

BENIGN BREAST MASSES

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I have no financial disclosures

Outline

Benign masses

- Fibroadenoma
- Papilloma

High risk masses

- Radial scar
- Flat epithelial atypia
- Atypical ductal hyperplasia

Lobular neoplasms

- ALH
- Classic LCIS
- Pleomorphic LCIS

Benign Masses

- Fibroadenoma
- Papilloma
- Radial Scar

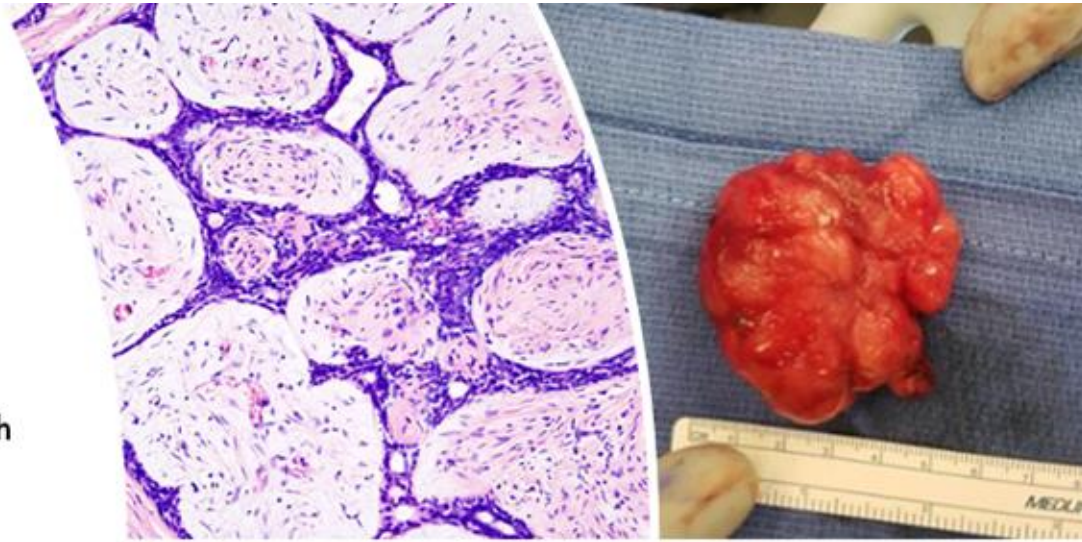
No future increased risk of breast cancer from these breast lesions

Fibroadenoma

- Most common benign breast tumor
  - Classified as a proliferative breast lesion
- Contains glandular and fibrous tissue
- Etiology unknown, but likely related to hormonal regulation
- Most present in reproductive years (15-35), regression with calcifications after menopause
- For majority of women there is no increased risk of breast cancer

