



Neoplasia

Lecture: 8

Dr. Payman Anwar Rashid

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**Faculty of Applied Science
Physiotherapy Department
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Systemic Pathology
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Lecture Outline:

- * Objectives
- * Definition of neoplasia.
- * Classification of neoplasia.
- * Nomenclature of neoplasia.

Objectives:

- 1. To define the terms “neoplasia”, “tumor” and “oncology”.**
- 2. To study the classification of neoplasia.**
- 3. To explain the nomenclature of neoplasia.**

Oncology (Greek oncos = tumor):

Branch of medicine that deals with the study and management of neoplasia.

- **Neo-** new
- **Plasia-** growth
- **Neoplasia**= new growth (tumor)

- **Tumor** is an abnormal mass of tissue the growth of which exceeds and is uncoordinated with that of the normal tissue and persists in the same excessive manner even after cessation of the stimuli which induce the change.

Cancer:

Common term used for all malignant neoplasms.

derived from the **Latin word for crab**, because they adhere to any part that they seize on in an obstinate manner, similar to a crab.



All tumors have two main components :

- **Proliferating part (parenchyma)**
- **Stromal part (mesenchyma) i.e**

supportive connective tissue and blood vessels.

Classification of tumors according to the behavior

- **Benign tumors**
- **Malignant tumors (cancers)**
- **Borderline tumors**

Nomenclature of Neoplasia

Tumor is named according to:

1. Parenchyma, Organ or Cell

- Hepatoma - liver
- Osteoma- bone
- Myoma- muscle

Tumor is named according to:

2. Pattern and Structure, either GROSS or MICROSCOPIC

- **Fluid-filled** → **CYST**
- **Glandular** → **ADENO**
- **Finger-like** → **PAPILLO**
- **Stalk** → **POLYP**

Tumor is named according to:

3. Embryonic origin “cells of origin (histogenetic)”

- Ectoderm which usually gives rise to epithelium:

Tumors are **Epithelial**

- Endoderm which usually gives rise to glands:

Tumors are **Glandular**

- Mesoderm which usually gives rise to connective tissues:

Tumors are **Mesenchymal**

- **Benign tumors (OMA):**

Surface Epithelium: Papilloma (skin, cervix, esophagus)

Glandular epithelium: Adenoma (colon, breast, ovary)

Connective tissues (Mesenchymal)

Adipocytes Lipoma

Fibrocytes Fibroma

Chondrocytes Chondroma

Smooth muscles Leiomyoma

Malignant tumors are collectively referred to as cancers, derived from the Latin word for crab.

Named according to embryonic cell origin

1. Ectodermal, Endodermal, (Epithelial, Glandular):

use the suffix- “CARCINOMA** ” e.g**

- **Pancreatic Adenocarcinoma**
- **Squamous cell carcinoma**

2. Mesodermal (mesenchymal), connective tissue origin:

- Use the suffix “**SARCOMA**” e.g
 - Fibrosarcoma
 - Myosarcoma (Leiomyosarcoma, Rhabdomyosarcoma)
 - Angiosarcoma

“OMA” can be applied also for

1. Malignant tumors :

Hepatoma, lymphoma, glioma, melanoma, Seminoma

2. THREE germ layer tumors :

“Teratoma”

3. Non-neoplastic lesions :

Choristoma – Hamartoma- Hematoma

- Cancers with specific names like:

Ewing's sarcoma (malignant tumor of bone),

Kaposi sarcoma (malignant tumor of blood vessels),

Wilms (malignant tumor of kidney),

Hodgkins disease or lymphoma (malignant tumor of lymph node)

- Tumors of hemopoietic origin (use the suffix emia) like **leukemia** (malignancy of white blood cells).

Tumors arising from primitive embryonal cells called **“Blastomas”** e.g.,

- Retinoblastoma
- Nephroblastoma
- Neuroblastoma
- Medulloblastoma
- Hepatoblastoma

The great majority of these tumors are malignant and most occur in infants and children.

