

Disturbances of cell metabolism

Assist. Prof.: Enas Sheet

Lecturer Dr.: Sanaria Hanna

Lecturer: Asseel Mohammed

Assist. Prof. Entisar Khazal

Assist. Lecturer: Atheer Nabeel

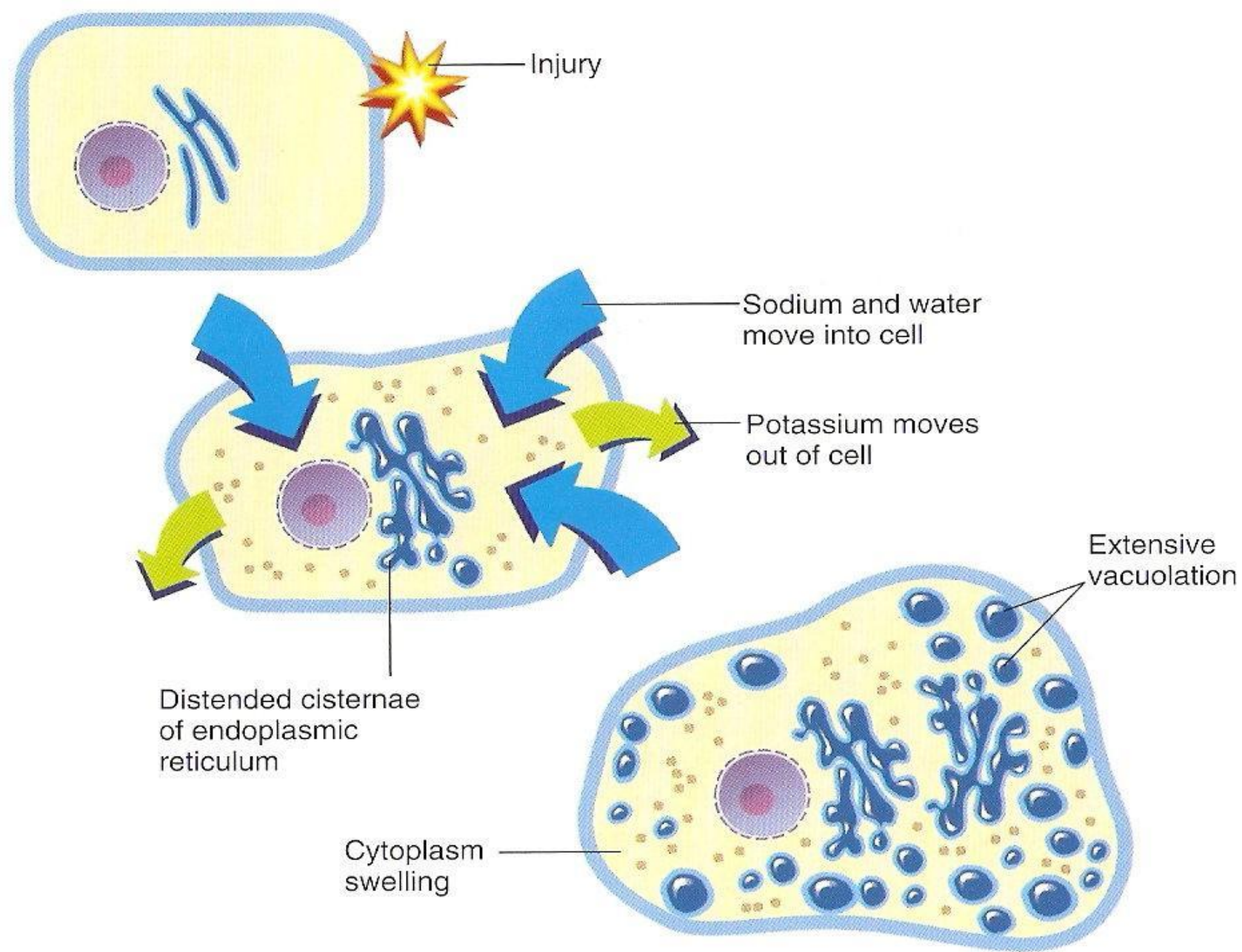
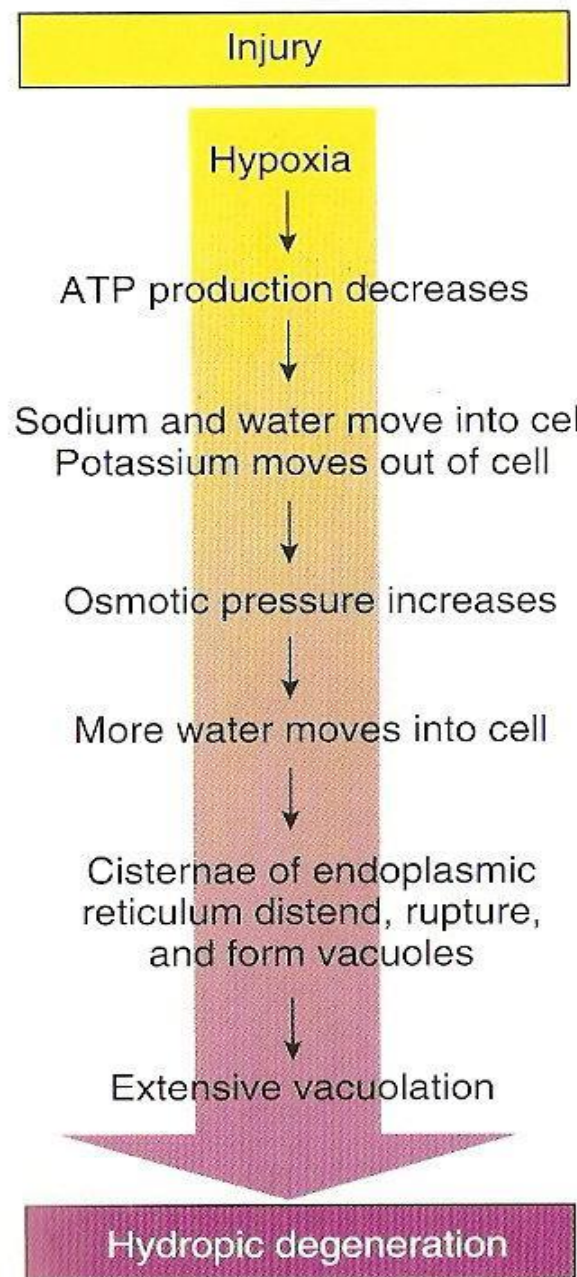