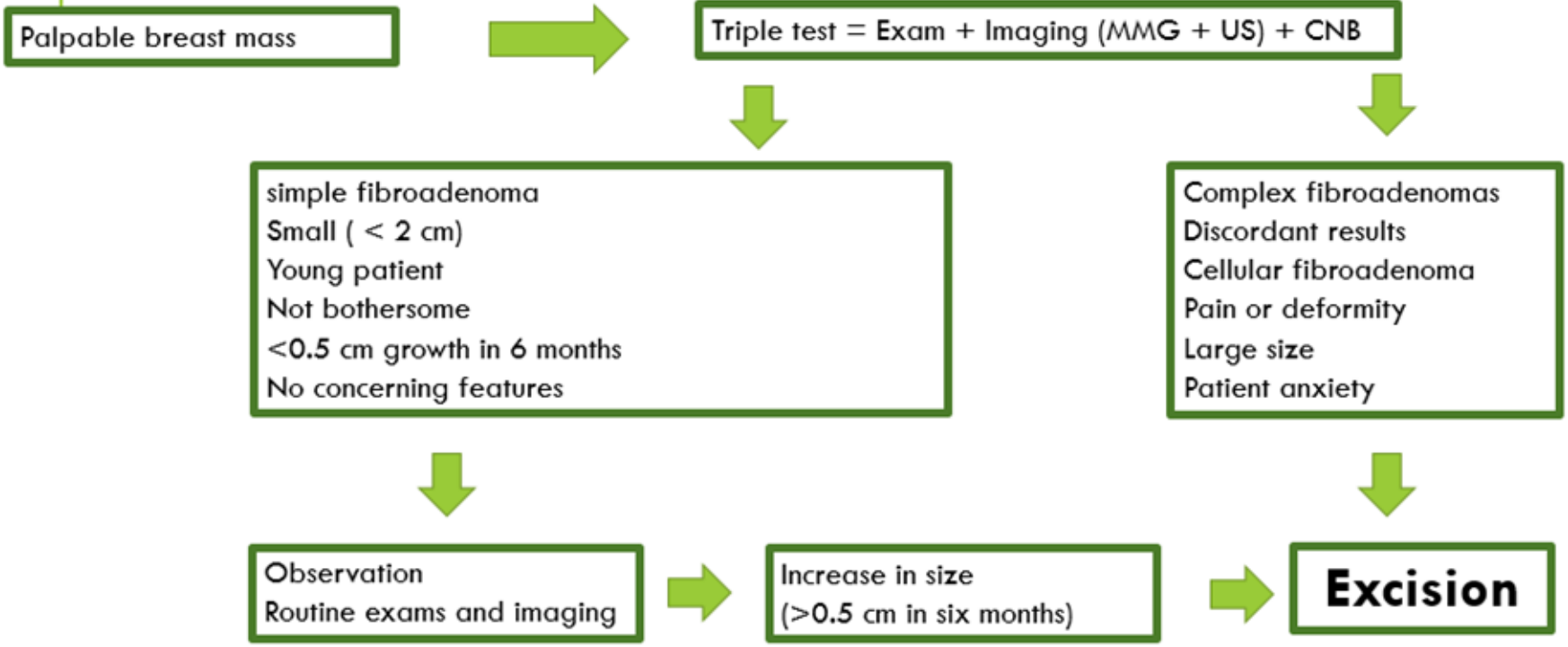
Fibroadenoma

- Physical Exam round, mobile with smooth borders
- US: hypoechoic, smooth solid mass
- Diagnosis: imaging may be sufficient
    - If imaging concerning, recommend CNB
- Biopsy: loose stroma with duct lines single or multiple layers of well defined calls with an intact basement membrane





Fibroadenoma Management



Fibroepithelial lesion

Simple Fibroadenoma | Cellular Fibroadenoma | Benign Phyllodes Tumor | Intermediate Phyllodes Tumor | Malignant Phyllodes Tumor



- Majority will show fibroadenoma
- Excise entire mass, do not need margin
- If Phyllodes on final pathology, re-excise margin

- Surgical excision with negative margin required

Phyllodes Tumor

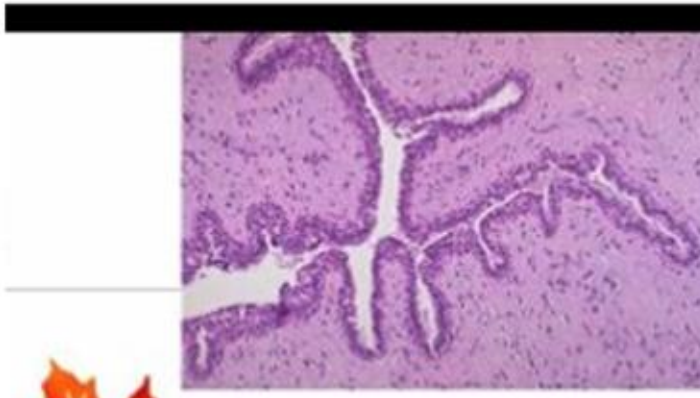
- Greek for "leaflike" projections in stroma, lined by epithelium
- Rare tumor 0.3%-0.9% of all breast cancers
- Presents usually at age 40+, peak incidence at 45
- Usually grows rapidly over weeks/months (but not always)
- Can be confused with fibroadenoma
- ***10% may have palpable axillary lymphadenopathy, most is reactive (LN mets are extremely rare)

