Metastatic Cancer: The Migration of Cancerous Cells

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**What is Cancer?**

Cancer is an uncontrolled growth of tissue due to dysfunction in the cell cycle control. It is caused by cancer cells, which are malignant tumors, growing uncontrollably. Benign tumors are non-cancerous and do not grow back, whereas malignant tumors sometimes do.

**Cancer Development**

- **Non-cancerous conditions**
  - Small adenoma
  - Intermediate adenoma
  - Large adenoma plus carcinoma
  - Invasion of blood and lymphatic vessels

**Cancerous Conditions**

- **Cancer Development Schematic**

**What is Metastasis?**

Metastasis is the process by which cancer cells spread away from the primary tumor to other parts of the body. This can occur through the lymphatic system or bloodstream. Cells break away from the primary tumor and travel to other areas of the body, where they can potentially form new tumors.

**Cancerous Conditions**

- **Cancers that are commonly studied**
  - Prostate Cancer
  - Breast Cancer
  - Lung Cancer
  - Colon Cancer
  - Melanoma

**Development of Metastatic Cancer**

- **Metastatic Cancer**: A cancer that has spread from the primary site to other distant or local parts of the body.

**Types of Metastasis**

- **Type 1**: Metastases are independent of the primary tumor. The cancer cells may develop in multiple locations.
- **Type 2**: Secondary tumors form at sites distant from the primary tumor, but the primary tumor remains active.

**Current Treatments**

- **Surgery**
- **Chemotherapy**
- **Radiation Therapy**
- **Targeted Therapy**
- **Immunotherapy**

**Future Treatments**

- **Immunotherapy**
- **Cryosurgery**
- **Chemotherapy**
- **Radiation Therapy**

**Immune system’s role against cancer**

The body's immune system plays a crucial role in fighting cancer. It recognizes cancer cells as foreign and initiates an immune response to eliminate them. Understanding how cancer cells evade this response and how the immune system can be harnessed for therapeutic purposes is essential for developing effective treatments.

**References**


**Acknowledgements**