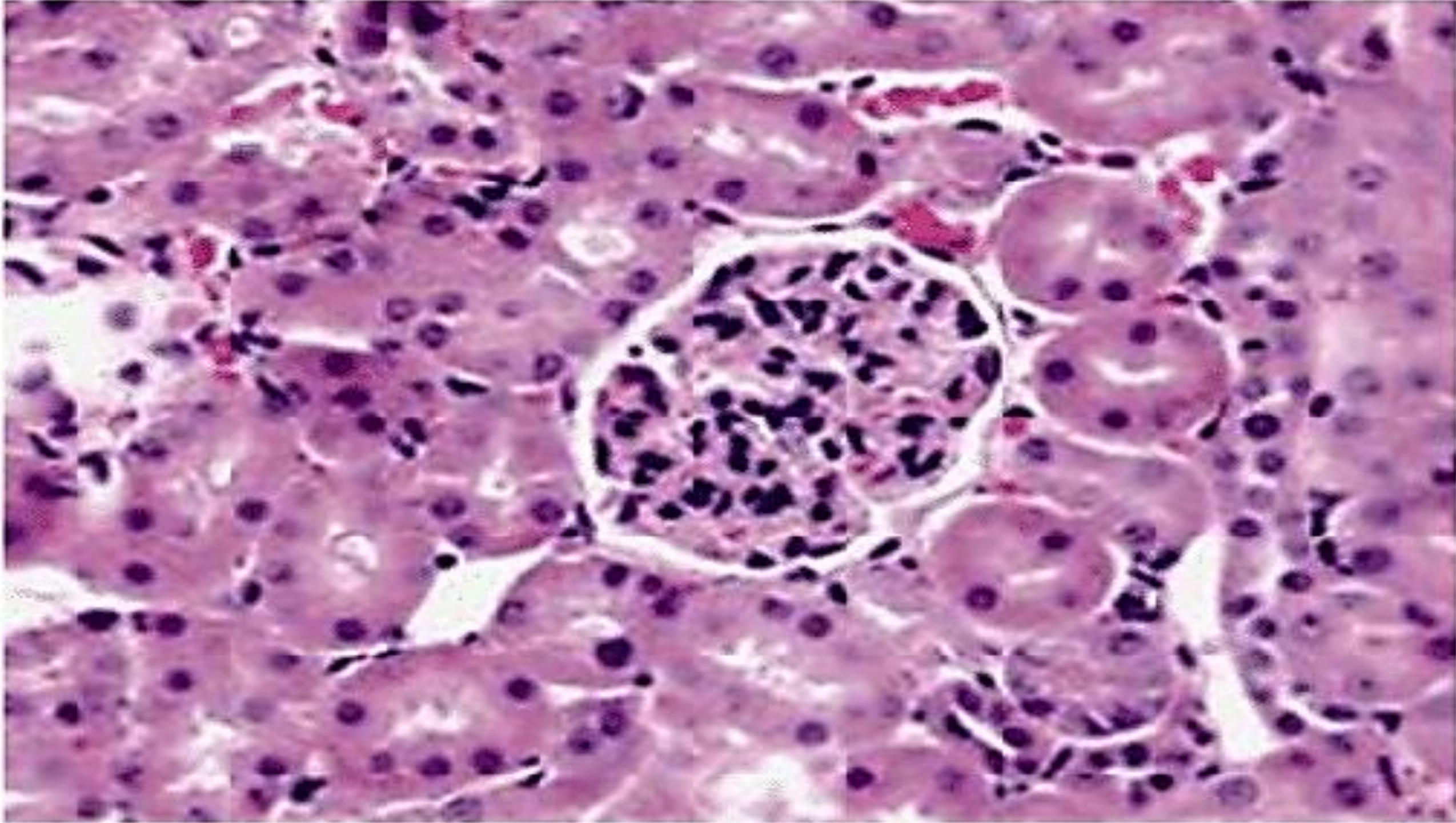
Fig. 1-9 The process of acute cell swelling (hydropic degeneration). ATP, Adenosine triphosphate. (From Huether S, McCance K: Understanding pathophysiology, ed 3, St Louis, 2004, Mosby.)

