

NECROSIS

→ DEFINITION : Morphological Changes as a Result of Denaturation of Intracellular proteins & Enzymatic Digestion of the lethally Injured Cell.

→ Accidental & Unregulated form of Cell Death.

→ Results from Damage to cell Membranes & loss of Ion Homeostasis.

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NECROTIC CELLS cannot maintain integrity of membrane & their contents
LEAK out.

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This causes ACUTE INFLAMMATORY REACTION in the surrounding Tissue.

→ Enzymes that digest the necrotic cells are derived from the lysosomes of Dying cells themselves & from the lysosomes of leukocytes that are called in as a part of inflammatory Reaction.

→ MORPHOLOGY (General Changes) :

(i) CYTOPLASMIC CHANGES - ↑ EOSINOPHILIA

(ii) NUCLEAR CHANGES - one of the 3 patterns can be seen :

a) PYKNOSIS : Shrinkage of Nucleus which appears shrunken & deeply basophilic. ⇒ Chromatin condenses into a solid, shrunken basophilic mass.

b) KARYOLYSIS : Progressive fading of basophilic staining of the nuclei
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leads to a Ghost Nuclei.

c) KARYORRHEXIS : Nucleus breaks up into many smaller fragments.

→ Necrosis is always pathological & occurs due to degradation by enzymes

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PHOSPHOLIPASE

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Damages cell membrane

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Cell contents leak out

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Local Inflammatory Reaction

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NUCLEASE

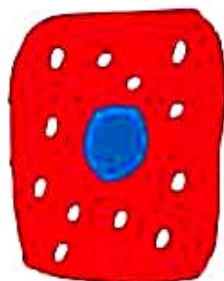
- Pyknosis
- Karyolysis
- Karyorrhexis

* WITH THE PASSAGE OF TIME NUCLEUS
TOTALLY DISAPPEARS.

i) Normal Eukaryotic cell
ii) Morphological Appearance

- iii) Pyknosis
- iv) Karyolysis
- v) Karyorrhexis

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MOTTLED
EATEN
APPEARANCE



② ELECTRON MICROSCOPY →

- i) Discontinuities in Plasma & Organelle Membrane.
- ii) Dilatation of Mitochondria with appearance of large Amorphous Densities.
- iii) Amorphous debris of cytoskeleton.
- iv) Intracytoplasmic Myelin Figures. → whorled Phospholipid masses
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Derived from damaged cell membranes.
- v) Leakage of contents.

