Neoplasia and Categories of Neoplasms

Literally the term '**neoplasia**' means new growth; the new growth produced is called 'a neoplasm' or ' a tumour'.

In medicine, we define neoplasm or tumour is *'a mass of tissue which is formed as a result of the abnormal, excessive, uncoordinated, autonomous and purposeless proliferation of cells even after cessation of stimulus for growth which caused it'.*

Oncology refers to the study of neoplasia or tumours (oncos=tumour, logos=study).

Tumour or neoplasms may be:

- Benign or
- Malignant.

Benign tumours are slow-growing and localised without causing much difficulty to the host, whereas **malignant tumours** (commonly known as cancer) proliferate rapidly, spread throughout the body and may eventually cause the death of the host.

Components of tumours

All tumours have 2 basic components:

1. **The parenchyma**
2. **Supportive stroma**

The parenchyma is comprised by proliferating tumour cells and determines the nature and evolution of the tumour whereas the supportive stroma is composed of fibrous connective tissue and blood vessels providing the framework on which the parenchymal tumour cells grow

Nomenclature of Neoplasm

The tumours derive their nomenclature on the basis of the parenchymal component comprising them. The suffix '-oma' is added to denote benign tumours.

Malignant tumours of epithelial origin are called carcinomas and malignant mesenchymal tumours are named sarcomas (sarcos = fleshy)

Exemptions are:

melanoma for carcinoma of the melanocytes, hepatoma for carcinoma of the hepatocytes, lymphoma for a malignant tumour of the lymphoid tissue, and seminoma for a malignant tumour of the testis.

Tumours can be classified into categories:

Special Categories of Tumours

1.Mixed tumours.

This occurs when two types of tumours are combined in the same tumour.

For example:

- Adenosquamous carcinoma is the combination of adenocarcinoma and squamous cell carcinoma in the endometrium.
- Adenoacanthoma is the mixture of adenocarcinoma and benign squamous elements in the endometrium.
- Carcinosarcoma is the rare combination of malignant tumour of the epithelium (carcinoma) and of mesenchymal tissue (sarcoma).
- Collision tumour is the term used for morphologically two different cancers in the same organ which do not mix with each other.
- Mixed tumour of the salivary gland (or pleomorphic adenoma) is the term used for benign tumour having a combination of both epithelial and mesenchymal tissue elements

2.Teratomas.

These tumours are made up of a mixture of various tissue types arising from totipotent cells derived from the three germ cell layers—ectoderm, mesoderm and endoderm.

Most common sites for teratomas are ovaries and testis (gonadal teratomas). But can occur in the head and neck region, mediastinum, retroperitoneum, sacrococcygeal region etc.

Teratomas may be benign or mature (most of the ovarian teratomas) or malignant or immature (most of the testicular teratomas).

3.Blastomas (Embryomas).

Blastomas or embryomas are a group of malignant tumours which arise from embryonal or partially differentiated cells which would normally form blastema of the organs and tissue during embryogenesis. These tumours occur more frequently in infants and children (under 5 years of age) and include some examples of tumours in this age group:

- *Neuroblastoma,*
- *Nephroblastoma (Wilms' tumour),*
- *Hepatoblastoma,*
- *Retinoblastoma,*
- *Medulloblastoma,*
- *Pulmonary blastoma.*

4.Hamartoma

Hamartoma is a benign tumour which is made of mature but disorganised cells of tissues

indigenous to the particular organ e.g. hamartoma of the lung consists of mature cartilage, mature smooth muscle and epithelium.

Thus, all mature differentiated tissue elements which comprise the bronchus are present in it but are jumbled up as a mass.

5.Choristoma

Choristoma is the name given to the ectopic islands of normal tissue. Thus, choristoma is heterotopia but is not a true tumour