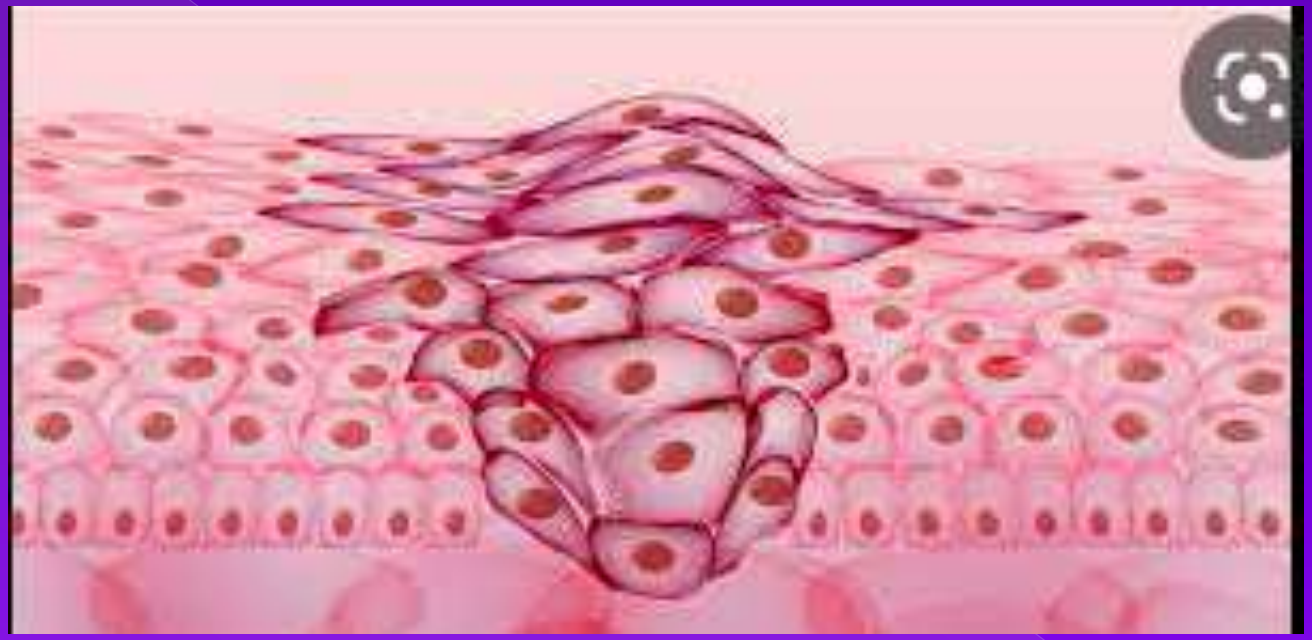
Neoplasia 1



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Introduction.

- Characteristics of Benign and Malignant Neoplasms.
- Epidemiology.
- Cancer Genes.
- Carcinogenesis: A Multistep Process Hallmarks of Cancer.
- Etiology of Cancer: Carcinogenic Agents.
- Clinical Aspects of Neoplasia.

cancer

- Cancer is the second leading cause of death in the United States.
- Even more agonizing than the associated mortality is the emotional and physical suffering inflicted by neoplasms.

Most common characteristics of cancers:

- 1. Cancer is a genetic disorder caused by DNA mutations: spontaneous or induce.
- 2. Genetic alterations in cancer cells are heritable, being passed to daughter cells upon cell division.

NOMENCLATURE

- Neoplasia means “new growth’’ referred to a tumor.
- they continue to replicate, apparently oblivious to the regulatory influences that control normal cells.
- They increase in size regardless of their local environment.
- All neoplasms depend on the host for their nutrition and blood supply.

- study of tumors is called oncology.
- the division of neoplasms into benign and malignant categories is based on a judgment of a tumor's potential clinical behavior.

- 1. benign:
  - it will remain localized and is amenable to local surgical removal.
  - Affected patients generally survive.

- 2. 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.

- Malignant tumors are collectively referred to as cancers.

