Breast Pathology

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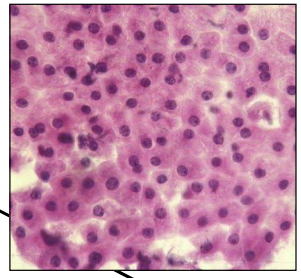
Benign

Apocrine metaplasia



- *Granular cytoplasm*
- *Apical snouting*

Gynecomastia

- *Large breasts in a male*
- *Only ductal cells present*
- *A/w excess hormone stimulation (cirrhosis, obesity, anti-HTN meds, testicular tumors etc)*

Collagenous Spherulosis

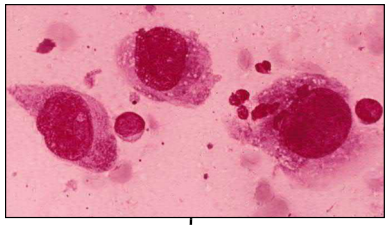
Pseudoangiomatous Stromal Hyperplasia (PASH)

Papillary Lesions

- Intraductal Papilloma
- Nipple Adenoma
- Intraductal Papillary Carcinoma
- Papillary adenocarcinoma

Skin

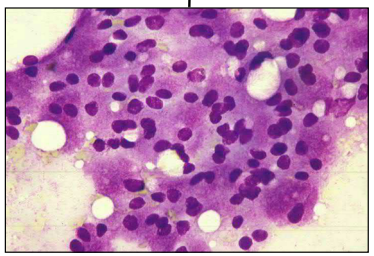
Paget's Disease



- *Nipple involvement; Variation in pigmentation*
- *More aggressive in the breast.*
- *Inc risk of underlying cancer (DCIS or Invasive)*
- *Must rule out metaplastic carcinoma*

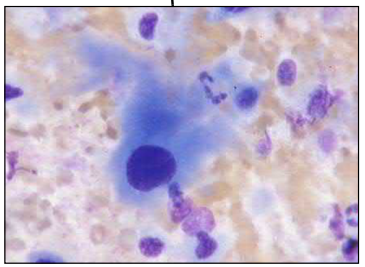
Molluscum Contagiosum

Granular Cell tumor



- *Pseudoepitheliomatous hyperplasia*
- *Granular cytoplasm*
- *POS: S100+, CD68+*

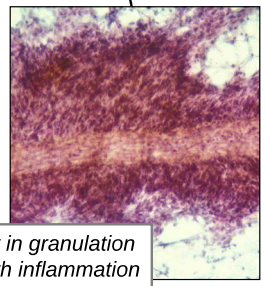
Squamous Cell Carcinoma



- *Robin's egg blue, dense cytoplasm*
- *"Orangeophilia"; "Tadpole" cells*
- *Desmosomes*

Inflammatory

- Acute Mastitis — *Abundant inflammation (PMNs)*
- Diabetic (Lymphocytic) Mastopathy — *Lymphocytes*
- Granulation tissue



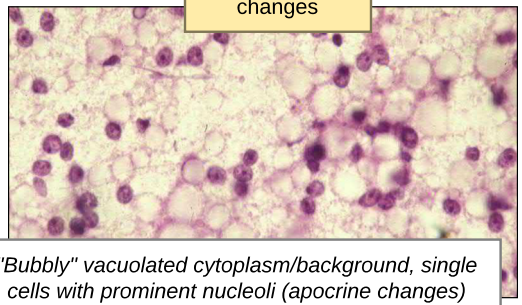
Capillary in granulation tissue with inflammation in background

- Fat Necrosis

History of trauma to breast, Multinucleated giant cells, Variable sized fat vacuoles, Mixed inflammation

