Terminology of Neoplasms and Tumors

- Neoplasm - new growth
- Tumor - swelling or neoplasm
- Leukemia - malignant disease of bone marrow
- Hematoma - bruise or contusion

Classification of Neoplasms

- Cancer - general term for malignant tumor or neoplasm
- Classified according to:
  - Appearance and growth pattern
  - Type of body tissue from which they arise

Classification of Neoplasms

- Classification of tumors:
  - Benign - confined to local area
  - Malignant - spreads to other areas
  - Carcinoma - largest group of malignancy
  - Lymphoma - malignant neoplasms of blood-forming organs and lymphatic tissues

Classification of Neoplasms

- Classification of tumors:
  - Sarcoma - neoplasms of connective tissue
  - Melanoma - malignant neoplasm of melanocytes
  - Glioma - tumors of glial cells of brain
Benign and Malignant Neoplasms

- Benign tumors
  - Growth in a particular area but not invasive or metastatic
  - Encapsulated in a capsule
  - Easier to excise
  - Limited growth potential

- Malignant tumors
  - Without structure or function of normal cells
  - Surface area is not encapsulated

Treatment

- Treatment Options:
  - Preventive - prevent disease from starting
  - Palliative - preventing pain and discomfort but does not seek to cure the disease

Hyperplasias and Neoplasms

- Hyperplasia and Neoplasms
  - Both mean overgrowth of cells causing increase in size of tissue
  - Both produce masses identified as hyperplasia or neoplasm
  - Hyperplasias and neoplasms differ in the cause and extent of their growth

Development of Malignant Neoplasm

- Genetic mutation due to:
  - Radiation
  - Viruses
  - Carcinogens – cancer-causing agent
  - Chemicals

- Carcinoma in Situ - atypical cells in epithelial layer of tissue; have not invaded surrounding tissue
- Invasion of precancerous cells - final stage of cancer development
Invasion and Metastasis of Cancer

- Carcinomas and epithelial tissue neoplasms commonly spread
- Lymph nodes filter cancer cells
- Absence of lymph node involvement is favorable, making surgical cure possible
- Sarcomas shed cells into bloodstream

Grading and Staging of Cancer

- Grading determines degree of abnormality
- Staging considers degree of spread

Causes of Cancer

- Cause is unknown
- Carcinogenesis progresses slowly; may start, stop, or be reversed
- Usually there is continual progression
- Prevention and cure of cancer depend on finding initiating agents

Causes of Cancer

- Chemical carcinogens
- Hormones
- Radiation
- Viruses
- Genetic predisposition

Causes of Cancer

- Personal risk behaviors
- Diet
- Sexual behavior
- Alcohol use

Cancer Prevention

- Preventive measures:
  - Do not smoke
  - Limit alcohol intake
  - Protect skin from excessive sun exposure
  - Hormone therapy only as long as necessary
Cancer Prevention

- Preventive measures:
  - Avoid heavily polluted air, household solvents, and paint thinners
  - Monitor calorie intake and exercise

Frequency of Cancer

- Second leading cause of death in United States
- One in two men/one in three women
- Cancer affects people of all ages, both male and female
- Most common is basal and squamous cell skin cancer

Diagnosis of Cancer

- Prognosis is best if treated early
- Routine screening is helpful
- May also be found accidentally
- Once discovered, biopsy is recommended

Signs and Symptoms of Cancer

- Pain
- Obstruction
- Hemorrhage and anemia
- Fracture
- Infection
- Cachexia
Cancer Treatment

• Surgery
• Chemotherapy
• Radiation