- All tumors, benign and malignant, have two basic components:

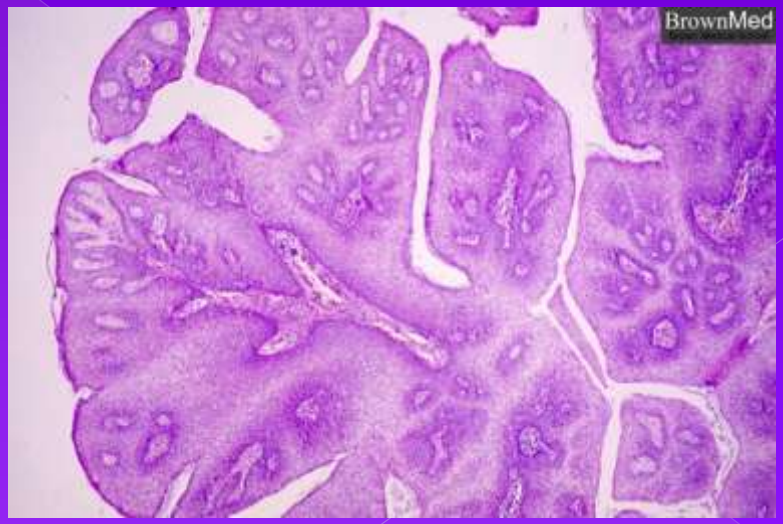
- (1) the parenchyma, made up of transformed or neoplastic cells.
  - determines its biologic behavior

- (2) non-neoplastic stroma :
  - the supporting, host-derived, non-neoplastic stroma, made up of connective tissue, blood vessels, and host-derived inflammatory cells.
  - The stroma is crucial to the growth of the neoplasm,

1. Benign Tumors

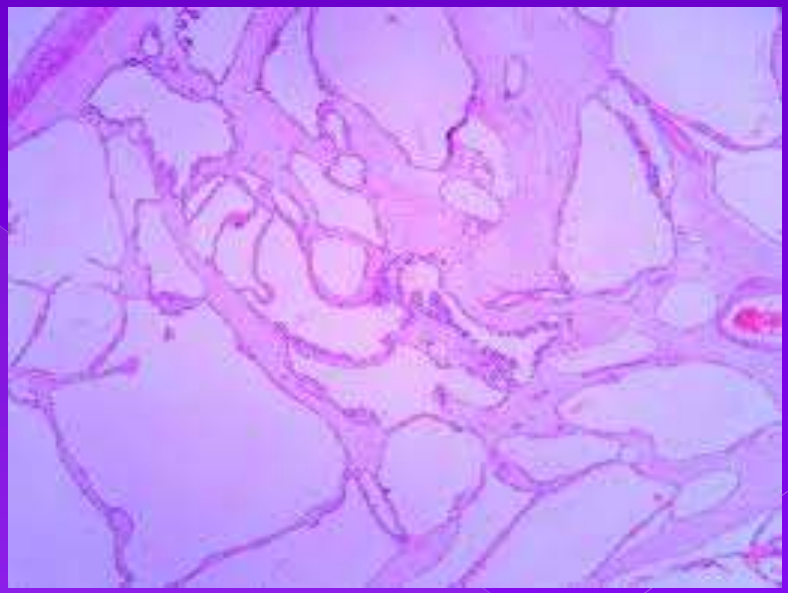
- benign tumors are designated by attaching the suffix -oma to the cell type from which the tumor arises.
- For example:
- a benign tumor arising in fibrous tissue is a fibroma.
- a benign cartilaginous tumor is a chondroma.
- adenoma is applied to benign epithelial neoplasms

- Papillomas are benign epithelial neoplasms, growing on any surface with fingerlike fronds.



- A polyp is a mass that projects above a mucosal surface, as in the gut.

- Cystadenomas are hollow cystic masses that typically arise in the ovary



2. Malignant Tumors

- Malignant neoplasms arising in "solid" mesenchymal tissues are called sarcomas, e.g:

- malignant neoplasm comprised of fat-like cells is a liposarcoma,
- malignant neoplasm composed of chondrocyte-like cells is a chondrosarcoma.

- Those arising from cells of the blood are called leukemias or lymphomas.

- Malignant neoplasms of epithelial cells are called carcinomas:

- Carcinomas are subdivided further:
- That grow in a glandular pattern are called adenocarcinomas.

