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# Neoplasia I

Tuesday, May 06, 2008  
1:00 PM

- **Neoplasm “Tumor”** – A mass of new **clonally proliferating** cells
  - Autonomous, uncontrolled growth, persistent/irreversible, no adaptive function
  - “oma” = neoplasm, signaled by **non-equilibrium growth**, and **start/stop disobedience**
  - **Benign** – not invading/metastasizing
  - **Malignant** – can **invade tissue** and **metastasize**
- **Hyperplasia** – an increase in the **number of cells** in tissues **capable of dividing**
  - **Hormonal** – ex: *lactating breast*
  - **Compensatory** – ex: *callus*
- **Hypertrophy** – increase in the **size of cells**; ex: *heart muscle*
- **Metaplasia** – a **reversible** change in which one adult cell type is replaced by another
  - Usually an **adaptive substitution** of cells sensitive to stress by cells which can deal w/ stress
  - Ex: **endocervix** – changes from **glandular** --> **squamous** epithelium (controlled, reversible)
  - Ex: **respiratory** – changes from **squamous** --> **“intestinal” Barrett’s** mucosa due to **acid reflux**
- **Hamartoma** – a mass of cells of the cell type normal for tissue, but **abnormally arranged/jumbled**
  - **QUIZ: Vascular hamartoma** – hemangioma
- **Choristoma** – a mass of ectopic tissue that is normal, but growing in abnormal location
  - **Embryologic accident** – piece of organ present in wrong spot
  - **Pancreas** – a nodule of pancreatic tissue growing within the **wall of stomach**

	<b>Benign</b>	<b>Malignant</b>
<b>Invasion</b>	Smooth, cohesive, delineated mass	Invasive
<b>Structure</b>	Ordered structure	Cellular disarray
<b>Nuclei/Cytoplasm</b>	Low nuclear/cytoplasmic ratio	High nuclear/cytoplasmic ratio
<b>Morphology</b>	Cell & nuclei are same shape & size	Cells & nuclei are <b>pleomorphic</b>
<b>Nuclei Shape</b>	Regular, less division	Hyperchromatism, irregular, <b>mitotic figures</b>

- **Adenocarcinoma** – A “gland” carcinoma where glands are being made, **malignant**
- **Adenoma in colon** – A benign neoplasm can be dysplastic here, although usually not
- **Dysplasia**
  - **Dysplasia** – a **morphologic alteration** in both **cytology** and **arrangement** of epithelial cells
    - Not only look abnormal themselves, but don’t relate to each other in normal fashion
    - Severe dysplasia = **carcinoma in situ**, *cancer precursor*
  - Show disordered growth, abnormal variation in size/shape, show **hyperchromatism, pleomorphism**
  - Ex: *skin layers* – becoming less stratified = dysplasia --> **cancer precursor**
- **Intraepithelial Neoplasia**
  - = **Dysplasia**, in Cervix (CIN I to III), Vulva VIN, Vagina VAIN, Anus AIN, Prostate PIN, Breast DCIS
- **QUIZ: Malignancy Grading/Staging**
  - **Grade** – degree of *differentiation* --> well, moderate, poor, **anaplastic**
  - **Stage** – degree of *progression* (**size, depth of invasion, lymph node metastases, distant metastases**)
    - **T** – **T**umor = size/depth
    - **N** – lymph **N**ode status
    - **M** – **M**etastasis