Benign/Boderline/Malignant

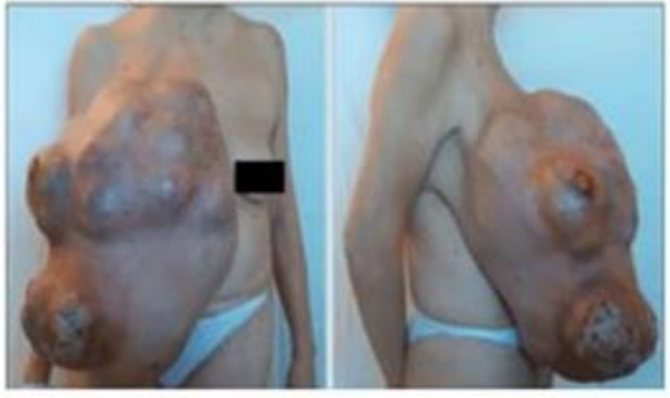
- 60-75% of Phyllodes are benign
- 15-20% are borderline
- 10-20% malignant

Treatment

- Excision with no consensus on margins. NCCN recommends 1 cm +
- Axillary surgery not recommended







Phyllodes Tumor

- Adjuvant radiation therapy if negative margins cannot be achieved
- Chemotherapy is reserved for select patient
- Hormonal therapy is not used to treat Phyllodes tumors

Phyllodes Tumor

- Local recurrence for benign Phyllodes is 6.9% and malignant is 15%-40%
- If recurrence: excise with negative margins +/- XRT
- Metastasis is 9%-27% occurring almost only in malignant Phyllodes
  - Most common mets: lung, brain, liver, adrenals, mediastinum
  - Consider chemotherapy with sarcoma chemotherapy regimens

Phyllodes Tumor

Follow up after excision

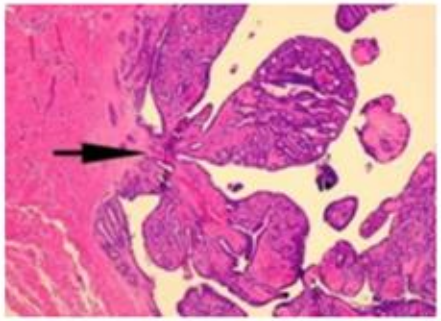
- Physical exam within six months from excision
- Mammogram/ultrasound within 6 months from treatment
- CT chest/abdomen/pelvis for 2-5 years if malignant phyllodes

Papilloma

- Papillary lesions can be subdivided into
  - Intraductal papillomas
  - Papillomas with atypia
  - Noninvasive papillary carcinoma
  - Papillary carcinoma

Papilloma

- 50% of intraductal papillomas are single lesions
- 30% present with bloody nipple discharge
- On ultrasound may present as a hypoechoic lesion within a dilated duct
- 7% upgrade rate to malignancy (compared to 37% for an atypical papilloma)

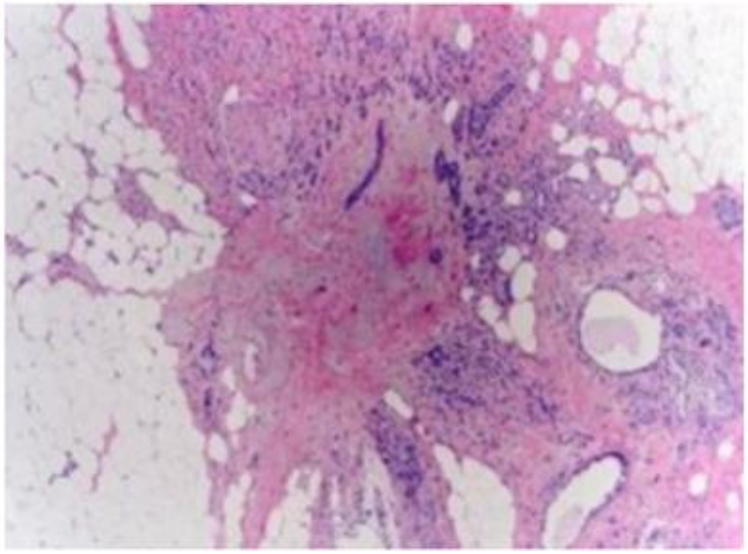


Papilloma - management

- Benign papilloma – imaging follow up is reasonable
  - May still excise if: suspicious radiographic findings, patient is high risk, patient anxiety, palpable lesion, symptomatic
- Atypical papillary lesion – surgical excision recommended