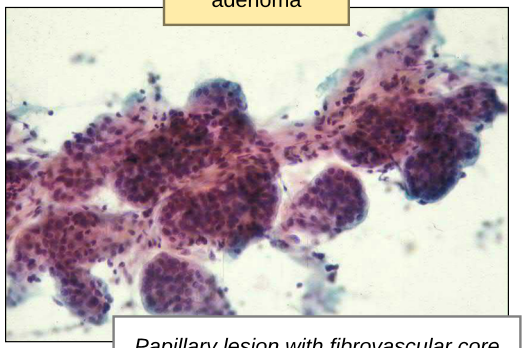
Lactation Changes

- Lactational changes



"Bubbly" vacuolated cytoplasm/background, single cells with prominent nucleoli (apocrine changes)

- Lactational adenoma



Papillary lesion with fibrovascular core

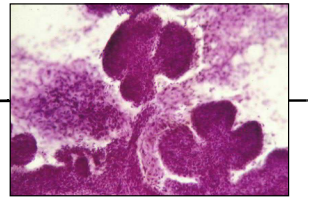
Fibrous Lesions

Nuclear beta catenin +

- Fibromatosis
- Fibroadenoma (FA)

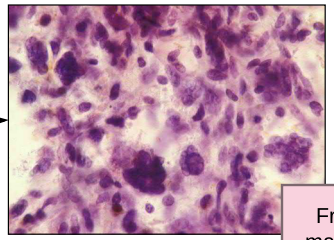
Mobile, well circumscribed fibrous lesion composed of epithelial & myoepithelial cells.
"Staghorn branching" structures;
Dichotomous branching structures
Can be cellular & discohesive

- Phyllodes tumor



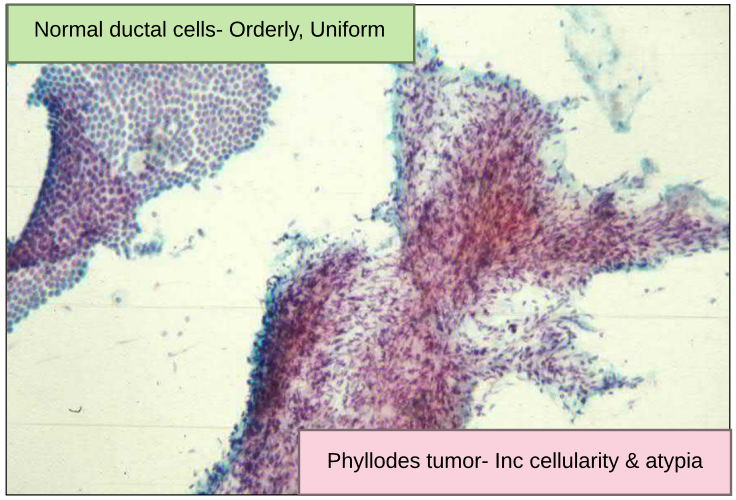
Older patient population
Larger & more cellular than FA
Atypia in stromal component;
Requires adequate margins

- Fibrocystic Changes (FCC)
  - *Apocrine metaplasia*
  - *Cyst formation, Duct ectasia*
  - *Fibroadenoma*
  - *Intraductal papilloma*
  - *Sclerosing adenosis*
  - *Stromal Fibrosis*
  - *Usual Ductal Hyperplasia*



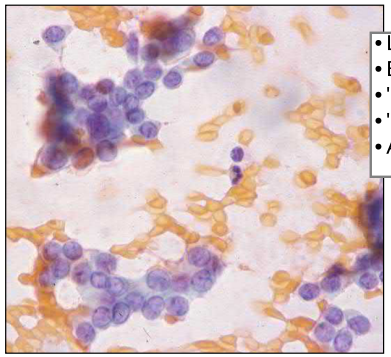
Frankly bizarre cells in a malignant Phyllodes tumor