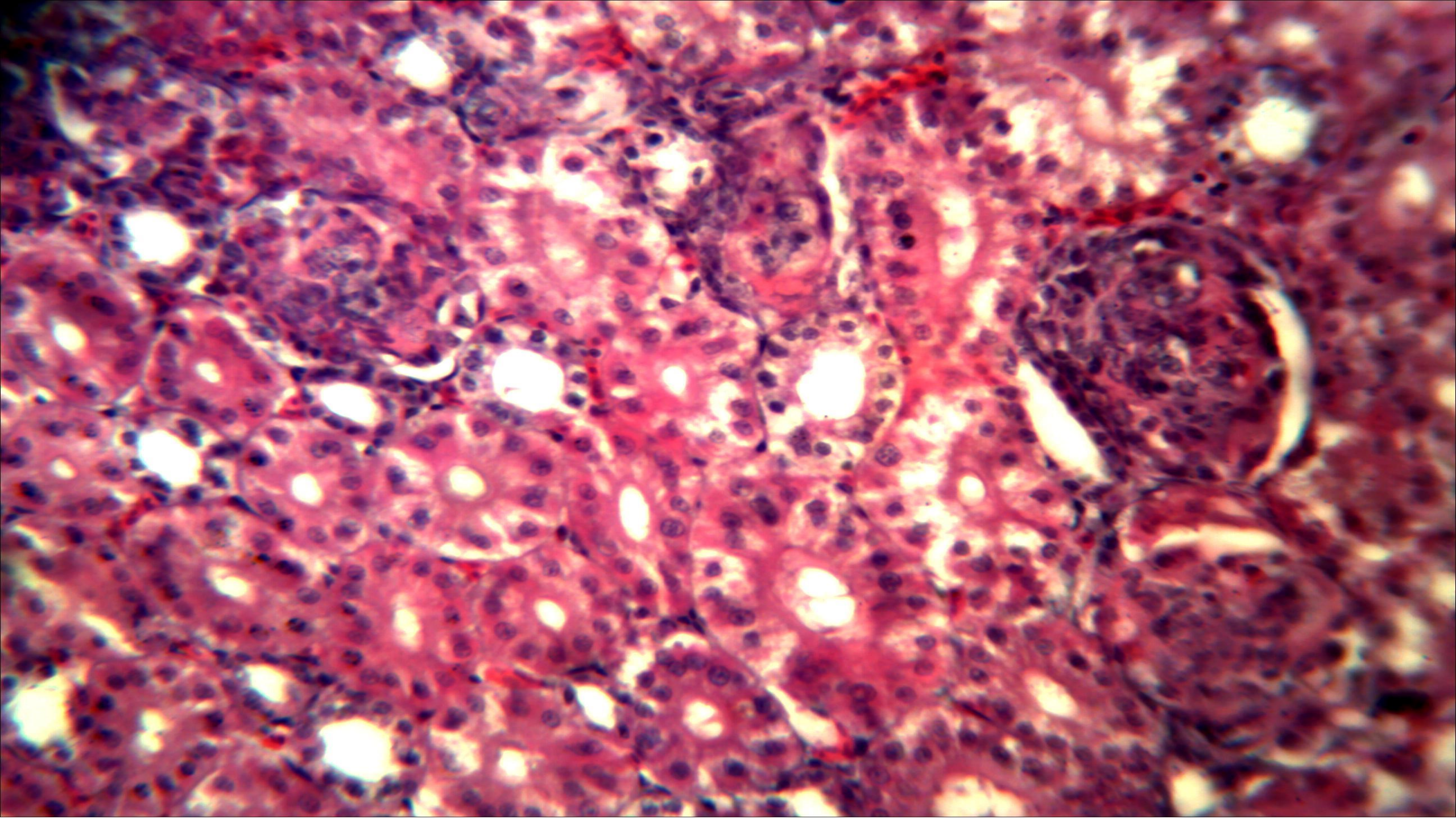
Diagnosis: Cell swelling

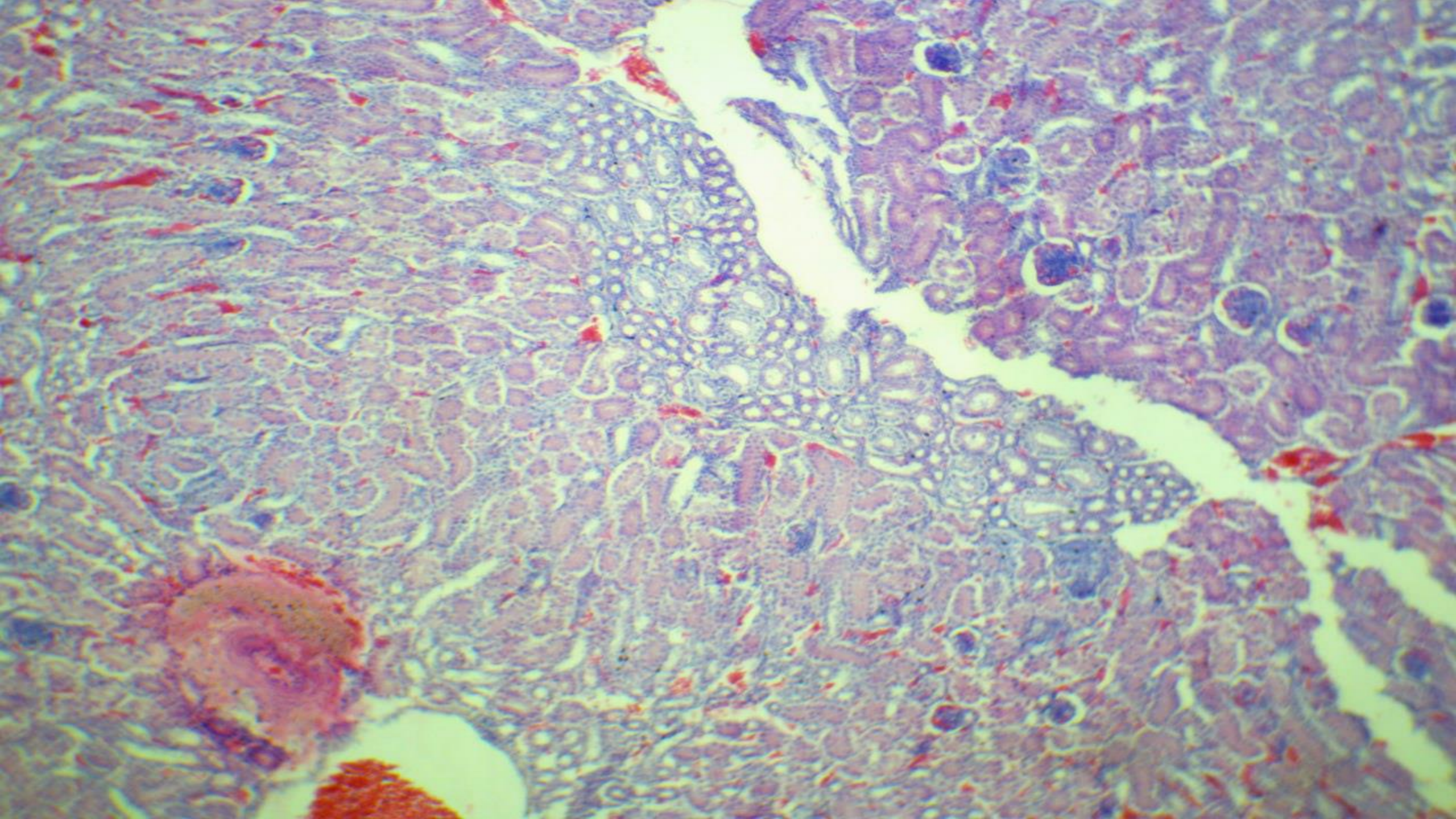
Organ: kidney

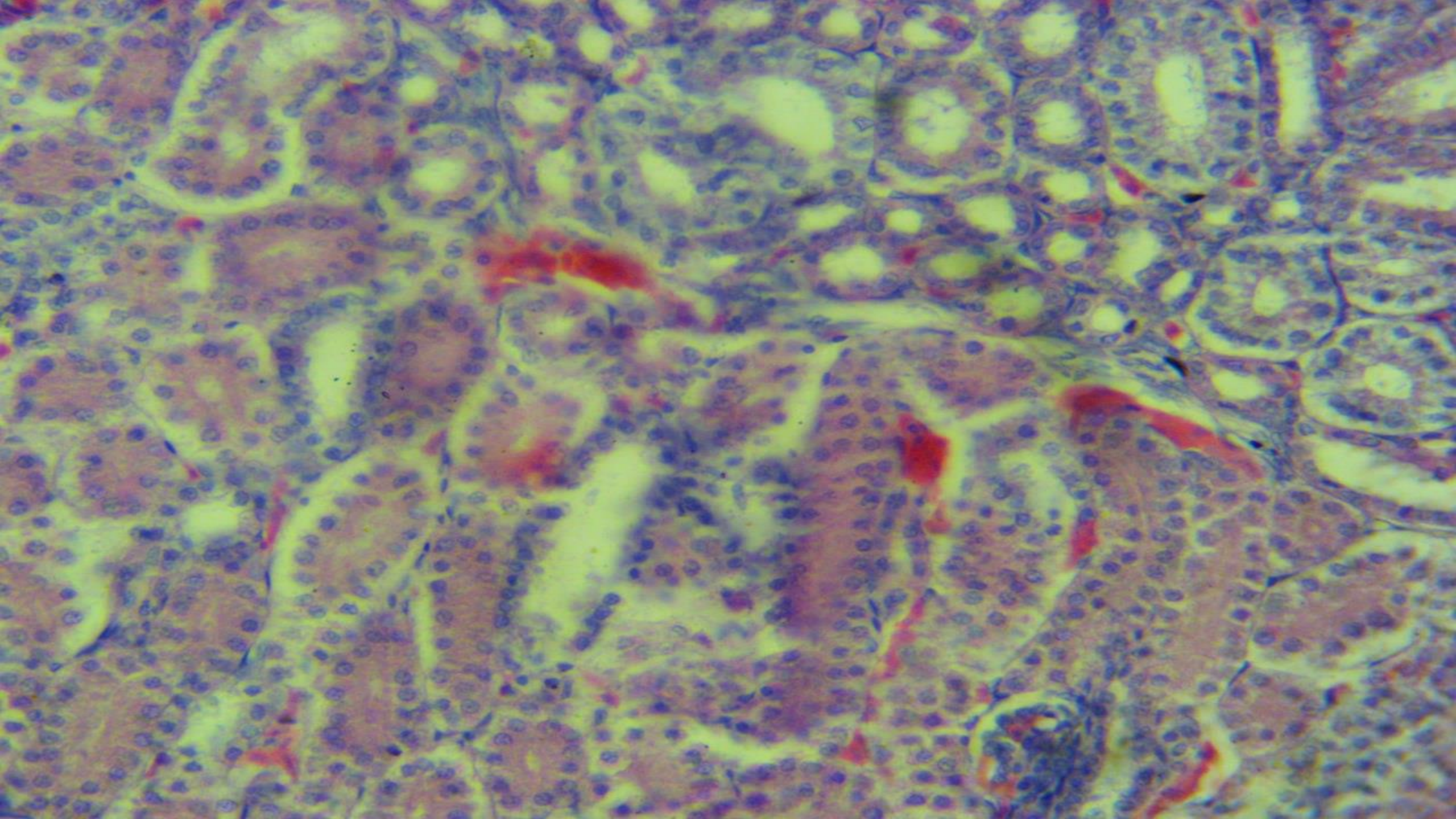
Lesions:

1. Swelling in the epithelial cells lining the renal tubules.
2. Eosinophilic granules are present in the affected cells & make the cytoplasmic more eosinophilic.
3. Stenosis of the tubular lumen & it appears as star shape.









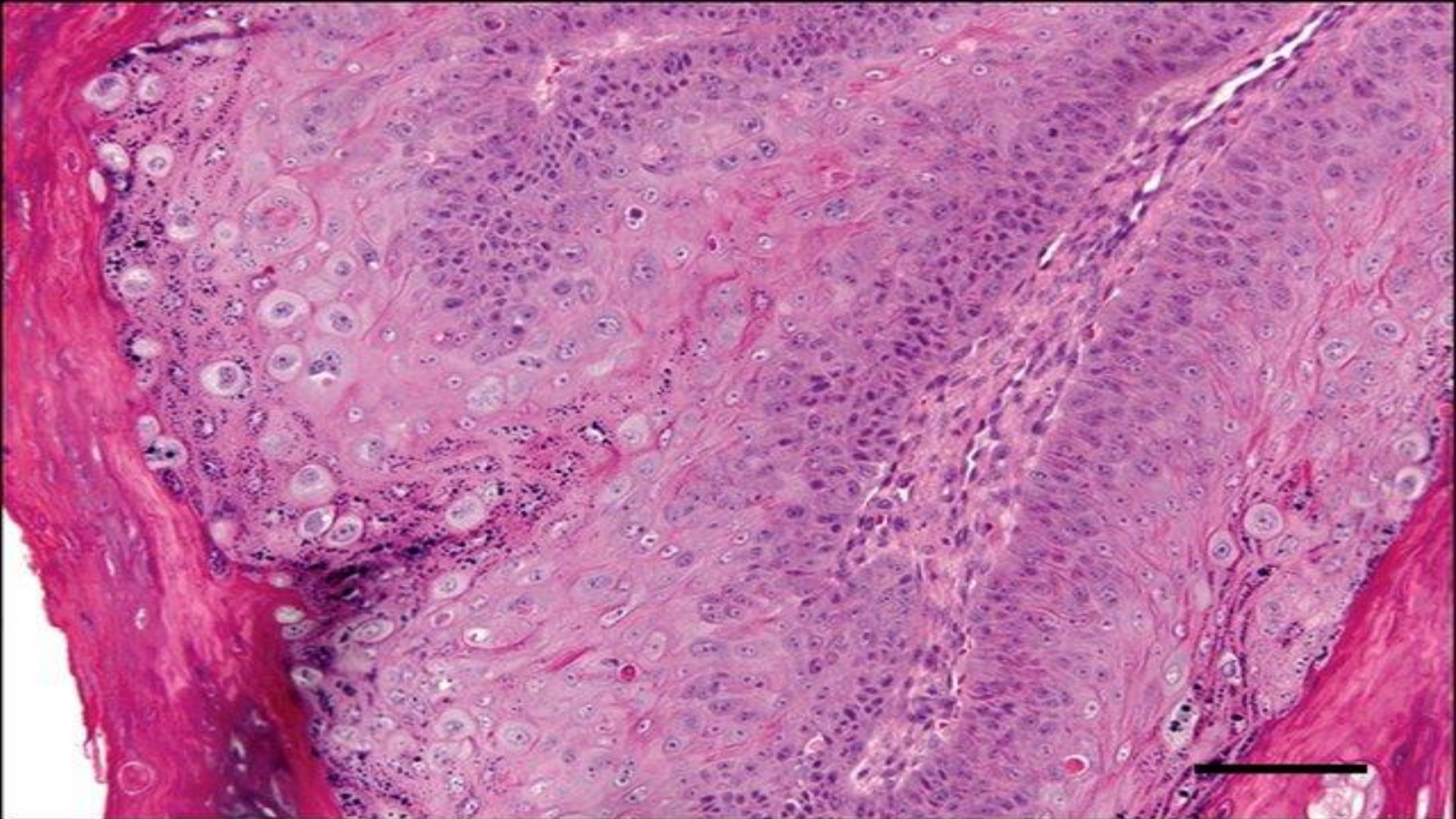
Diagnosis: Hydropic degeneration & keratohyaline degeneration