- that produce squamous cells are called squamous cell carcinomas.

- Some carcinoma show little or no differentiation. Such tumors are referred to as poorly differentiated or undifferentiated carcinoma.

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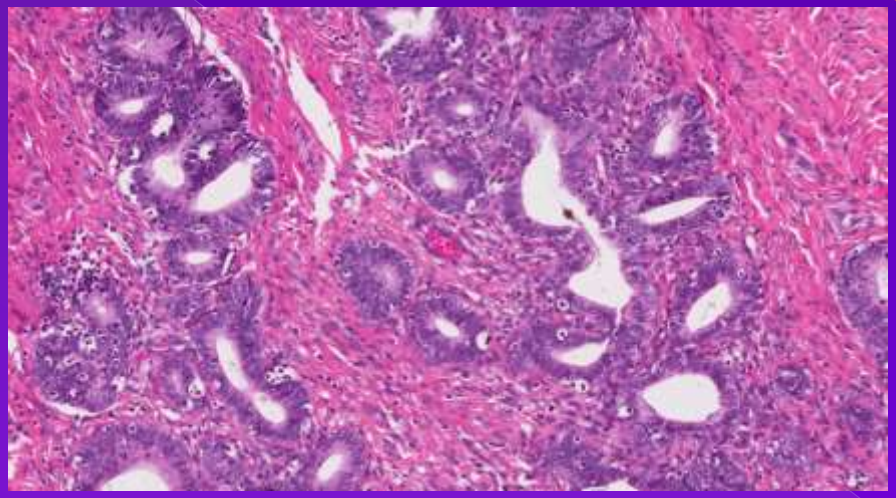
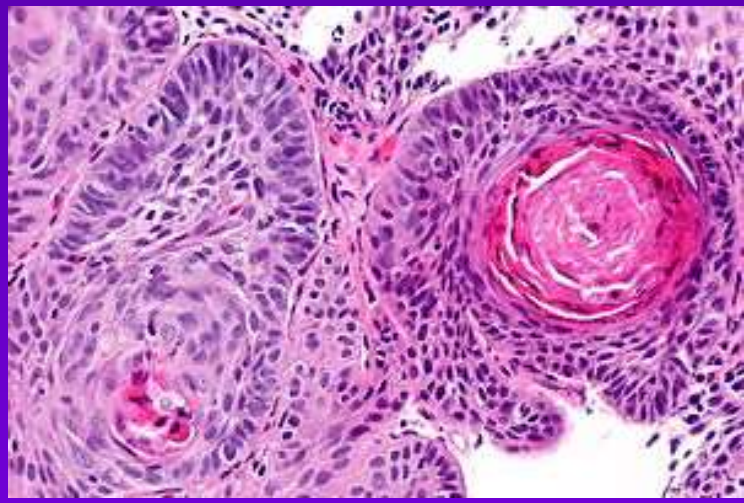
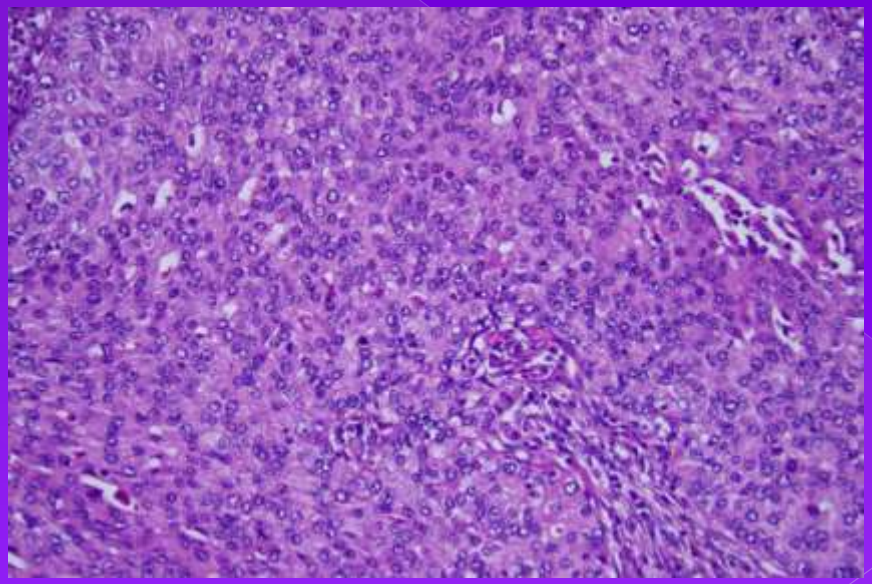