Normal ductal cells- Orderly, Uniform

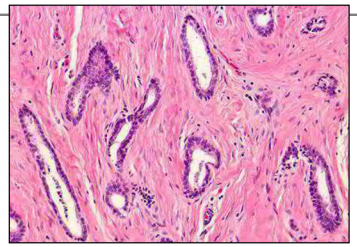


Phyllodes tumor- Inc cellularity & atypia

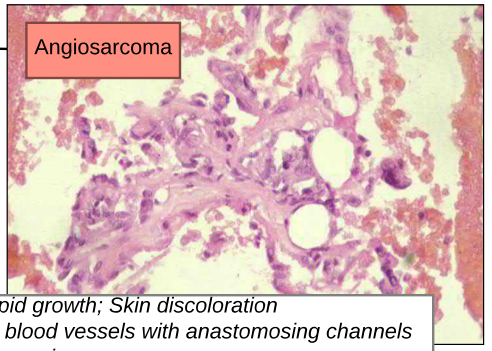
Other Breast Cancers



- Low grade, Well differentiated tumor
- Best prognosis overall
- "Tear drop"/ angulated glands (H&E)
- "Arrowhead" arrangment of cells
- Apocrine snouts

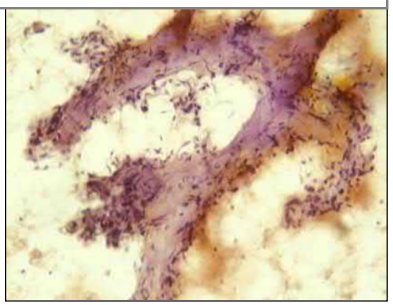


Tubular Carcinoma

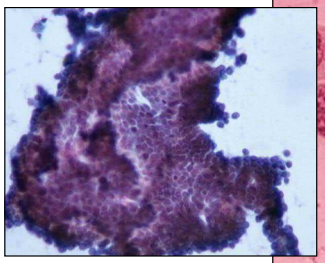


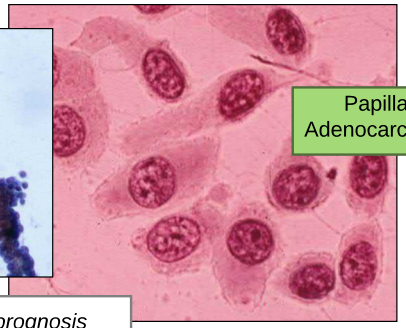
Angiosarcoma

- *Rapid growth; Skin discoloration*
- *Inc blood vessels with anastomosing channels*
- *Primary in young*
- *Secondary to radiation in old*
- *Secondary to lymphedema= Stuart-Treves*



Triple Negative Cancers: Adenoid Cystic Medullary Metaplastic Secretory

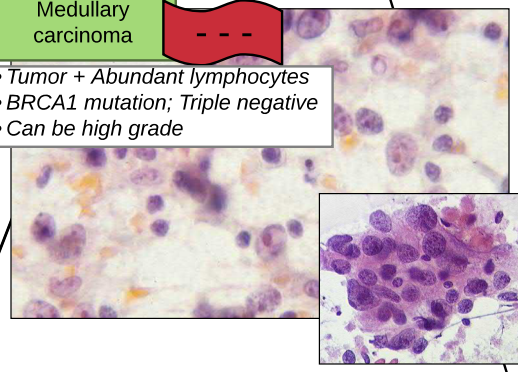




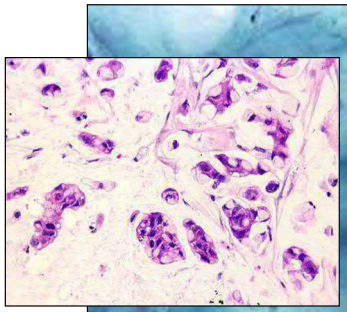
Papillary Adenocarcinoma

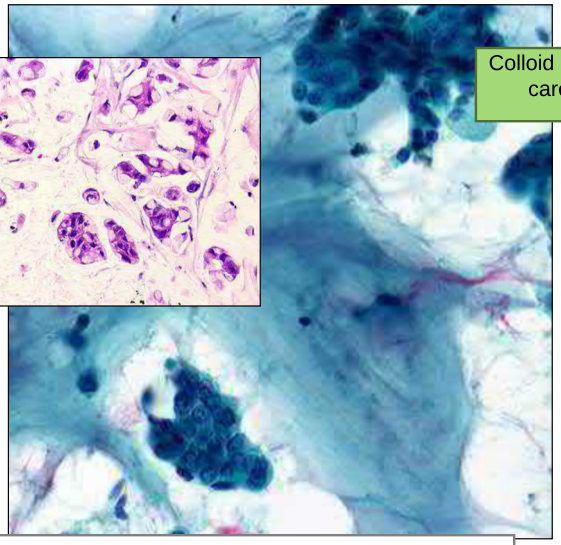
- *Older patient; Favorable prognosis*
- *Papillae with columnar shaped cells*