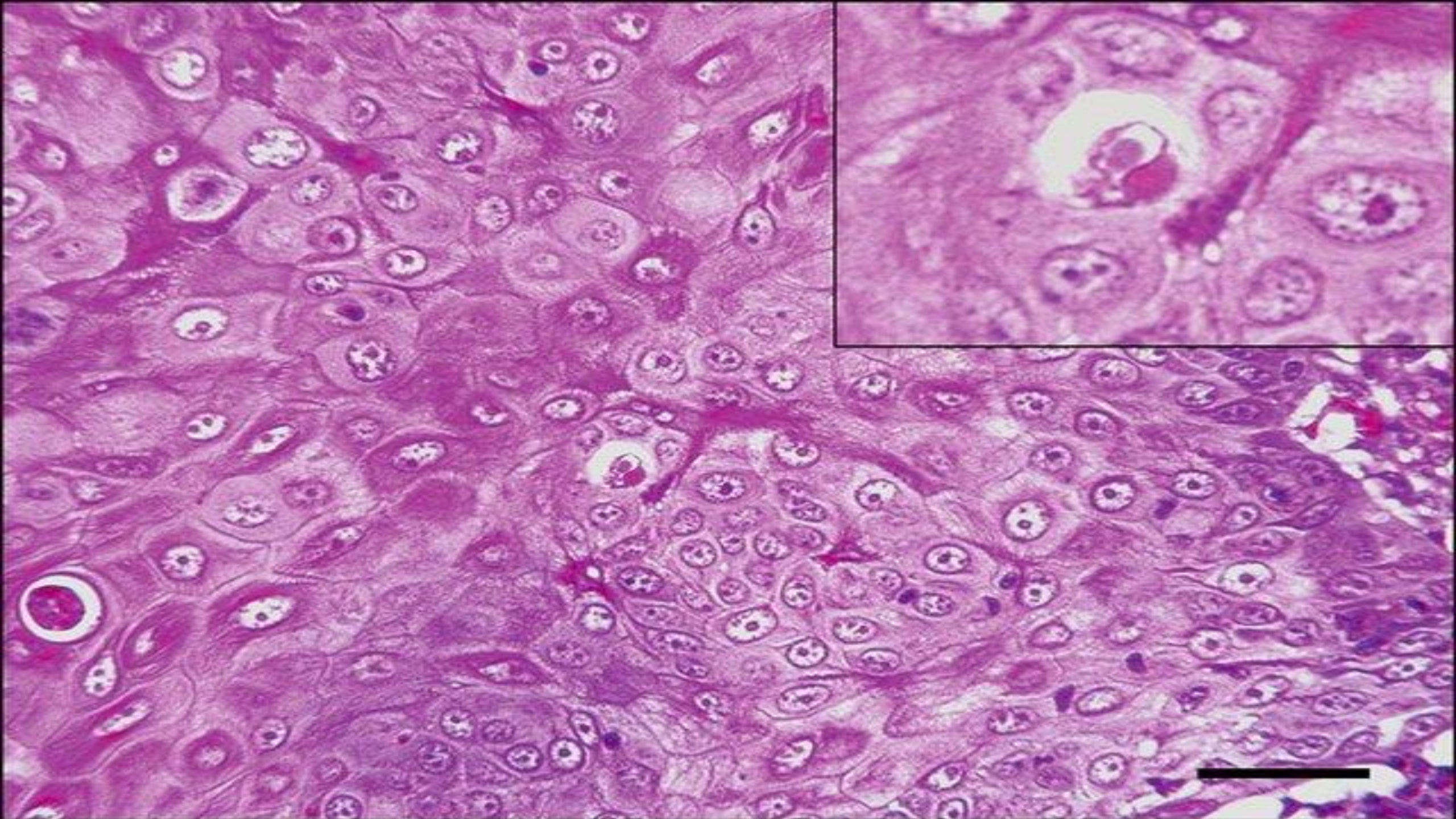
Organ: Skin

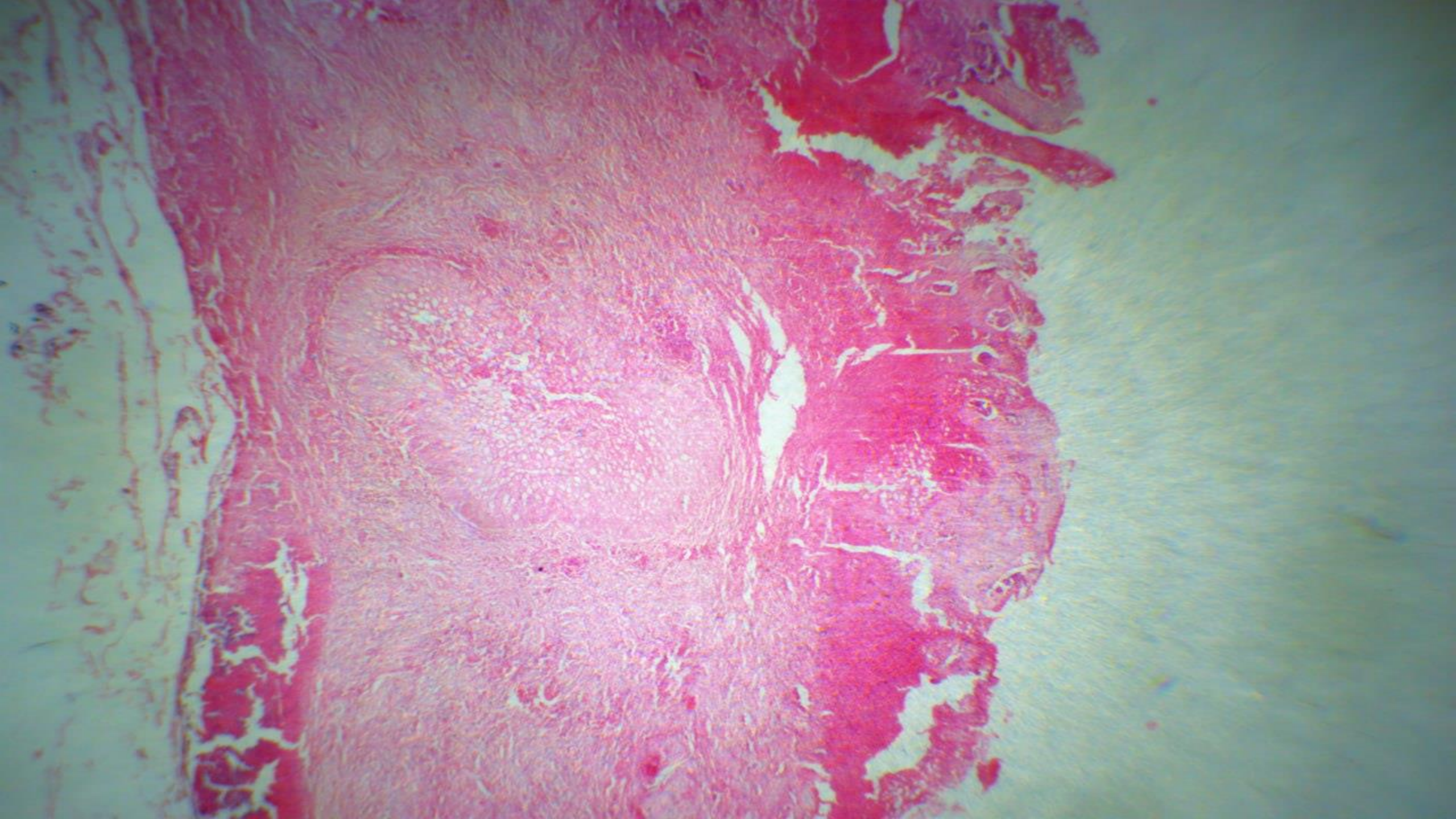
Stain: H&E

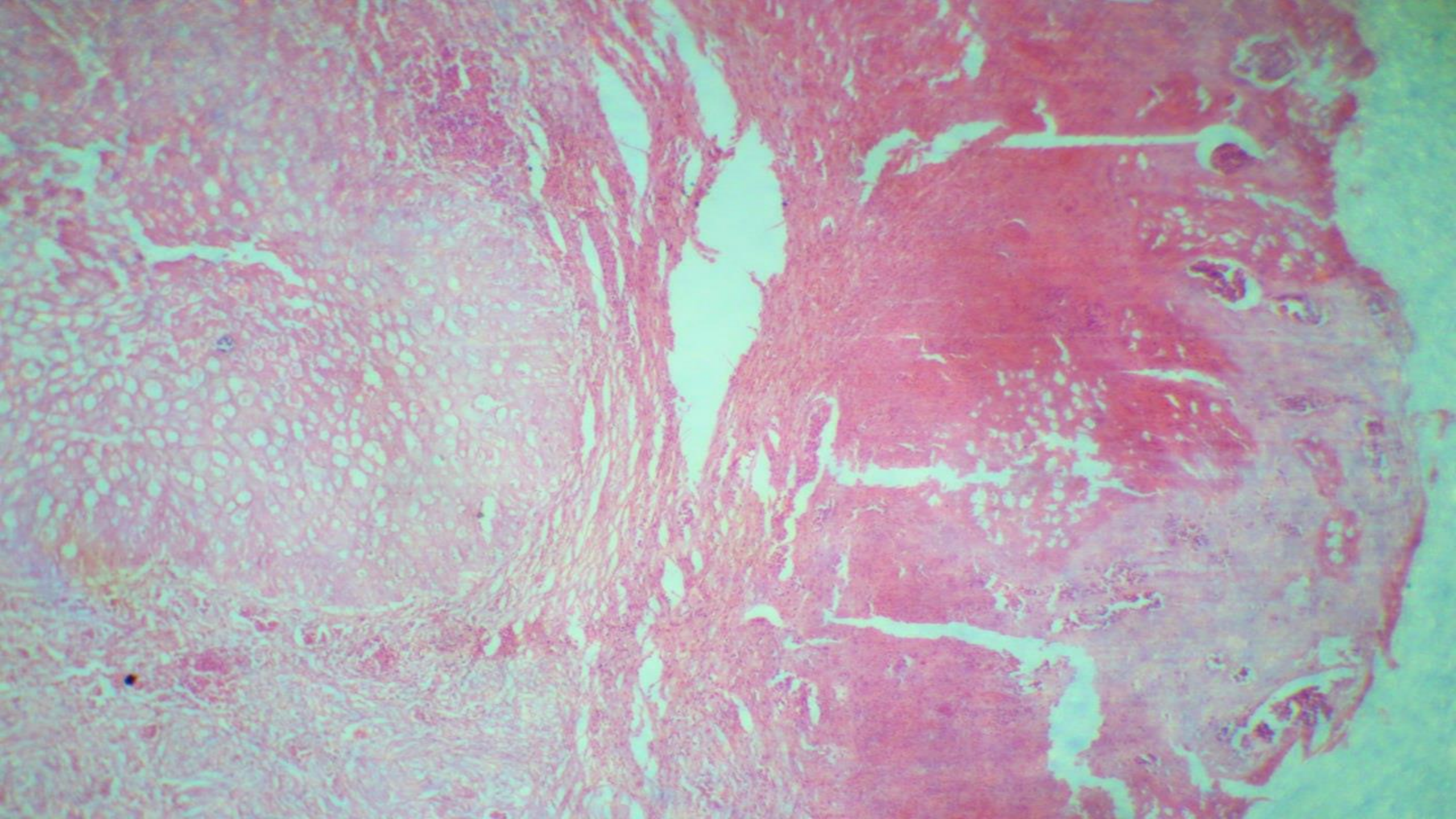
Lesions:

1. The microscopic lesions are present in the striated squamous epithelium in the prickle cell layer (stratum spinosum).
