

Al-Mustaqbal University College
Department of Nursing



Pathophysiology

Lecture \4

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Neoplasia and Cancer

Before we discuss the features of cancer cells and the mechanisms of carcinogenesis, it is useful to summarize the fundamental and shared characteristics of cancers:

- Cancer is a genetic disorder caused by DNA mutations.
- Genetic alterations in cancer cells are heritable, being passed to daughter cells upon cell division. As a result, cells harboring these alterations are subject to Darwinian selection.
- Mutations and epigenetic alterations impart to cancer cells a set of properties that are referred to collectively as cancer hallmarks

Among tumors, the division of neoplasms into benign and malignant categories is based on a judgment of a tumor's potential clinical behavior.

- **A tumor** is said to be **benign** when its microscopic and gross characteristics are considered to be relatively innocent, implying that it will remain localized and is amenable to local surgical removal; the patient generally survives.

- **Malignant tumors** are collectively referred to as cancers, derived from the Latin word for “crab”—that is, they adhere to any part that they seize in an obstinate manner, similar to a crab's behavior. Malignant, as applied to a neoplasm, implies that the lesion can invade and destroy adjacent structures and spread to distant sites (metastasize) to cause death.

Etiology:-

The chief etiological factors is the following heading.

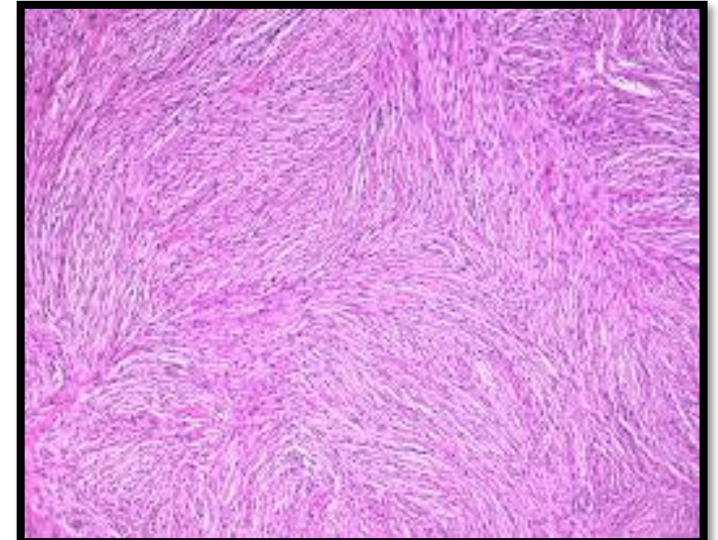
- 1- **Developmental abnormalities.**
- 2- **Parasites.**
- 3- **Irritation.**
- 4- **Hormones.**

Benign Tumors:

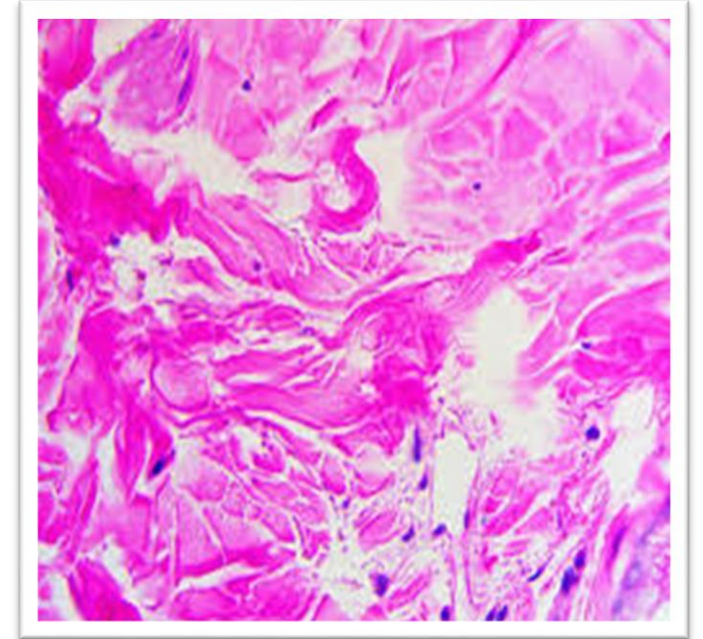
- ❑ In general, benign tumors are designated by attaching the suffix -oma to the cell type from which the tumor arises. As example
- ❑ A benign tumor arising in fibrous tissue is a fibroma;
- ❑ A benign cartilaginous tumor is a chondroma.
- ❑ The nomenclature of benign epithelial tumors is more complex. They are classified sometimes on the basis of their microscopic pattern and others are classified by their cells of origin.