Characteristics of Tumors

Gross appearance of tumors (shape) :

Lump (mass)

Polypoid

Papillary

Nodular

Lobulated

Cystic

Fungating

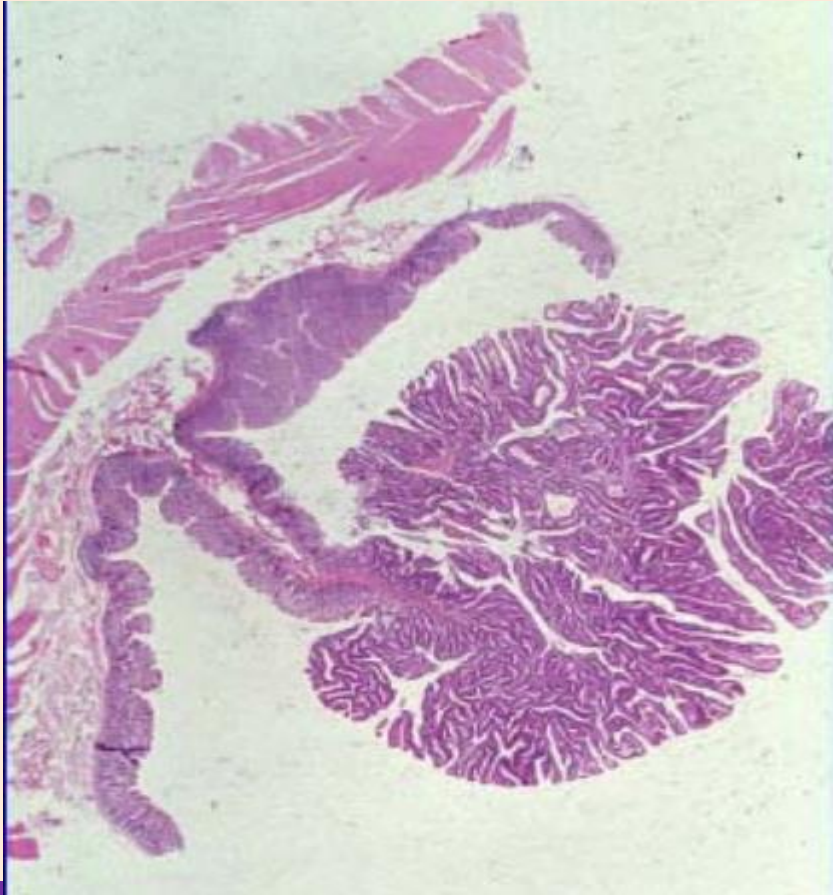
Ulcerated

Pigmented

Appearances of tumors

- Polyps, papillomas and papillary tumors:

All mean tumors projecting from a surface (skin or mucous membrane), either flat or pedunculated.



