

Histopathology

By

Assistant lecturer
Wadq yahya younis

Cellular adaptation

Cellular adaptation: Refers to reversible changes in number, size and function of the cells to overcome environmental changes, the adaptation may be physiological (normal) or pathological (abnormal).

Five major types of adaptation include:-

1_hyperplasia: increase in the number of the cell causing increase in the size of the organ. There are two types of hyperplasia:

a) Physiological: (Mammary gland hyperplasia)

b) pathological:  Compensatory (Bone marrow hyperplasia & liver hyperplasia)

 Hormonal (Endometrial hyperplasia & mammary cystic hyperplasia).

2_ Hypertrophy: increase in the size of the cell causing increase in the size of the organ. There are two types of hypertrophy:

a) physiological: (myometrial hypertrophy & skeletal muscle hypertrophy).


b) pathological:  compensatory (kidney hypertrophy)

 adaptive (left ventricular hypertrophy)

3_Atrophy: is a decrease in the size of the cell lead to decrease in the size of the organ after normal growth. There are tow types of atrophy:

a) physiological: (breast & ovary).

b) pathological:  general (starvation & mal nutrition)

 local * ischemic
* pressure
* neuropathic
* disuse

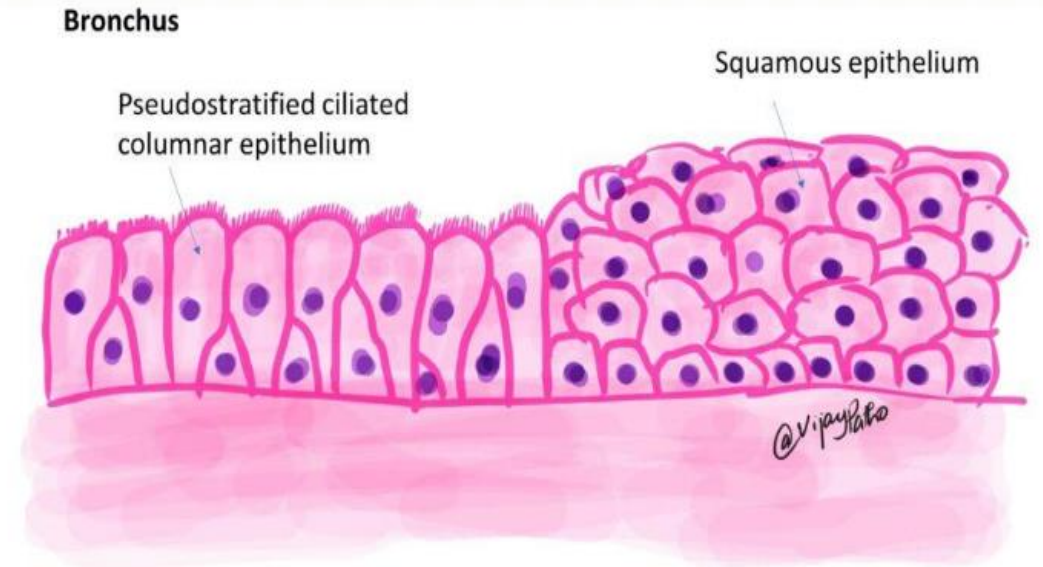
4_Metaplasia: transformation of full differentiated cells to another related cells.

Causes: a) Chronic irritation (smoking)
b) Viral infection (HPV: Cervix)
c) Alcohol consumption

*metaplasia represents an adaptive

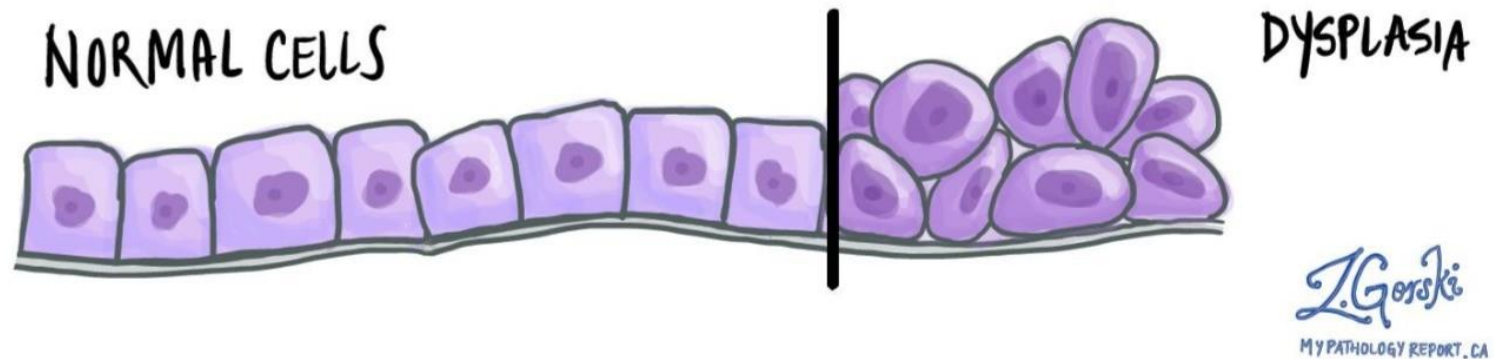
Change during which the cells that are sensitive to stress are replaced by more resistant cell type.

** persistence of the etiology of metaplasia may be followed by malignant transformation of metaplastic tissue.



5_Dysplasia: abnormal development of tissue(diffused or local)
or abnormal arrangement and appearance of cell and tissue.

* Dysplasia is not cancer, but it may sometimes become cancer.



***Aplasia:** absence of organ due to failure in embryonic development of tissue or congenital absence of an organ or tissue. Ex: uterine aplasia.

***Neoplasia:** is the abnormal proliferation of cells , it is usually causes a tumor.

***Neoplasm** (tumor): abnormal mass of tissue as a result of neoplasia, neoplasm may be benign ,pre-malignant or malignant.

***Euoplasia:** normal growth of the tissue.

***Proplasia:** stimulation of growth.

***Retroplasia:** decrease growth of tissue.

***Anaplasia:** poorly differentiated cells (malignant cancer).