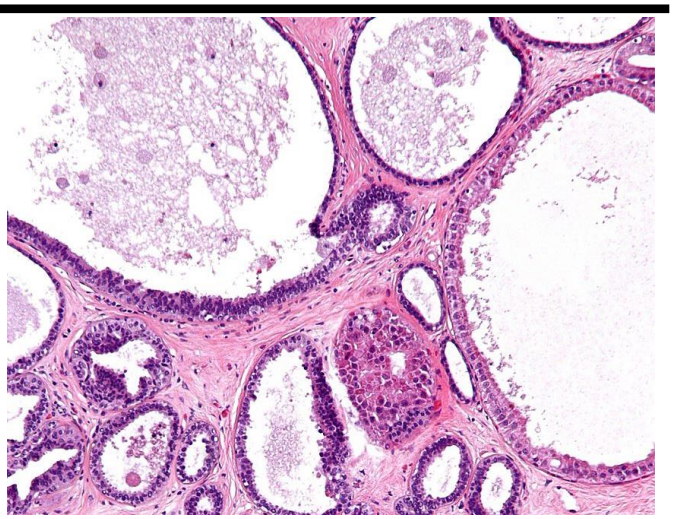
Reactive and Non-Proliferative Lesions

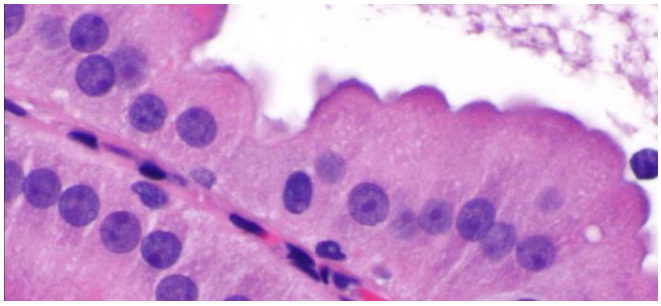
Non-Proliferative Lesions

Fibrocystic Change



Most common non-proliferative lesion of the breast!
No significant increased risk of cancer.

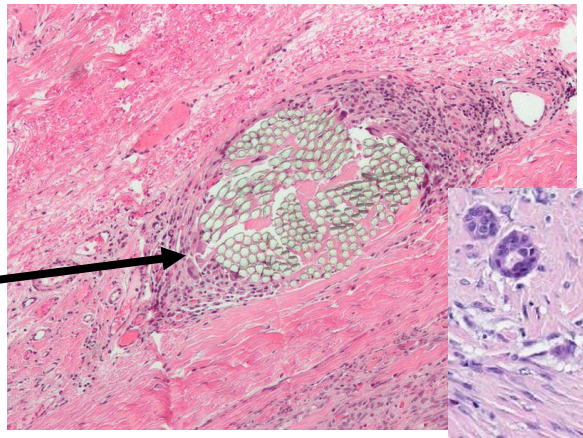
Cysts = fluid filled, dilated terminal duct lobular units.
Still have inner epithelial and outer myoepithelial cells.
Epithelium may be markedly attenuated.
Frequent apocrine metaplasia. Rarely squamous metaplasia
May contain calcifications
Cyst walls often contain areas of **fibrosis**

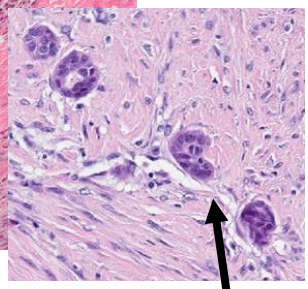


Apocrine metaplasia = enlarged epithelial cells with abundant, granular, eosinophilic cytoplasm and apical luminal blebbing. Round nuclei with prominent nucleoli. Can sometimes be papillary. Can enhance on MRI. ER (-), AR (+). Sometimes fewer myoeps.