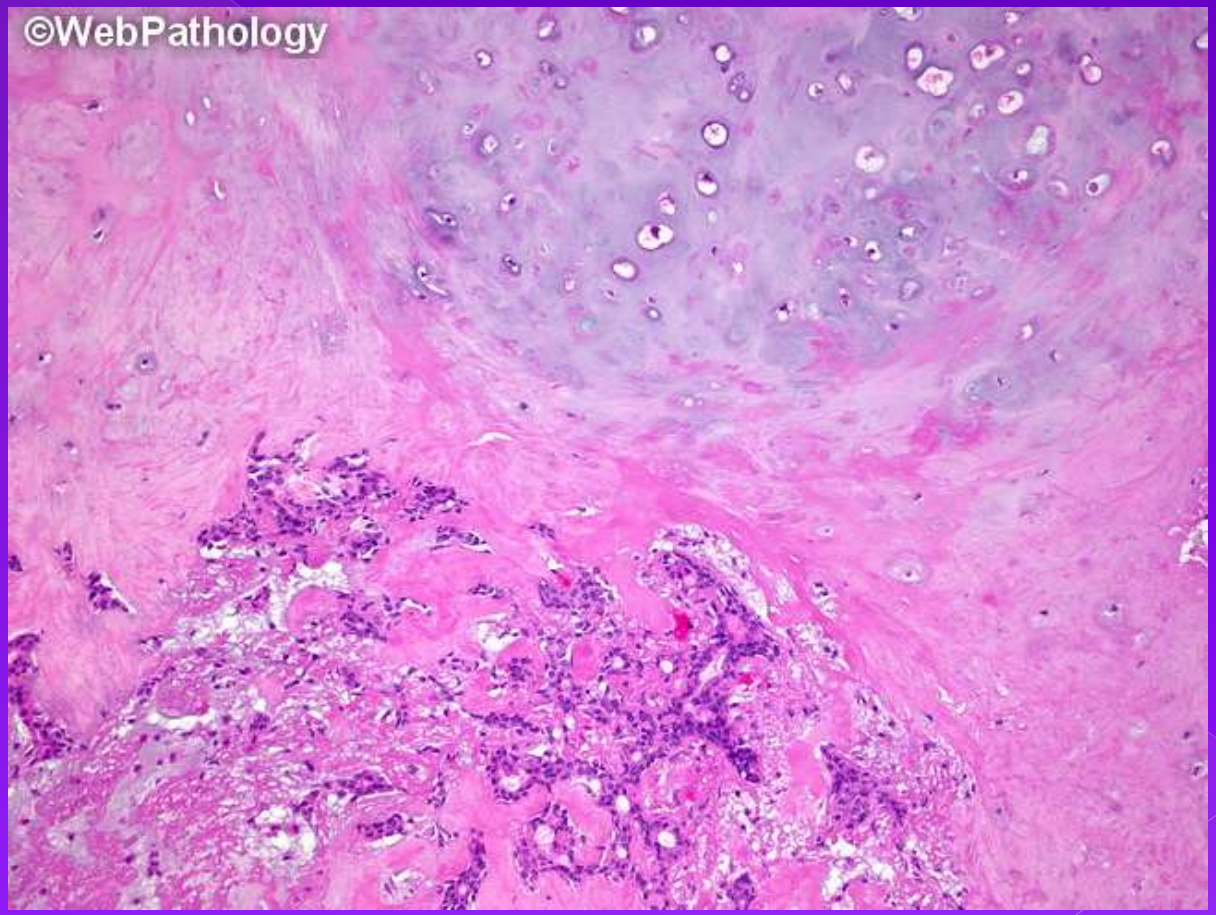


Mixed tumors

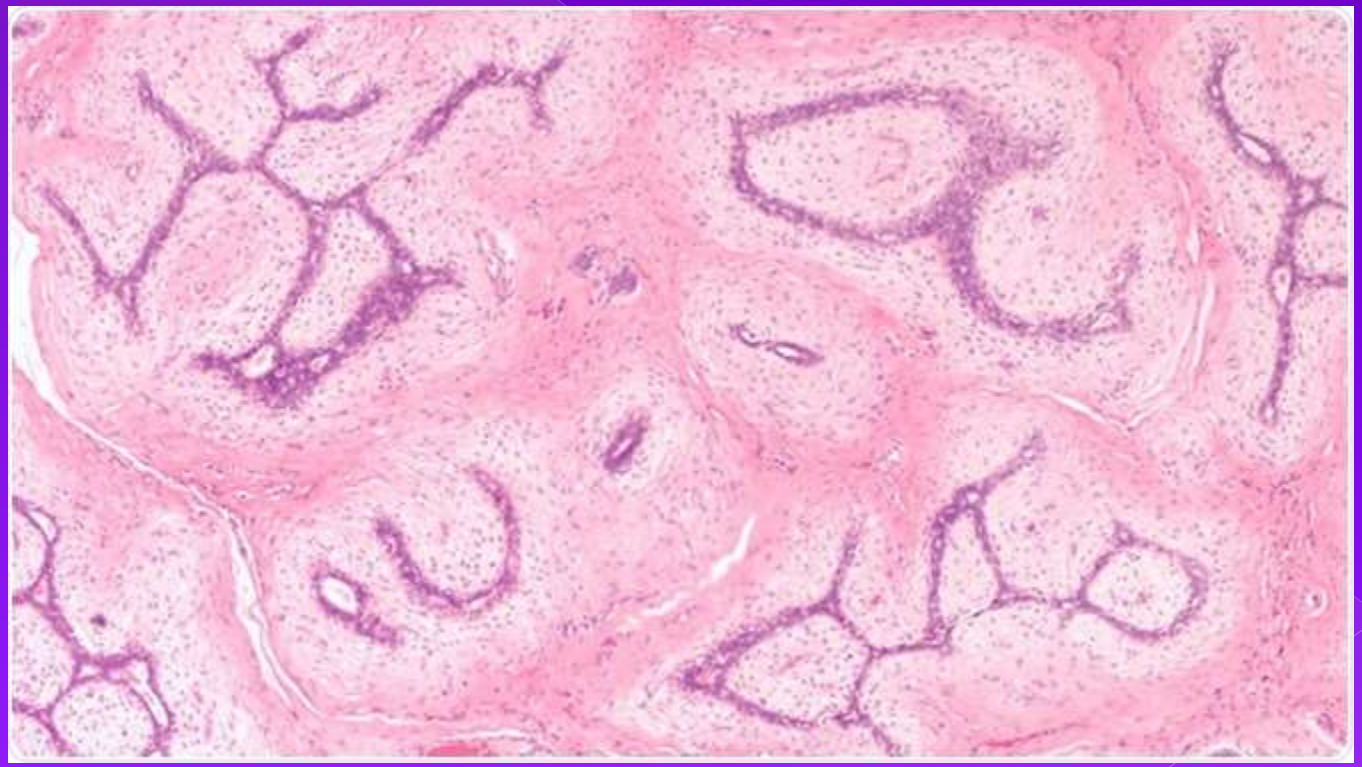
- tumor undergo divergent differentiation.
- such tumors has the capacity to differentiate down more than one lineage.
- The best example is mixed tumor of salivary gland and the Fibroadenoma of the female breast

- mixed tumor of salivary gland= pleomorphic adenoma

- It contain epithelial components with islands of cartilage or bone.