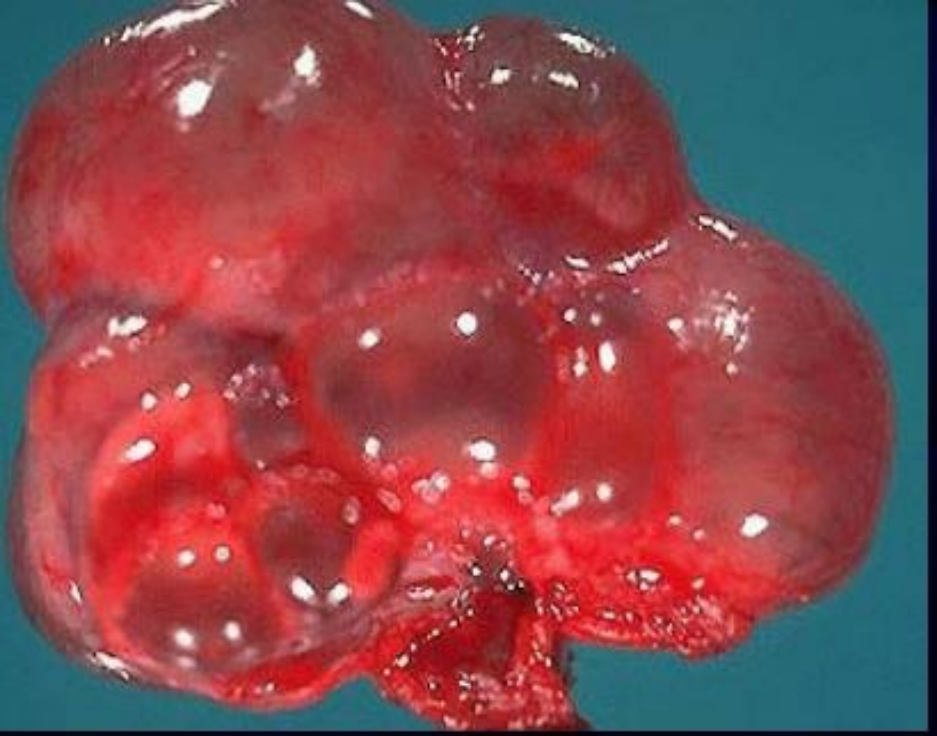


Nodular



lipoma

Lobulated



Cystic
Fungating
Ulcerated





Benign Nevus
“pigmented mole”



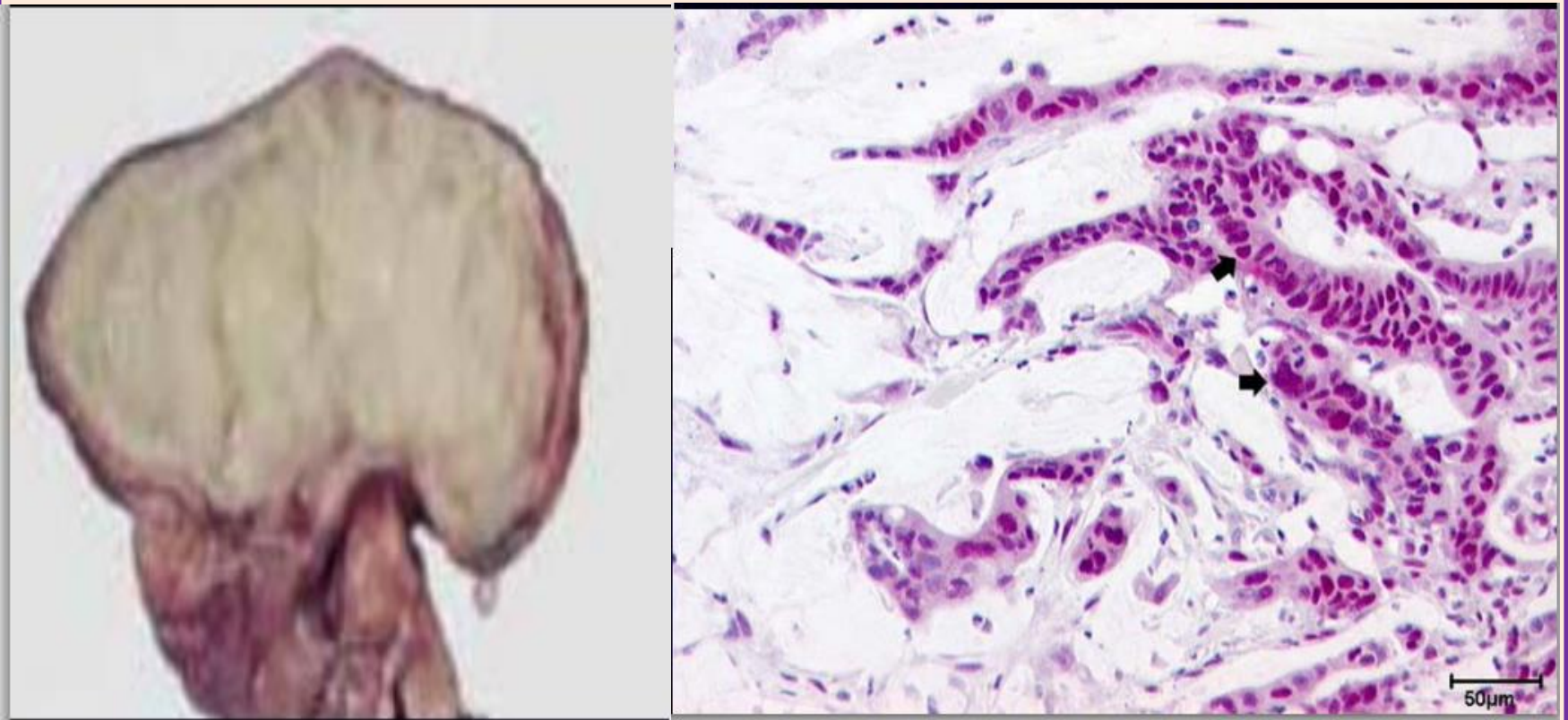
Melanoma
(malignant)

Some tumors may be presented as a hard mass due to a dense fibrous stroma (scirrhous/desmoplastic).