Inflammatory/Reactive Lesions

Biopsy Site Changes



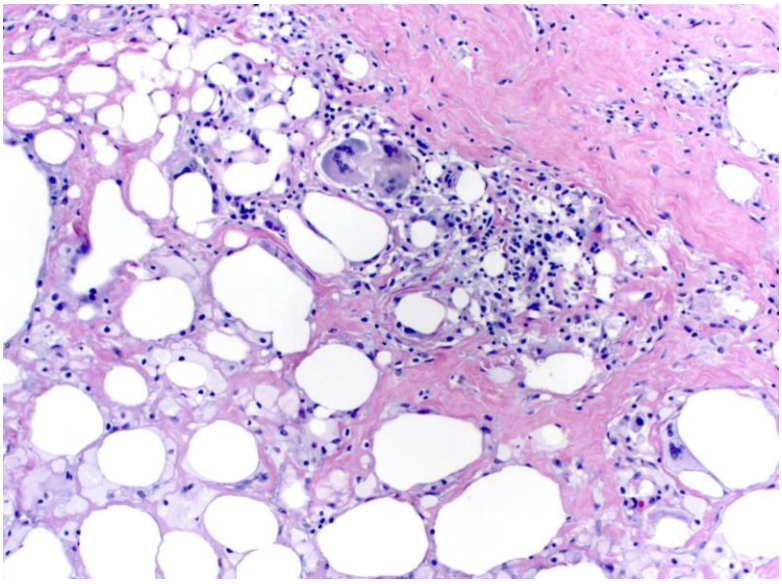


Changes after a biopsy/prior surgery.

Frequent changes include:
Organizing hemorrhage (with hemosiderin laden macrophages and blood)
Fat necrosis (with foamy macrophages)
Foreign body giant cells and/or foreign material
Granulation tissue
Scarring/fibrosis
Acute and chronic inflammation
Squamous metaplasia

Pitfall Warning: After a biopsy, there can be "**epithelial displacement**" where epithelium (benign or atypical) can be found within the stroma and/or vascular spaces! This is particularly common with papillary lesions. This can result in the *erroneous diagnosis of invasive carcinoma*. When the epithelial fragments are confined to biopsy site, a diagnosis of epithelial displacement should be favored! A diagnosis of invasive carcinoma should only be made if epithelium is found in the stroma away from the biopsy site or if there are other characteristic findings.

Fat Necrosis



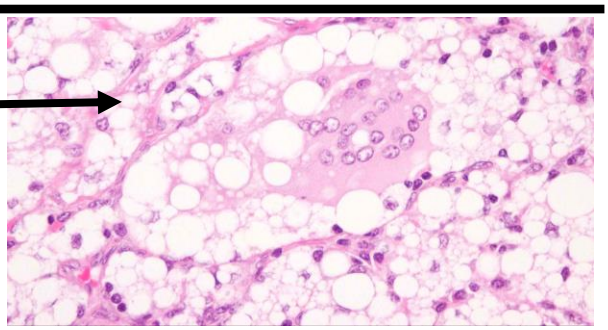
After injury (surgery, biopsy, or trauma). However, sometimes incident is not remarkable.

<u>Can mimic malignancy clinically and/or radiographically</u>

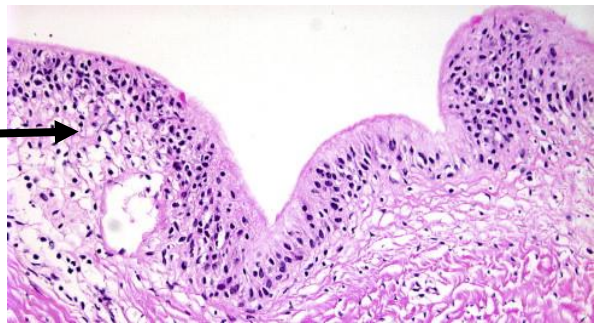
Cystic spaces surrounded by lipid-laden ("foamy") macrophages
Variable acute and chronic inflammation

Early→ hemorrhage
Late→ fibroblastic proliferation and collagen deposition

Reactions to Foreign Material

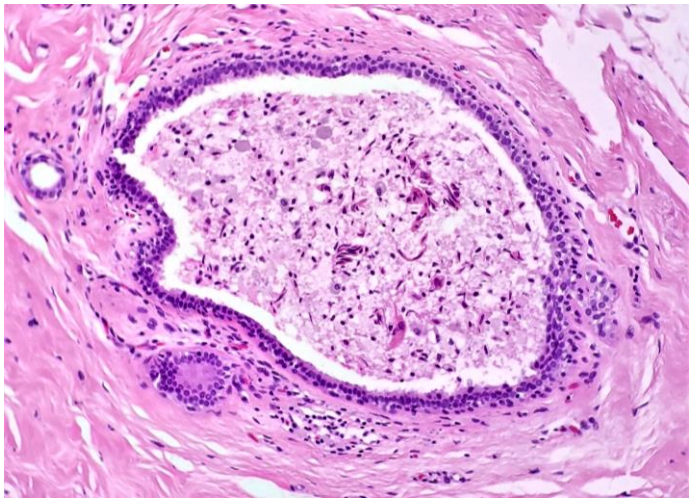


<u>Silicone granuloma:</u>
Silicone leakage can be seen even without frank implant rupture. Oval cystic spaces that appear empty or have amorphous pale material with histiocytes and giant cells. Can be present in capsule or in draining axillary lymph nodes.