2. The prickle cells are swollen & contain multiple vacuoles different in shape & size.
3. Presence of eosinophilic inclusion bodies in the cytoplasm of prickle cells.
4. Thickening of stratum corneum.
5. Change of this layer into amorphous hyalinized eosinophilic material.









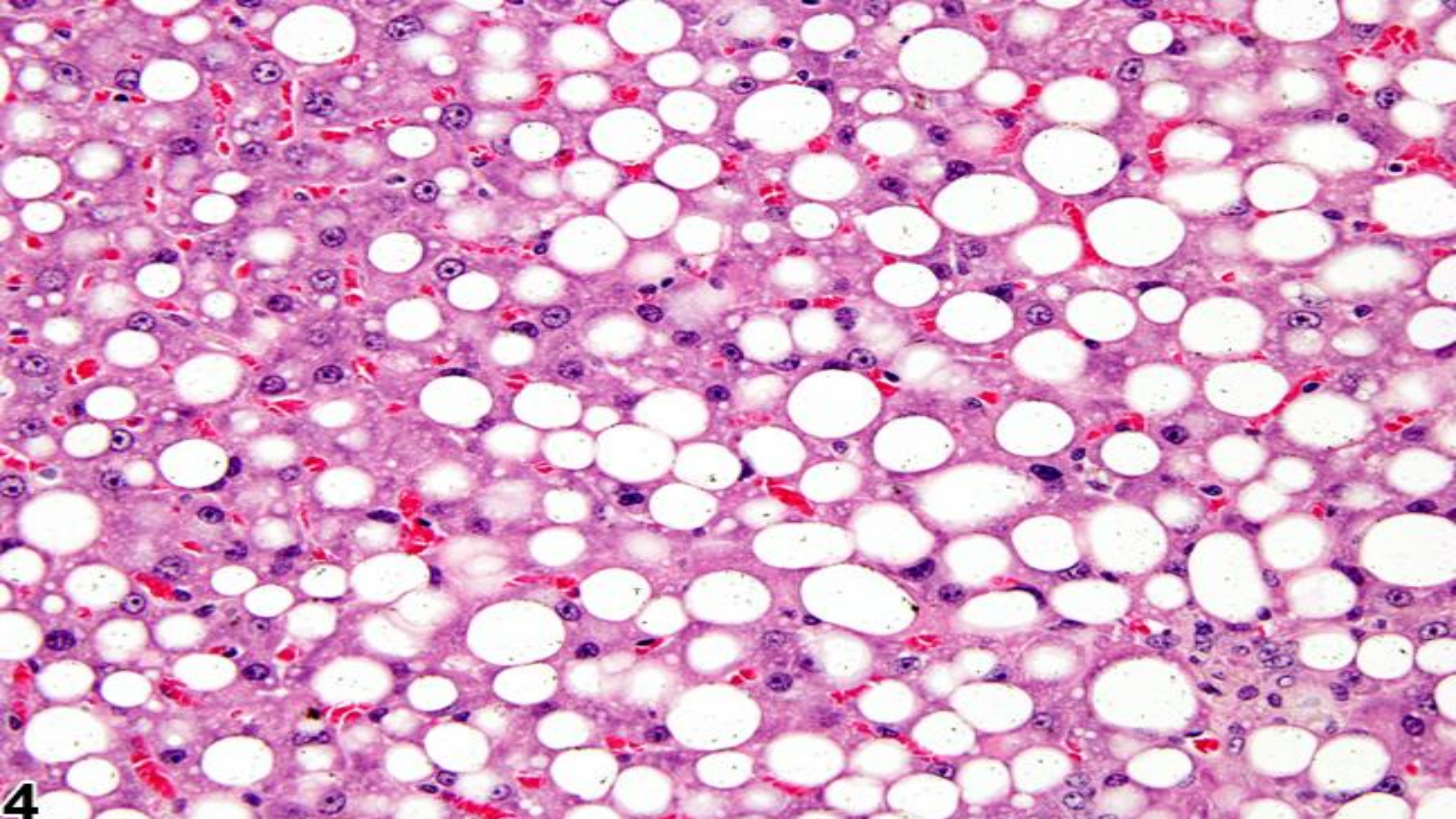
Diagnosis: Fatty change.