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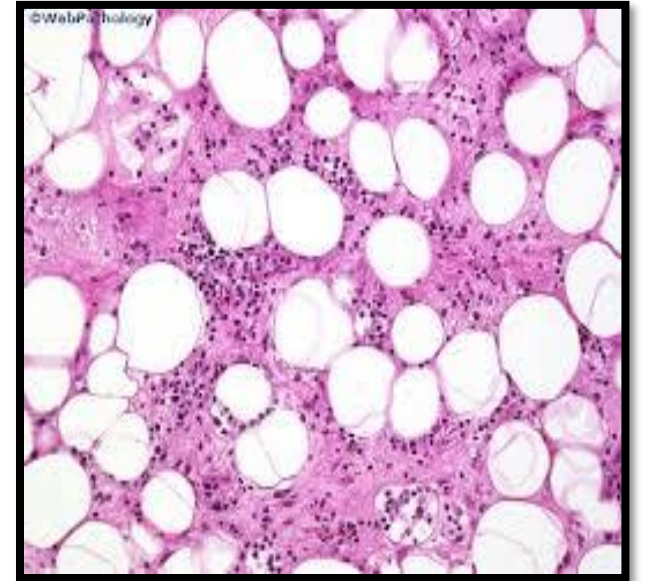
1- Fibroma: it is a neoplasm consisting of white connective tissue fiber and cell, it is hard and soft fibrous and may be round or lobulated by well-define capsule and irregular wavy band of white color or pinker.it can form anywhere in the body and any age either sex.



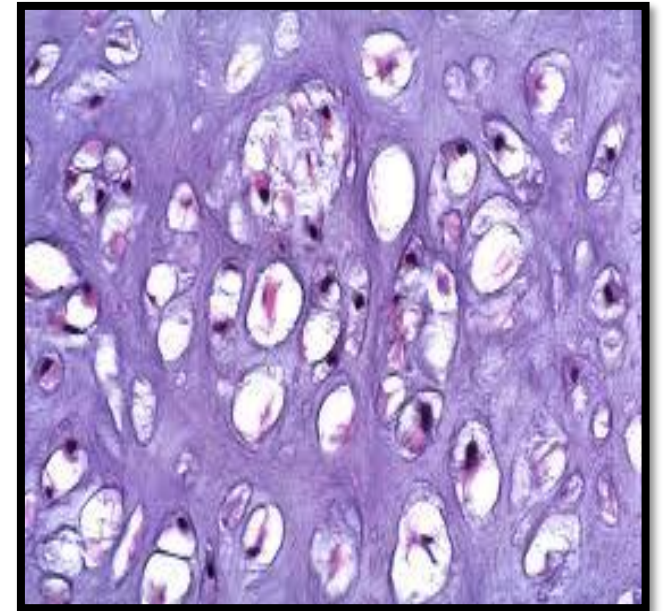
2- Myxoma: the structure of which resemble that of embryonic connective tissue, it consist of stellate cell with long interlacing branching process. Most common in the heart, it can be remove by surgical resection.



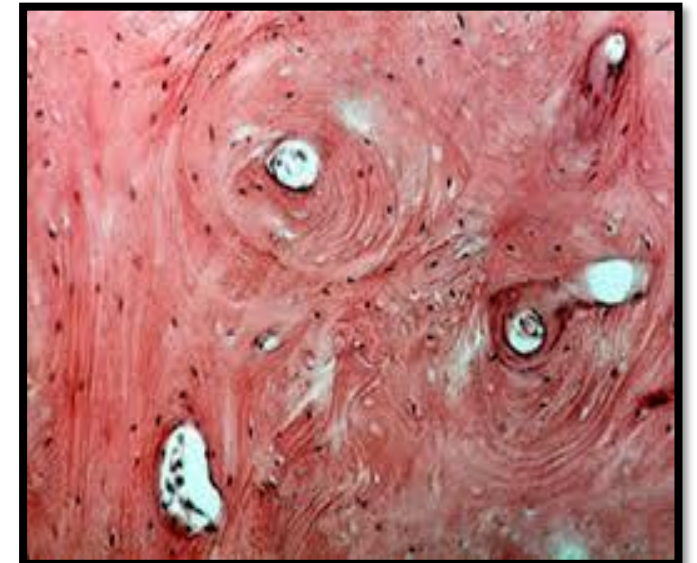
3- Lipoma : this is neoplasm consisting from adipose tissue , in general the structure is resemble of the normal , except the fat cell are large and appear to be grouped together into a lobules by strand of fibrous connective tissue . It located in thin fibrous capsule.