<u>Synovial Metaplasia:</u>
Implant capsules can develop a lining essentially identical to synovium

Duct Ectasia



aka **Periductal Mastitis**

Primarily perimenopausal and post-menopausal women. Can present with pain, discharge, mass, or calcifications

<u>Varying amounts of:</u>

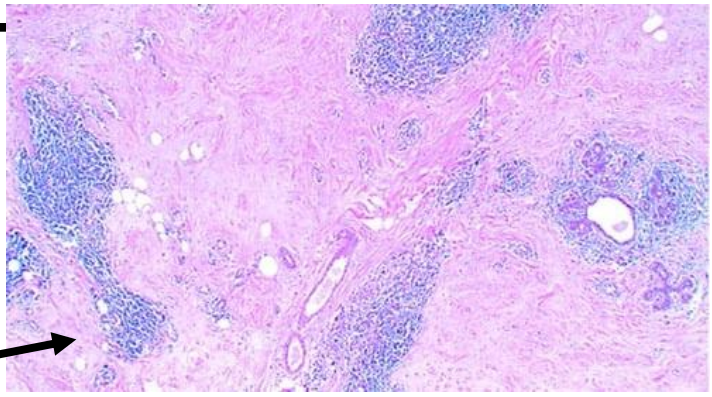
- Periductal inflammation
- Periductal fibrosis
- Duct dilation
- Inspissated lipid-rich material, with foamy macrophages that often infiltrate the wall
- Squamous metaplasia

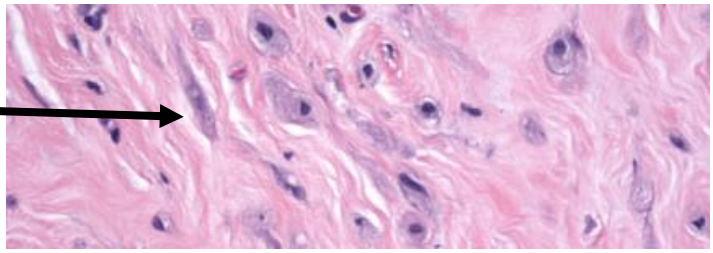
Diabetic Mastopathy

aka Lymphocytic Mastopathy

Typically **young to middle-aged women**, most often with **type 1 diabetes**, but can be seen with other autoimmune disorders, presenting with a mass.

Characteristic findings:
1. Dense, keloid-like fibrosis
2. Periductal, perivascular, and perilobular lymphocytic infiltrates (mostly B cells)
3. Epithelioid myofibroblasts in the stroma





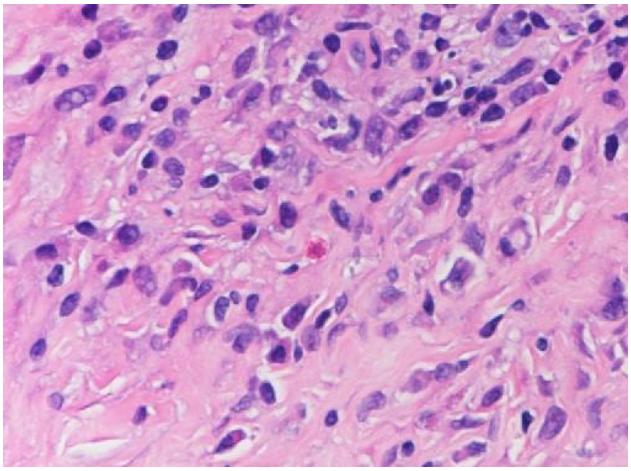
IgG-4 Related Mastitis

Discrete painless masses.

Classic findings of IgG-4 related disease:
1. Dense lymphoplasmacytic infiltrate,
2. Storiform pattern of **fibrosis**,
3. Obliterative phlebitis.

IHC: **Increased IgG-4 positive plasma cells**

Often accompanying lobular atrophy



Granulomatous Mastitis

Granulomas can be seen with a variety of conditions including sarcoidosis, prior biopsy, duct ectasia, and infections (e.g., mycobacteria and fungi). **So, one must do bug stains!**

Sometimes it can be idiopathic.

Corynebacterium causes a granulomatous infection with abundant neutrophils and central lipid vacuole.