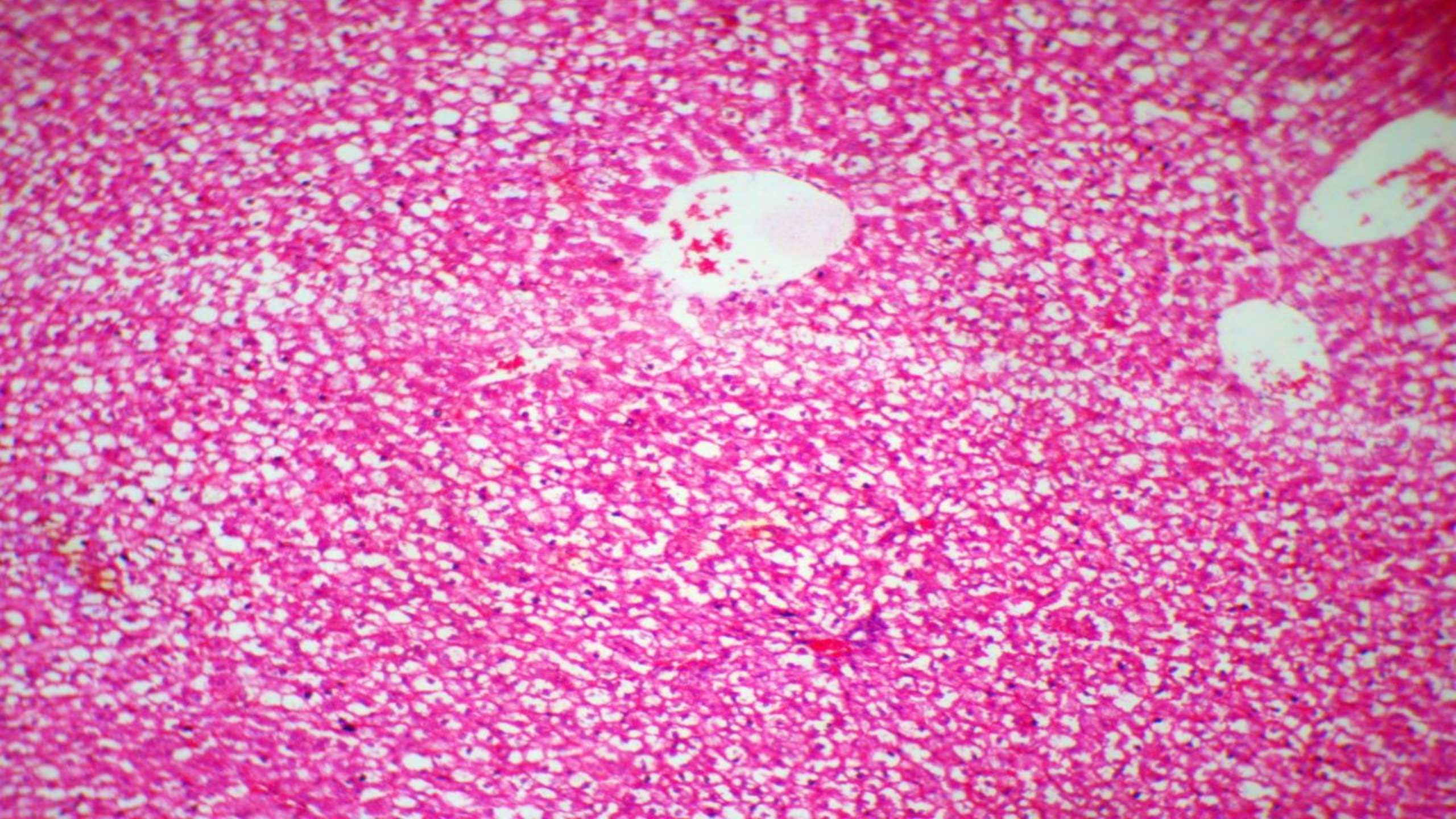
Organ: liver.