Medullary carcinoma



- *Tumor + Abundant lymphocytes*
- *BRCA1 mutation; Triple negative*
- *Can be high grade*





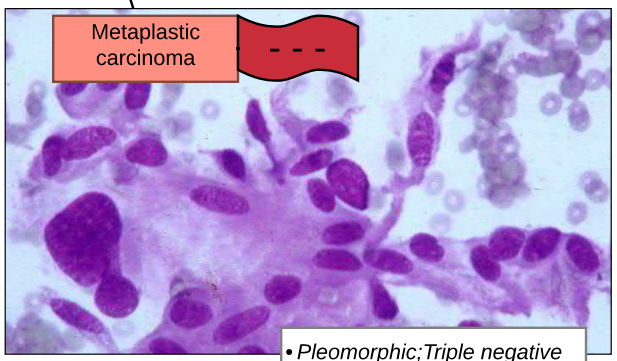
Colloid (Mucinous) carcinoma

- *Abundant mucin with tumor cells "floating" within it*
- *Can have high grade cytology*

Adenoid Cystic Carcinoma

- *Cystic spaces with "gumballs" of hyaline basement membrane material*

Metaplastic carcinoma



- *Pleomorphic;Triple negative*

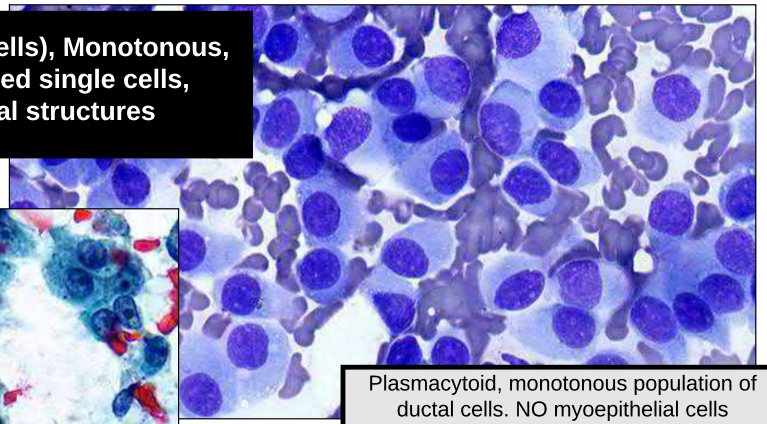
Secretory Carcinoma

Ductal

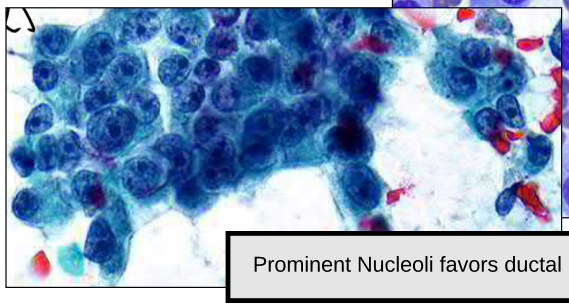
BREAST NEOPLASIA

- Usual Ductal Hyperplasia (UDH)
- Atypical Ductal Hyperplasia (ADH)
- Ductal Carcinoma In Situ (DCIS)
- Invasive Ductal Carcinoma (IDC)

Single cell population (NO myoepithelial cells), Monotonous, Plasmacytoid cells in clusters + scattered single cells, PROMINENT NUCLEOLI, vague ductal structures

