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


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.

Can mimic malignancy clinically and/or radiographically.

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

Early $\rightarrow$ hemorrhage
Late $\rightarrow$ fibroblastic proliferation and collagen deposition

---

**Reactions to Foreign Material**

**Silicone granuloma:**
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.

**Synovial Metaplasia:**
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

**Varying amounts of:**
- 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.