4-Chondroma: this tumor consist of island of hyaline cartilage bound together into a solid mass by vascular fibrous tissue and well – defined capsule. It located in soft tissue and synovial of bone .



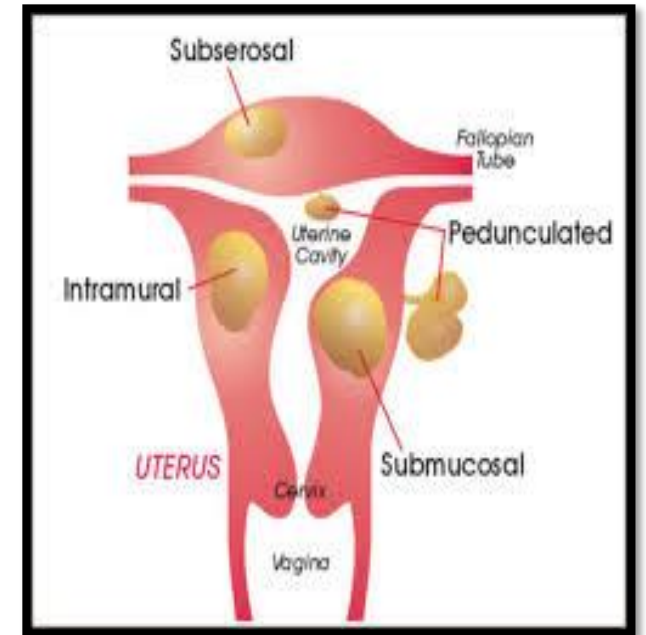
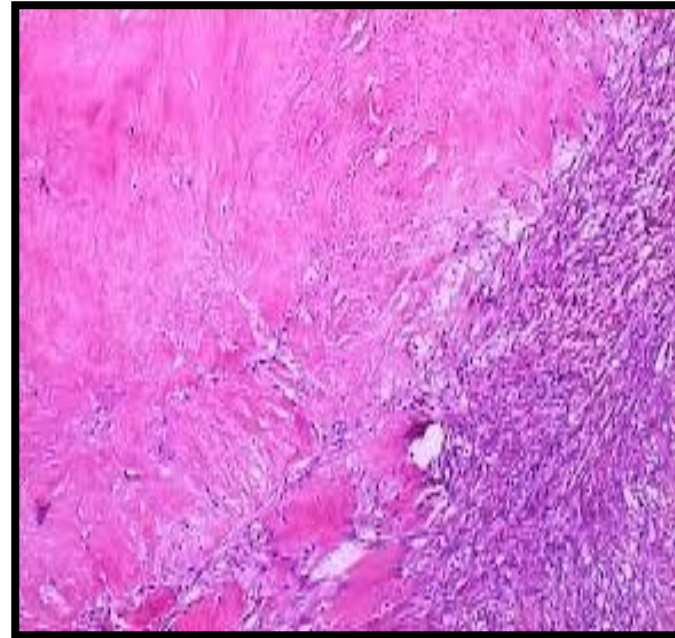
5-Osteoma : this tumor is composed of bone tissue .



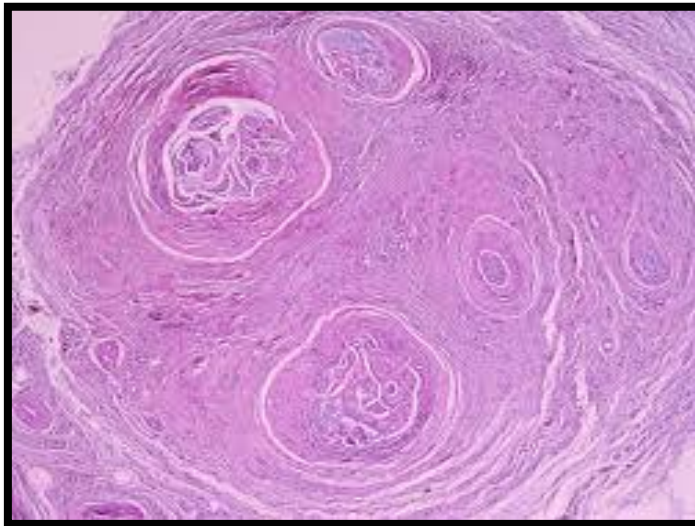
6-Odontoma: it a tumor arising from dental tissue, it is small, hard, nodular projection confined to the part of teeth such as crown.