Radial scar

- Central sclerosis with fibroelastic stroma and entrapped glands radiating outward



Radial scar

- Radial scar and complex sclerosing lesion first recognized and described in 1928
- Complex sclerosing lesion is sometimes used for similar lesions >1 cm in size
- On imaging can be difficult to differentiate from ILC
- Most are microscopic and found incidentally on breast biopsies

Radial scar

- Incidence of radial scars on benign breast biopsies ranges from 1.7%-28%
- Frequency of incidental radial scars in mastectomy specimens 4%-26%
- Upgrade to malignancy
  - 1-5% in CNB without atypia and 29% in CNB with atypia
- They do not require routine excision

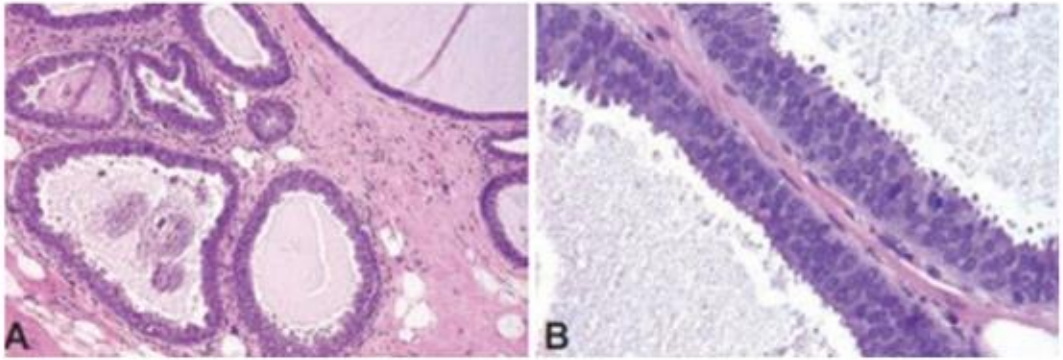
High Risk Lesions

- Flat epithelial atypia
- Atypical ductal hyperplasia

2-4X increased risk of future breast cancer development

Flat epithelial atypia

- A neoplastic alteration of the terminal duct-lobular units with replacement of the native epithelial cells by one or several layers of epithelial cells types with low-grade atypia



Flat epithelial atypia

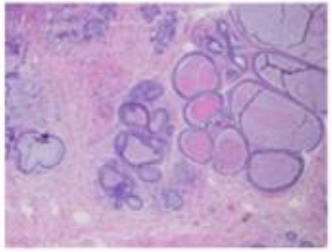
- Most often presents as microcalcifications on screening mammogram
- Occurs in 0.7%-12.2% of CNB
- 27%-53% of CNB with FEA also have associated other high risk lesions on the same biopsy specimen

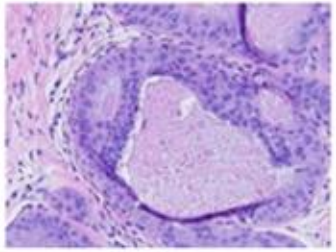
Flat epithelial atypia

- Excision is not routinely recommended
  - Should be excised if there are sampling or diagnostic concerns
- Future risk of cancer
  - Is elevated when other types of atypia are also discovered
  - BUT...does not independently increase future risk of breast cancer

Atypical ductal hyperplasia

- A proliferation of monomorphic, evenly spaced epithelial cells involving terminal duct-lobular units.
  - ADH is defined in terms of its resemblance to low-grade DCIS spanning < 3 mm in extent