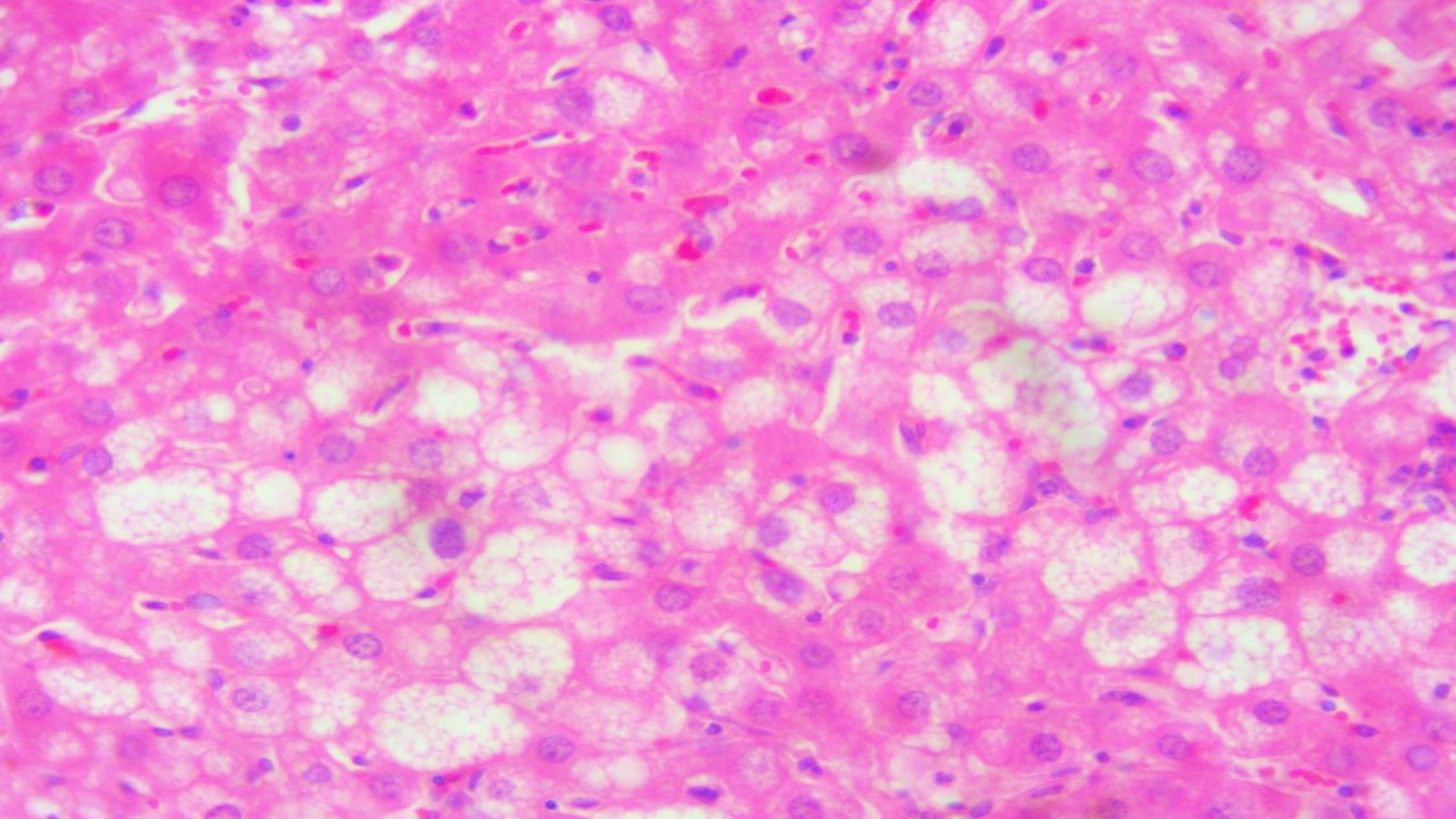
Stain: H&E

Lesion:

1. Enlargement of hepatocytes with rounded edges.
2. Presence of vacuole inside the cytoplasm in different size & shape & this represent the accumulation of fatty materials inside the cytoplasm in which appear empty because of agents used in slide preparation.
3. Nucleus pushed to one side because of large amount of fat, this make the cells like ring signet cell.







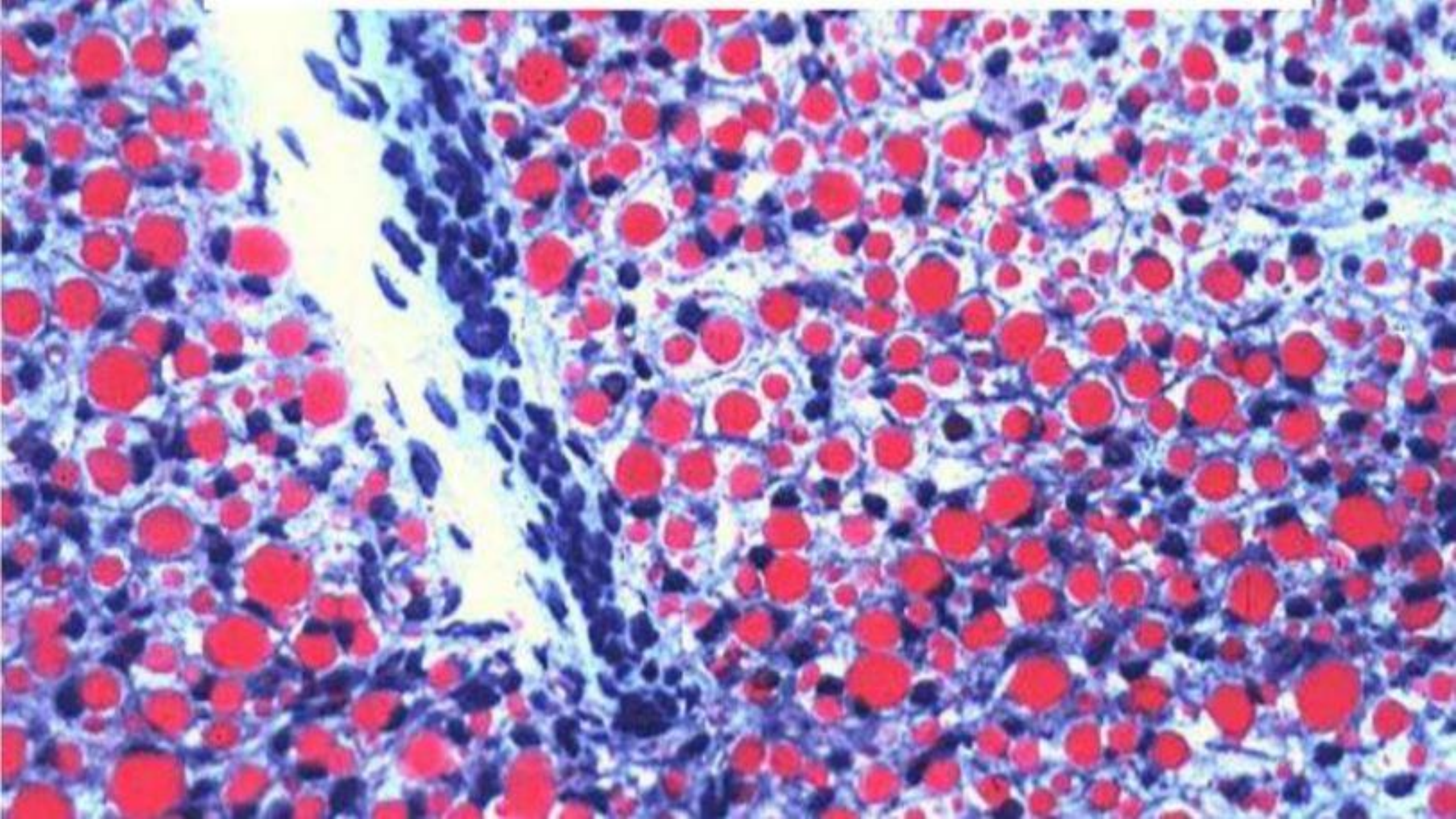
Diagnosis: Fatty change.

Organ: liver.

Stain: oil red O.

Lesion:

1. Enlargement of hepatocytes with rounded edges.
2. Presence of vacuole inside the cytoplasm in different size & shape & this represent the accumulation of fatty materials inside the cytoplasm in which appear
Presence of vacuoles different in size & shape appear **red** in color.
3. Nucleus pushed to one side because of large amount of fat, this make the cells like ring signet cell.





Diagnosis: Hyaline degeneration (Zenker necrosis)

Organ: Skeletal muscles

Lesions:

1. Loss of striation.
2. Atrophy of muscle fibers because of edema.
3. Muscle fibers become homogenous hyalinized eosinophilic masses.
4. Cross section of the parasite Sarcocyst.

