جامعة المستقبل
AL MUSTAQBAL UNIVERSITY

كلية العلـــوم
قـســـــــم الادلة الجنائية

Lecture (1)

عنوان المحاضرة

The theoretical side:

المادة : علم الانسجة

المرحلة : الثانية

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The theoretical side:

- Histology:

It is a science that is interested in the study of microscopic anatomy of cells and tissues of animals and plants. It is based on examination of a section of tissue under the microscope and is considered histology is an essential tool for biology and medicine.

-The cell :is the unit of structure and function of the organism. There are two types of cells:

1-Unicellular in which the cell performs all functions such as bacteria and amoeba.

2-Multicellular Each group of cells specialize to perform a certain function such as the human body.

Tissue:

Tissue is a group of cells that are almost identical in shape and specialize in performing one or more functions and are linked by a substance called intercellular substance these tissues divided in to four type**:**

1-Epithelial Tissues.

2 - connective tissues .

3-Muscular Tissues.

4 - Nervous Tissues.

-Histological sections

1. Cross or Transverse sections (C.S, T.S, XS) .
2. Longtudinal sections (L.S) .
3. Perpendicular sections (P.S) .

-Epithelial Tissues

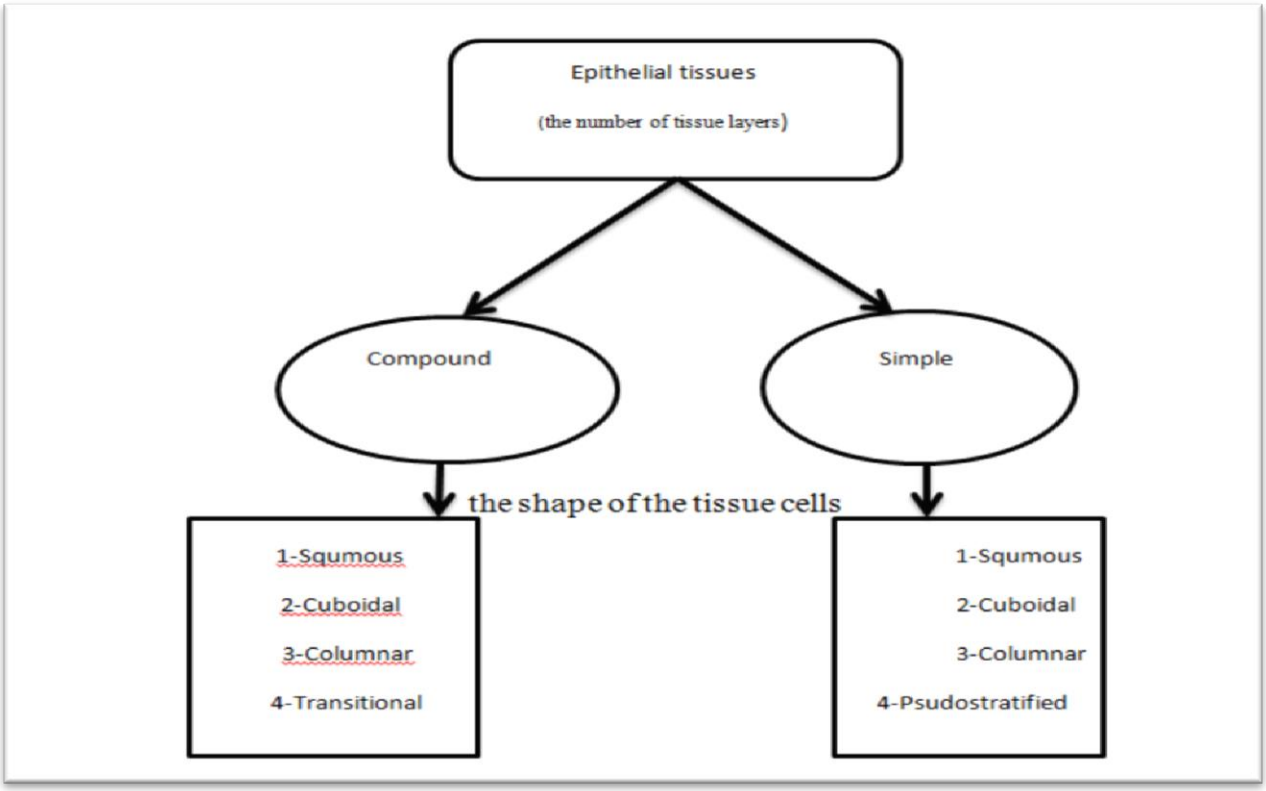
These tissues originate from the three embryonic layers, ie, Ectoderm, Endoderm and Mesoderm. These tissues exist in a plate of cells covering the outer surfaces or lining the inner surfaces.

* Epithelial tissue generally consists of one or more cells, a basement membrane on which cells are based and an intercellular substance that is very few.

