

Acute Cell Swelling

Because of its microscopic morphological character, it was first called "tyndal - effect" by Virchow.

Fuzzy cell swelling is also referred to as fuzzy degeneration; because the nucleus is not clear as if the nucleus is visible behind the curtain.

Degeneratio parenchymatosa (paranchymatous degeneration, parenchymal degeneration) is called because it is determined in the parenchyma of organs or tissues such as liver, kidney, testis



Acute Cell Swelling

In the microscopic examination, it is called "**granular degeneration**" by considering the granular appearance of the cell cytoplasm (seen in the granular structure since the mitochondria are bulged).

It is suggested that the histochemical pathway is the protein structure of such granular structures and this degeneration. It is also called "**albuminous degeneration**" (*degeneratio albuminosa*, albumin degeneration).

It involves changes that occur at the beginning of the cell's homeostasis.

It is reversible, but it turns into vacuole-hydropic degeneration and results in necrosis, followed by irreversible course.

Acute Cell Swelling

Damage to membranous organelles (mitochondria, endoplasmic reticulum, lysosomes, golgi apparatus) in the cell is characterized by water ingestion and swelling.

The main change is in mitochondria. As the mitochondria swell by taking water, the cell cytoplasm in the light microscopic examination takes on a granular appearance.

The granules in the cytoplasm appear to be faded, sometimes missing, as if they were behind the nucleus and nucleus behind the curtain.

Acute Cell Swelling

The changes so far are reversible if the effect is slight.

If the effect is severe and long, irreversible events occur in the cell.

Vacuoles form hydropic degeneration.

Finally the cell necrosis and die.

In this case: Ca^{++} and PO_4 become free.

The crystals of the mitochondria are broken down, the mitochondrion turns into a vacuolar structure and breaks down.

Other membranal organelles, such as the endoplasmic reticulum and ribosomes, swell by taking up more water, become larger vacuoles and break down. At this stage, vacuoles are referred to as **hydropic degeneration**

Acute Cell Swelling

In the meantime, changes occur in the nucleus.

Nucleoproteins become denatured.

In this regard, the osmotic pressure increases further. The nucleus swells, hypercromasia is formed.

Then someone with caryopicnose, without caryorexix or karyolysis occurs.

Proteolytic enzymes are cleared by cleavage of lysosomes in the cytoplasm. Eventually the cell will die by going through necrosis.

Such degeneration
COAGULATION NECROSE
results in!

A

B

C

Pathological Findings

Necropsy (macroscopical, pathological-anatomical) findings

The organ is bulging,

The edges are blunt.

The color is **normally a lighter, gray and cooked appearance.**

In the presence of severe hyperemia
organ decay is **red or brownish red.**

The consistency is brittle or soft.

Necropsy (autopsy) : Examinations made within a system to find causes of death and illness

Pathological Findings

Histopathological (Light Microscopical) Findings

The parenchyma cells of the body are swollen, the cytoplasm loses its normal basophilic structure, it is painted darker red with eosin.

When the cells are shaped in the muscle cells (heart, skeleton), the cells lose their lines and look the same.

"The cell is a fuzzy, imaginary appearance, as if the nucleus of the cell was visible behind the curtain.

A

B

C

Hidropic-Vacuolar Degeneration

Swelling of cell organelles by taking excess water, formation of vacuoles of varying size in the cell;

then the whole cell is filled with water and the nucleus is pushed to the character.

It is more severe, more advanced of acute cell swelling .

The effect is more intense, if it takes a long time, it follows

or it is shaped directly by some effect.

Hidropic-Vacuolar Degeneration

In hematoxylin-eosin stain, these areas are pale pink with eosin; if the cytoplasm is seen in the netted view; the hydropic degeneration at this stage is also referred to as reticular degeneration histologically.

Sometimes, with the gradual growth of vacuoles, a single large vacuol is formed that covers a significant part or the entire cytoplasm.

A

Hidropic-Vacuolar Degeneration

In this case, the nucleus of the cell is flattened and pushed to one side. Such type of hydropic degeneration enters the definition of cell ploidy or cell hydrops.

If the degeneration occurs on a multi-cell of tissue, it takes almost the texture of the honey pellet.

"With the disintegration of the organelles, the cell cytoplasm is filled with water and the nucleus of the cell is pushed to its edge.

Such degeneration
COLLIGATION NECROSE
results in!

A

B

Pathological Findings

Histopathological Findings

The cell is swollen. Initial findings are similar to parenchymal degeneration.

The above-mentioned changes (**big irregular small vacuoles, reticular structures, single large vacuole cell hydrops, cell edema**), which can be seen with light microscopy with increasing water uptake and occasional expansion of the cell organelles, especially the **endoplasmic reticulum**, are shaped and eventually colligation results in necrosis.

A

B

C