Pathology

- **Cancer histology**
  - Invasive ductal
  - Invasive lobular
  - Other invasive
  - DCIS
- **High-risk lesions**
  - LCIS
  - Sclerosing lesion
  - ADH/ALH
Pathology

High risk lesions
- Lobular carcinoma in situ (LCIS)
  - Almost always an incidental finding in biopsy performed for another reason
    - Not typically associated with calcifications or stromal density
  - Bilateral in 20-40% (compared to 10-20% of DCIS)
  - More common in young women
    - 80-90% occur prior to menopause
  - Not a true neoplasm, but is marker of breast cancer risk!
    - Invasive carcinoma develops in 25-35% (~1% per year) in same or opposite breast
    - Cells of LCIS & invasive lobular carcinoma identical & both lack expression of e-cadherin (responsible for epithelial cell adhesion)
      » Single detached cells
Pathology

• High risk lesions
  – Lobular carcinoma in situ (LCIS)
  – Treatment:
    • Risk reduction
      – Lifestyle modifications (e.g. exercise, diet, weight loss)
      – High risk screening (self breast exam, frequent clinical breast exam, MRI controversial)
      – Chemoprevention (Tamoxifen and Raloxifene)
      – Risk reducing surgery (e.g. bilateral prophylactic mastectomy)
      – Close clinical follow-up & mammographic screening (commonly)
    • Morphology:
      – Identical to cells of atypical lobular hyperplasia (ALH) & invasive lobular carcinoma
      – Small cells with oval/round nuclei that do not adhere to one another
      – Rarely distorts underlying architecture
      – Almost always expresses hormone receptors
Pathology

• Benign epithelial lesions
  – Nonproliferative breast changes
    • No increased risk of carcinoma
    • Fibrocytic changes, fibrosis
    • Cysts, micro- & macrocystic change
    • Apocrine metaplasia
    • Adenosis
    • Minimal epithelial hyperplasia (2-4 cells thick)
  – Proliferative breast disease without atypia
    • Slight increased risk of carcinoma: 2x
    • Sclerosing adenosis, Complex sclerosing lesion (radial scar), Moderate epithelial hyperplasia (> 4 cells thick), Papillomatosis, Multiple intraductal papillomas
  – Proliferative breast disease with atypia
    • Moderate increased risk of carcinoma: 4-5x
    • Atypical ductal hyperplasia (ADH)
    • Atypical lobular hyperplasia (ALH)
Pathology

• Benign high-risk lesions found on core needle biopsy
  - Atypical lesions (e.g. LCIS, ADH, radial scar, etc.) detected on core needle biopsy should be referred to a surgeon to discuss excision
  - Occasionally an occult underlying malignancy may be present and only detected after excision of the atypical lesion
Pathology

- Benign epithelial lesions
  - Moderate increased risk of carcinoma (proliferative breast disease with atypia)
    - Atypical ductal hyperplasia (ADH)
      - Present in 5-17% of biopsies performed for calcifications
      - Cellular proliferation resembling DCIS
    - Atypical lobular hyperplasia (ALH)
      - Incidental finding found in <5% of biopsies
      - Cellular proliferation resembling LCIS
  - Both ADH & ALH lack sufficient qualitative or quantitative features for diagnosis of carcinoma in situ
  - Put patient in high risk screening program
    - Consider for interventional therapy (e.g. tamoxifen)