-Division of epithelial tissue:

Epithelial tissue can be divided on two bases: -

1. Depending on the number of tissue layers
2. According to the shape of the tissue cells as in the following diagram



-Simple epithelial tissues: include:

1. Simple squamous epithelial tissues

The shape of the cells in the vertical section (P.S) spindle and the nucleus is spherical or oval located in the center of the cell, This type of tissue is found in the lining of the mouth, the wall of the Bowman wall as well as the line of blood vessels**.**

2-Simple Cuboidal epithelial tissues

The square cells appear in the vertical section (P.S) of this tissue and the nuclei are spherical. This type of tissue is found in the follicles of the thyroid gland as well as it line the distal tubule of the kidney **.**

3- Simple columnar epithelial tissues

Rectangular cells appear in the vertical sections (P.S). Nuclei with a basal position (near the bases of cells) can be seen, and as in cuboidal tissue they may or may not appear in cross sections (T.S) . The end of these cells may be ciliated with a ciliated columnar epithelial tissue, as in the lining tissue of the bronchioles in the nose, and may be non-ciliated as in the case of the lining of the stomach and the intestine**.**

4-Psudeostratified epithelial tissues

This tissue appears to be composed of several layers (applied), but in fact consists of one row of cells based on one basement membrane, but all: The presence of nuclei at different levels, as well as the lack of access of some cells to the free edge of the tissue, gives the tissue a layered appearance (ie composed of more than one layer). There are three types of cells in this tissue :

1-Columnar cells

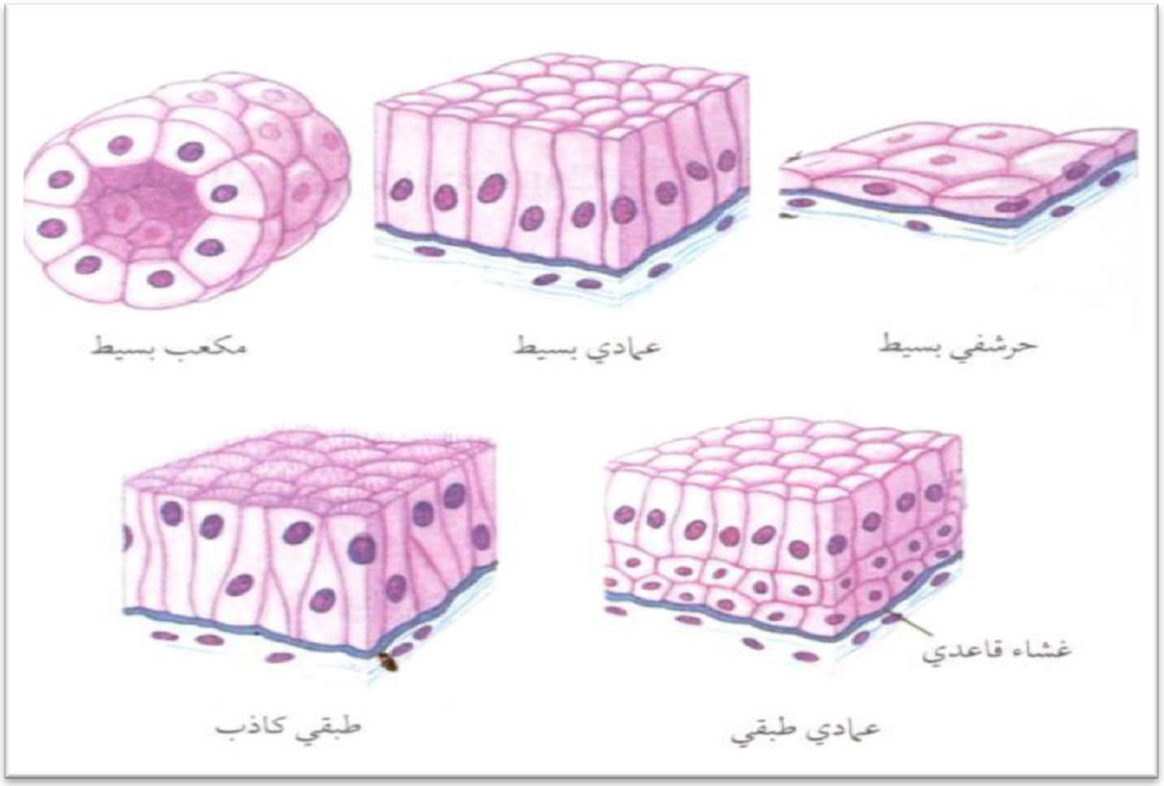
2-Fusiform cells

3 - Basal cells

These three types include another type of cell known as goblet cells. This tissue may also be ciliated as in trachea, and may not be ciliated as in the lining wall of the channels of some large glands such as salivery glands and parts of the male urethra.

-Practical aspect:

1. Check the slice for epithelial cells taken from the lining of the mouth
2. Check a slice of epithelial cells taken from the mesentery
3. Check a slice of epithelial cells taken from Bowman's portfolio
4. Check a slice of epithelial cells taken from the kidney
5. Check a slice of epithelial cells taken from the stomach
6. Check a slice of epithelial cells from the small intestine
7. Examine a slice of epithelial cells taken from the salivary glands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