morphology of reversible cell injury

1. Hydropic Change

accumulation of water within cytoplasm of cell.

Cause

acute & sub acute cell injury

pathogenesis

impaired regulation of Na^+ & K^+ level in cell membrane
↓
influx of Na^+ & escape of K^+ (influx of Ca^+)
↓
rapid flow of water into cell
↓
cellular swelling

morphology

Grossly

organs → enlarge
Ex: kidney, liver, pancreas heart muscle.

microscopically,

→ cells are swollen
→ small vacuoles
→ small cytoplasmic blebs
→ nucleus is pale.

2. Hyaline Change

hyaline = glassy, homogenous, eosinophillic appearance of material in H & E stained sections.

Types

intracellular hyaline

- seen in epithelial cells.
- hyaline droplets → in PCT
- hyaline degeneration - typhoid fever - rectus abdominus muscle
- mallory's hyaline - intermediate filaments - hepatocytes - alcoholic liver cells
- russel's bodies - Ig - Rough ER of plasma cells.

extracellular hyaline

- seen in connective tissues
- hyaline degeneration in leiomyomas of uterus.
- hyaline arteriosclerosis in renal vessels in DM & HTN.
- hyalinised glomeruli in chronic glomerulonephritis

3. Mucoid Change

Mucus - protein + mucopolysaccharides
Mucin - glycoprotein - chief constituent
↳ produced by epithelial cells of mucous membranes.
Connective tissue mucin → myxoid

Types

Epithelial mucin :

- inflammation - respiratory tract, uterus
- cystic fibrosis of pancreas
- mucin secreting tumours - ovary, stomach, large bowel.

Connective tissue mucin :

- mucoid/myxoid degeneration in tumours
- dissecting aneurysm of aorta.
- dermis change in myxodema

4. Fatty Change

- aka Steatosis
- intracellular accumulation of neutral fat within parenchymal cells.
- deposits in cytosol
- ↑ in intracellular lipids
- common in liver
- heart, skeletal muscle, kidneys & other organs