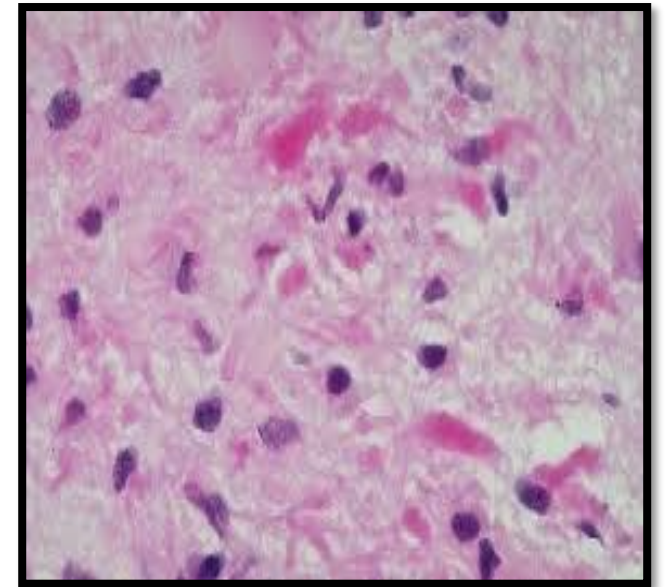
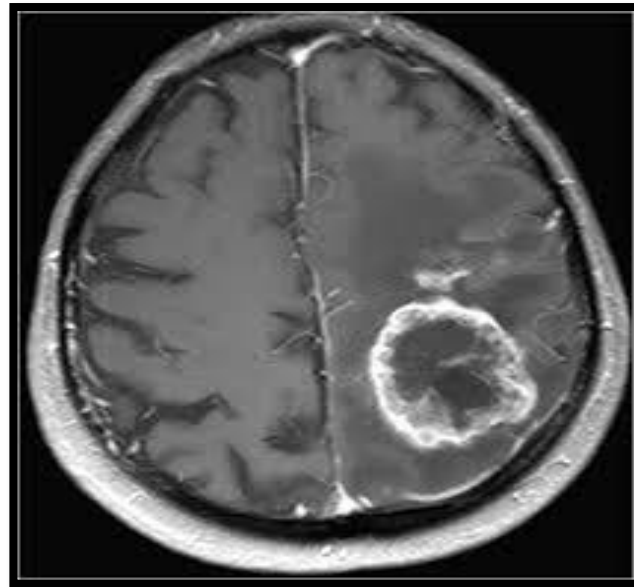
7- Myoma: this is tumor composed of muscle tissue, it consist of striated muscle known as rhabdomyomata, and in smooth muscle called leiomyoma ,the chief site is in uterus, and vagina, intestine and stomach.



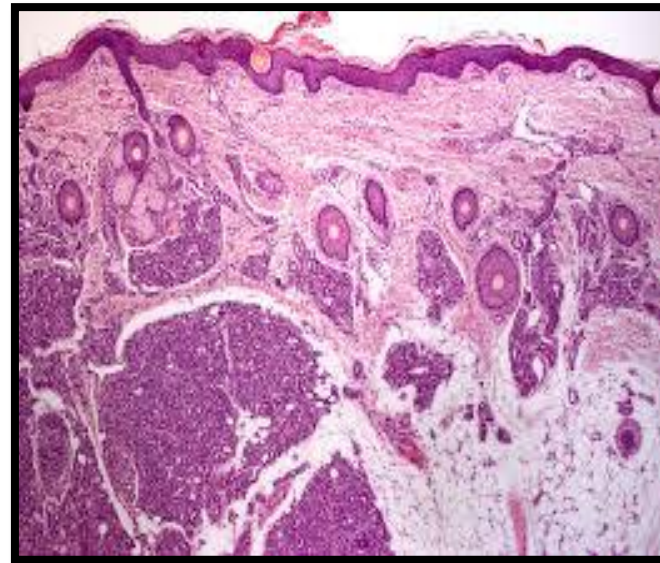
8-Neuroma: this is tumor consist of nerve cell and fibers. it is very rare occur . The so-called neuroma is merely of inflammation fibrous tissue which is found at the end of nerve follow neurectomy . It is benign tumor of the nerve tissue, common occur between the 3th and 4th toes. it is referred some time as inter metatarsal , pain and called (Morton's neuroma) .



9- Glioma: it is neoplasm of connective tissue of the nervous system (neuroglia), it is usually a soft and very vascular growth in which hemorrhage present, the site is brain and spinal cord.



10-Angioma : is a tumor of vascular tissue ,consisting of proliferation or dilation blood or lymph vessels , it is two type (haemangioma) for blood vessels and (lymphangioma) for the dilated lymphatic it chiefly occur in skin and subcutaneous tissue .



Any Question?