CANCER-
PART-I

Introduction, tumor and its types, steps of cancer deveiopment, properties of cancer cells

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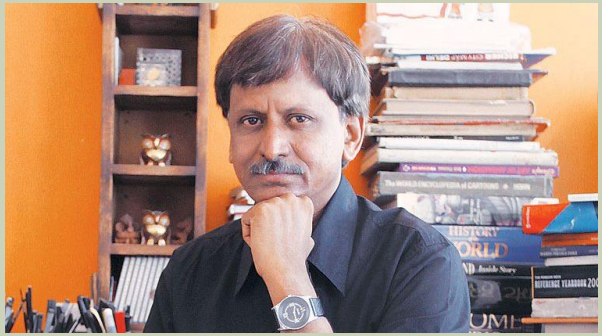
WHAT'S COMMON AMONG THEM?



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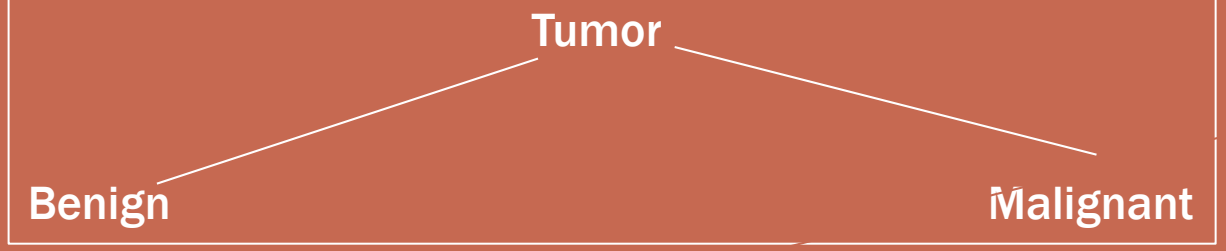
All of them died of CANCER

WHAT'S COMMON AMONG THEM?

All of these people have battled CANCER and are still surviving.

TUMOR –

A tumor is any abnormal proliferation of cells, which may be either benign or malignant.



Benign tumor- remains confined to its original location, neither invading surrounding normal tissue nor spreading to distant body sites.

Malignant tumor- Capable of invading both surrounding normal tissue and spreading throughout the body via the circulatory or lymphatic systems.

GROUPS OF CANCERS (According to type of cell from which they arise)

1. Carcinomas- of epithelial cells, skin or tissue linings
2. Sarcomas- of connective tissues including muscles, bones, cartilages and fibrous tissues.
3. Leukemias- includes cancers of blood/bone marrow
4. Lymphomas- of lymphatic tissues
5. 5. Melanomas- of pigment producing cells , such as moles.

CANCERS (According to tissue of origin)
Examples- lung carcinomas, breast carcinomas etc.

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STEPS OF TUMOR DEVELOPMENT

- TUMOR INITIATION- It is the result of a genetic alternation leading to abnormal cell proliferation. This proliferation then leads to the outgrowth of a population of clonally derived tumor cells.
- TUMOR PROGRESSION- It continues as additional muattions occur within cells of the tumor population. Some of these mutations confer a selective advantage to the cell, such as more rapid growth.

CLONAL SELECTION

It is a process where a new clone of tumor cells have evolved on the basis of its increased growth rate or other properties such as survival, invasion or metastasis that confers a selective advantage to the cells.

PROPERTIES OF CANCER CELLS

- Do not follow density dependent inhibition.
- Do not follow contact inhibition.
- Independent of extracellular growth factors.
- Reduced cellular adhesion
- Loss of anchorage dependence
- Defective differentiation
- Angiogenesis
- Metastasis
- Failure to undergo apoptosis

THANK YOU