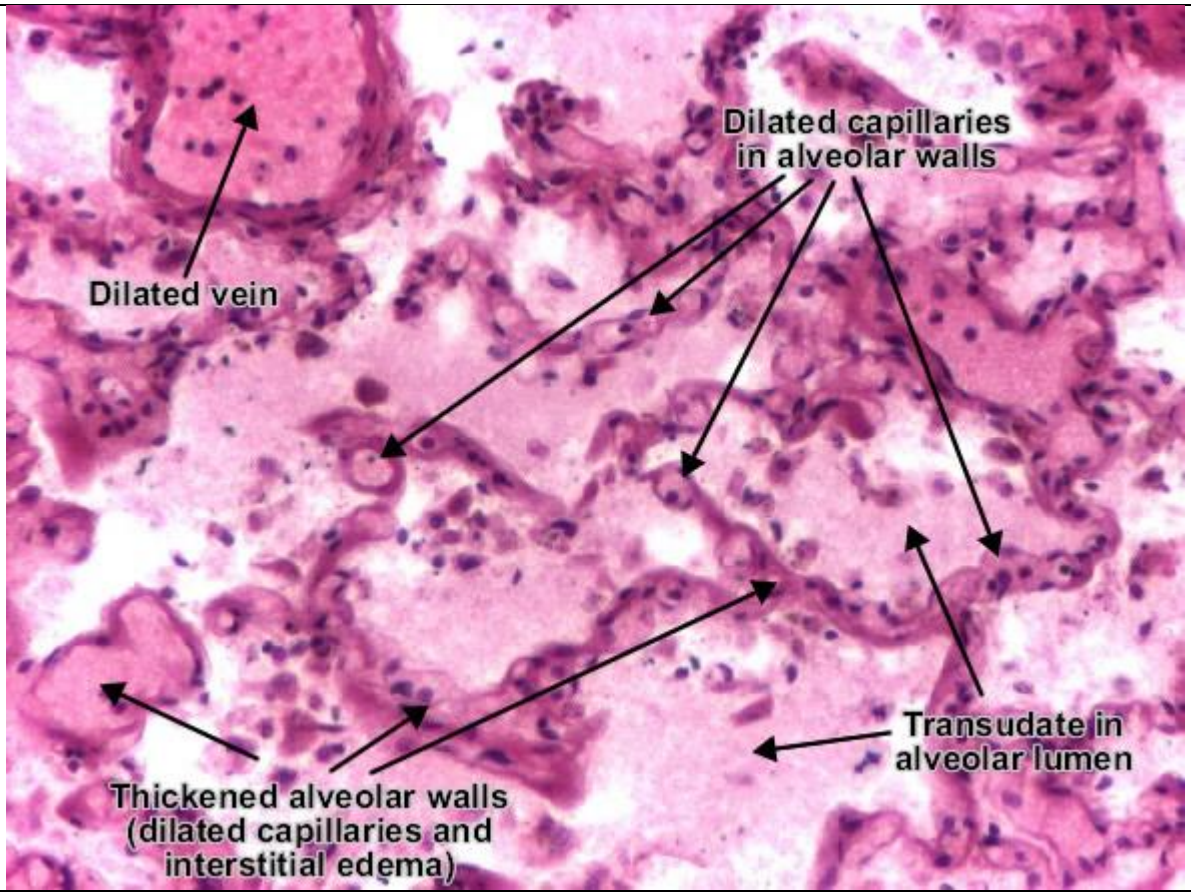
Diagnosis: pulmonary oedema



Pulmonary oedema. The alveolar capillaries are congested. The alveolar spaces as well as interstitium contain eosinophilic, granular, homogeneous and pink proteinaceous oedema fluid along with some RBCs and inflammatory cells.



the alveoli in this lung are filled with a smooth to slightly floccular pink material characteristic for pulmonary edema. Note also that the capillaries in the alveolar walls are congested with many red blood cells.

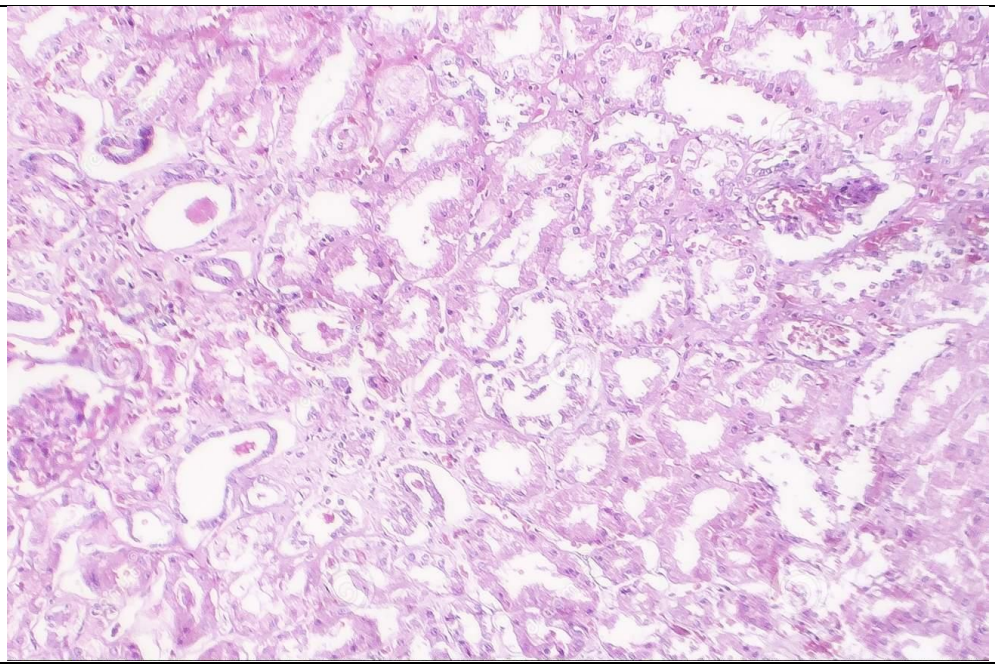


pulmonary edema. Alveolar walls are thickened due to acute distention of capillaries and interstitial edema. Alveolar lumen is filled with transudate (pale-eosinophilic, finely granular), a liquid which replaces the air.

Organ: kidney

Lesion: The section shows, the oedema fluid may appear homogeneous, pale, eosinophilic, or may be deeply eosinophilic (depend on amount of protein) and granular in inside tubule. The space between the tubules enlarged and filled with fluid (pink color). Atrophy of the parenchymatous cells and fibrosis occur in the area, if the edematous fluid persists for a long period of time.

Diagnosis: kidney tubule oedema



Tubular epithelial edema