Breast Carcinoma



Presence of a lot of mucin called mucoïd or colloid.

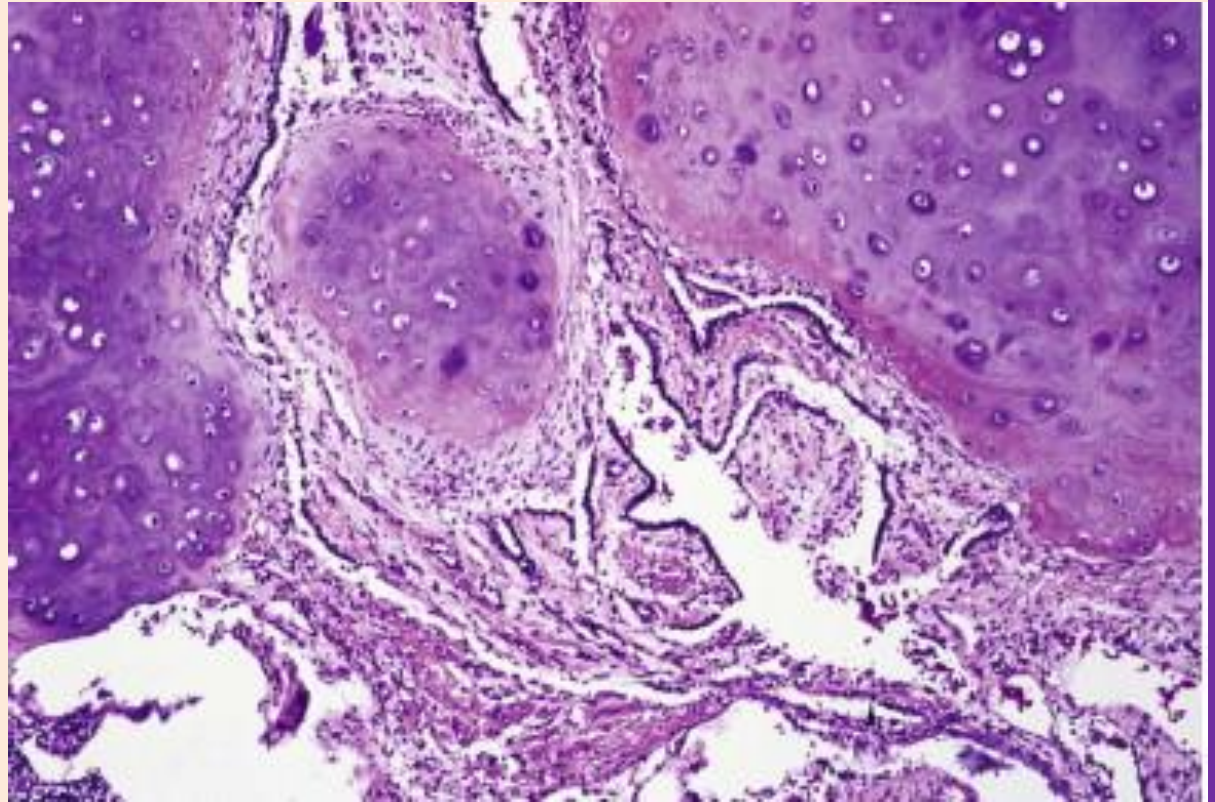


Tumor mimics

- **Some lesions may appear grossly as a tumor mass but microscopically they are rather malformations. E.g.**
- **Hamartoma.**
- **Choristoma.**

Hamartoma:

- Tumor like malformation in which there is abnormal mixing of normal components of the organ, either in the form of change in quantity or arrangement of tissue elements e.g., lung hamartoma.



Choristoma:

- **Different type of tissue ectopic to the region e.g.,**
 - **Gastric mucosa in Meckle's diverticulum,**
 - **Salivary tissue in lymph node.**

- **Both hamartoma and choristoma are present at birth and do not have malignant potential.**

End