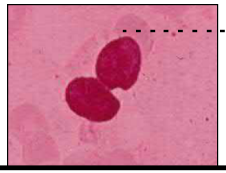


Plasmacytoid, monotonous population of ductal cells. NO myoepithelial cells



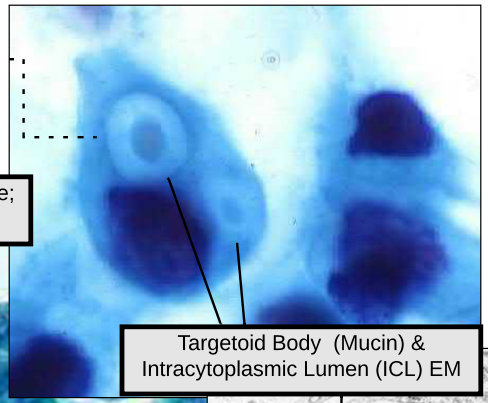
Prominent Nucleoli favors ductal

NO Myoepithelial cells!

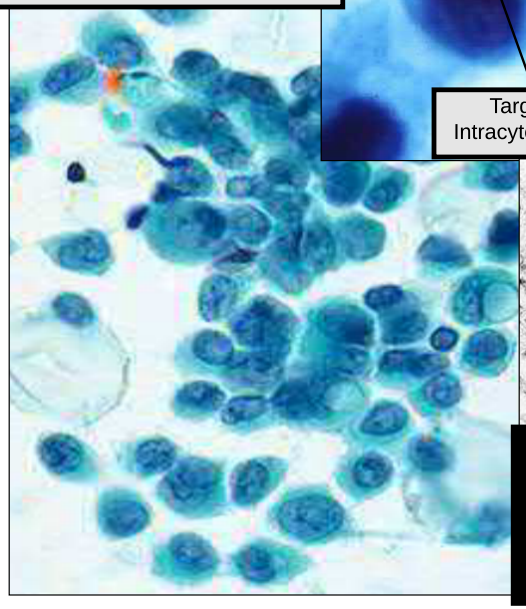


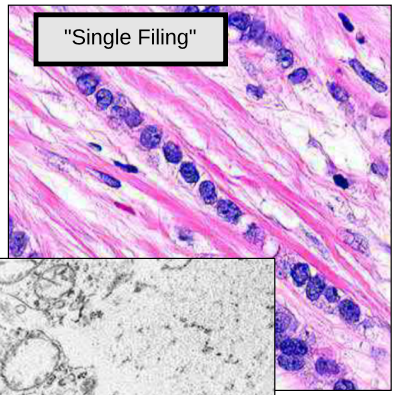
Normal myoepithelial cells are football shaped or spindled & often in doublets

NOTE: Ductal proliferations can sometimes have mucin droplets or targetoid bodies, but much more common in lobular proliferations.



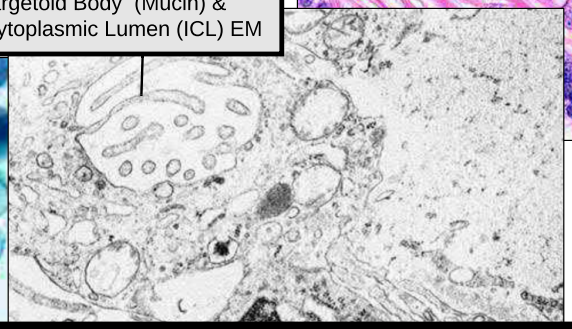
Smaller cells with variation in size; contain mucin droplets





"Single Filing"

Targetoid Body (Mucin) & Intracytoplasmic Lumen (ICL) EM



Single cell population (NO myoepithelial cells), Smaller cell size, Cytoplasmic vacuole/mucin droplet= "targetoid body"- Intracellular lumen (ICL) favors lobular over ductal "Single file" lining up of cells

Lobular

BREAST NEOPLASIA

- Invasive Lobular Carcinoma (ILC)
- Lobular Carcinoma In Situ (LCIS)
- Atypical Lobular Hyperplasia (ALH)
- Lobular Hyperplasia