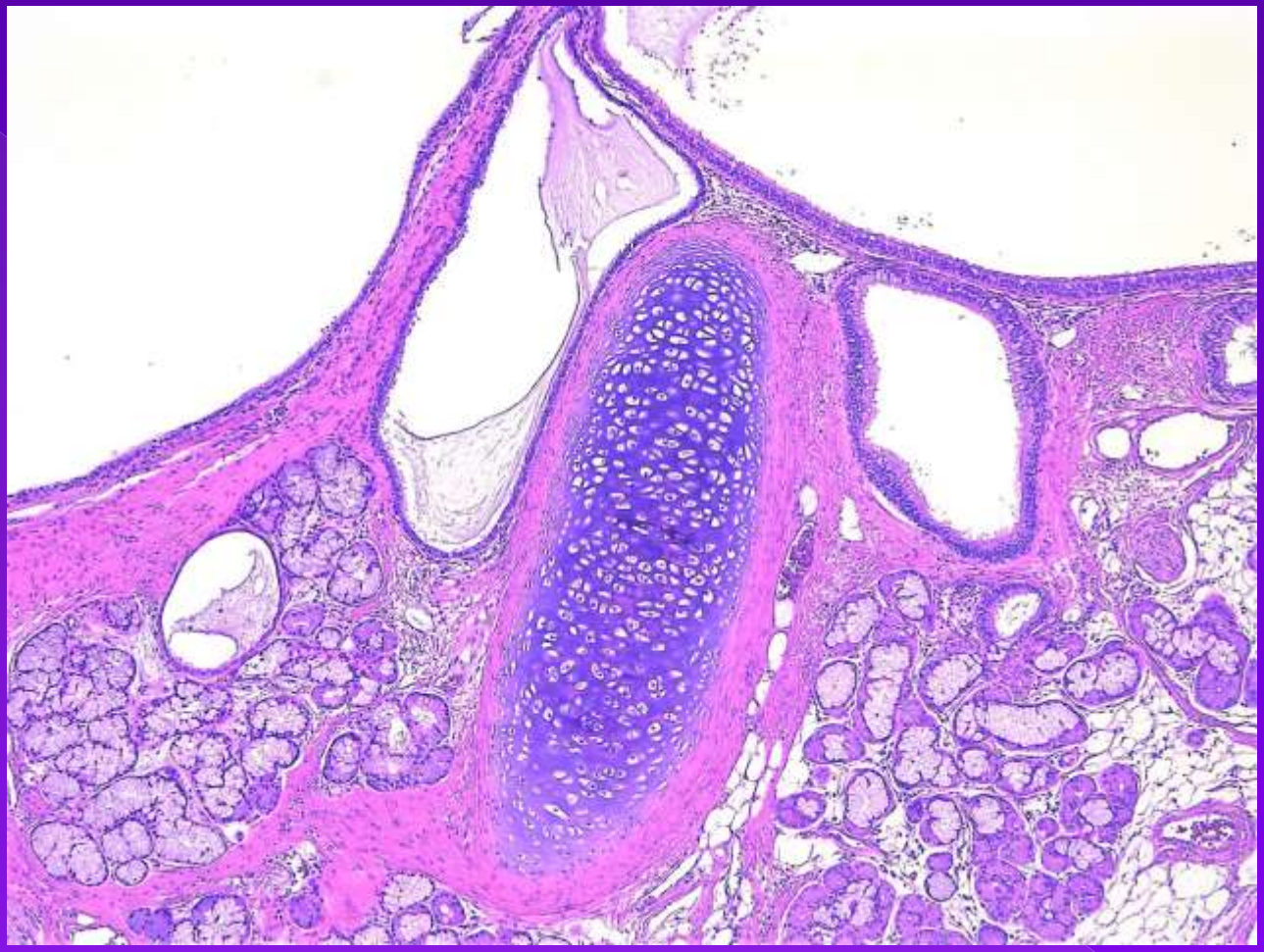


- Fibroadenoma of the female breast contain:
- proliferating ductal elements (adenoma)
- embedded in loose fibrous tissue.



Teratoma:

- is a special type of mixed tumor that contains recognizable mature or immature cells or tissues derived from more than one germ cell layer, and sometimes all three.
- Germ cells have the capacity to differentiate into any of the cell types found in the body.
- they may give rise to neoplasms that contain elements resembling bone, epithelium, muscle, fat, nerve, and other tissues,



Mixture of mature, benign tissues

confusing terminology

- Hamartoma:
  - is a mass of disorganized tissue indigenous to the particular site, such as the lung or the liver.

- Choristoma:
- is a congenital anomaly consisting of a heterotopic nest of cells.