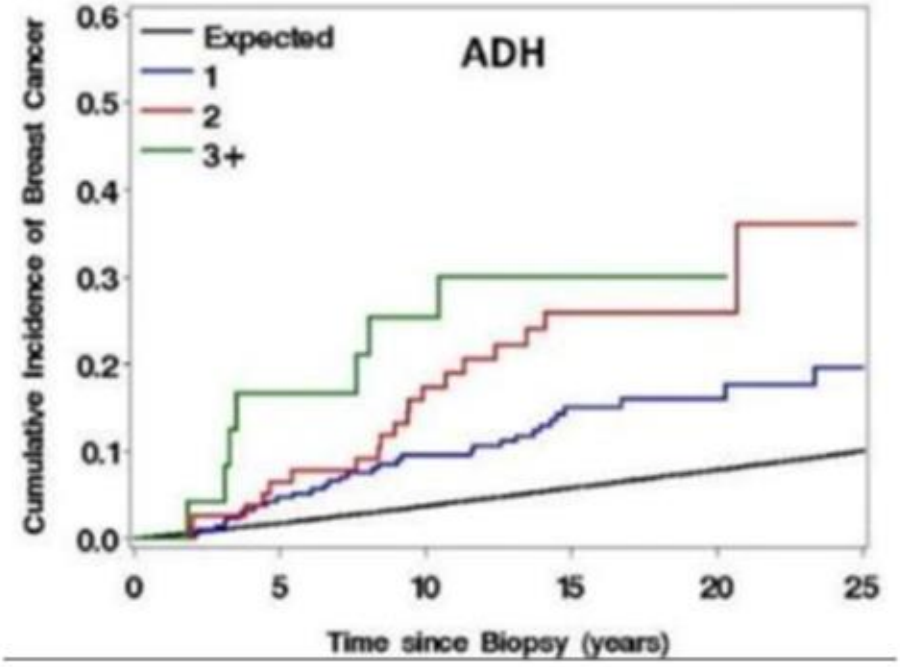


Atypical ductal hyperplasia

- Typically presents as microcalcifications on screening mammogram
- Treatment standard is surgical excision
- Upgrade to DCIS or IBC is 15-30% on surgical excision
- Factors associated with upgrade
  - Use of a smaller bore CNB (14G or smaller), and shorter length of biopsy core
  - > 3 foci of ADH
  - pathologist at low volume institution

Atypical ductal hyperplasia

- Future risk of cancer
  - Risk of IBC or DCIS is 4X greater
  - than the general population
  - Absolute risk of 1%-2% per year
  - Increased risk if more foci of atypia
- Clinical management
  - High risk surveillance
  - Chemoprevention
  - Prophylactic mastectomy is NOT recommended



Lobular Neoplasms

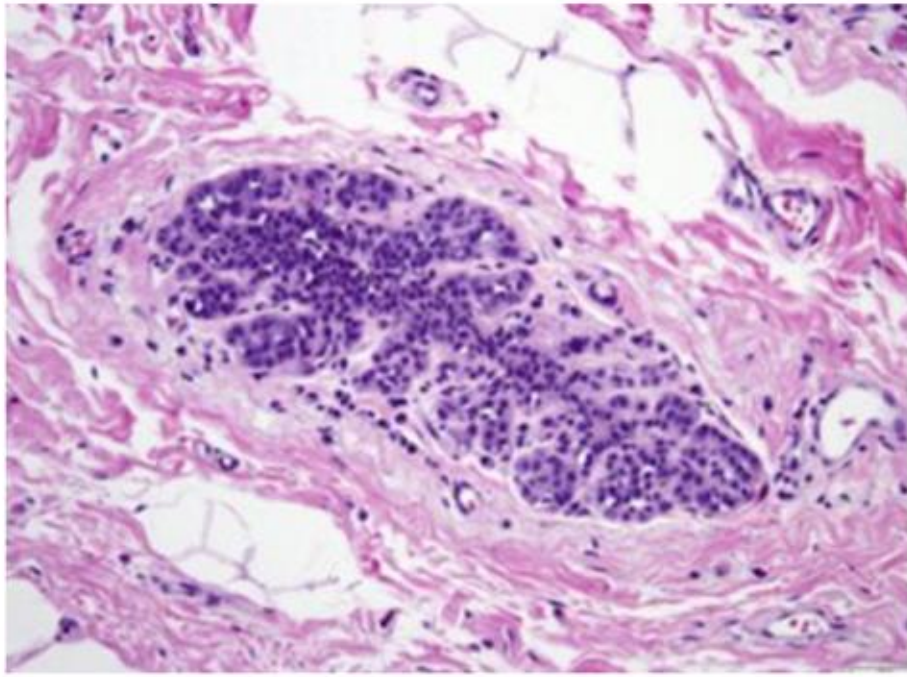
- Atypical lobular hyperplasia
- LCIS
  - Classic
  - Pleomorphic

Spectrum of disease

increased future risk → in-situ cancer

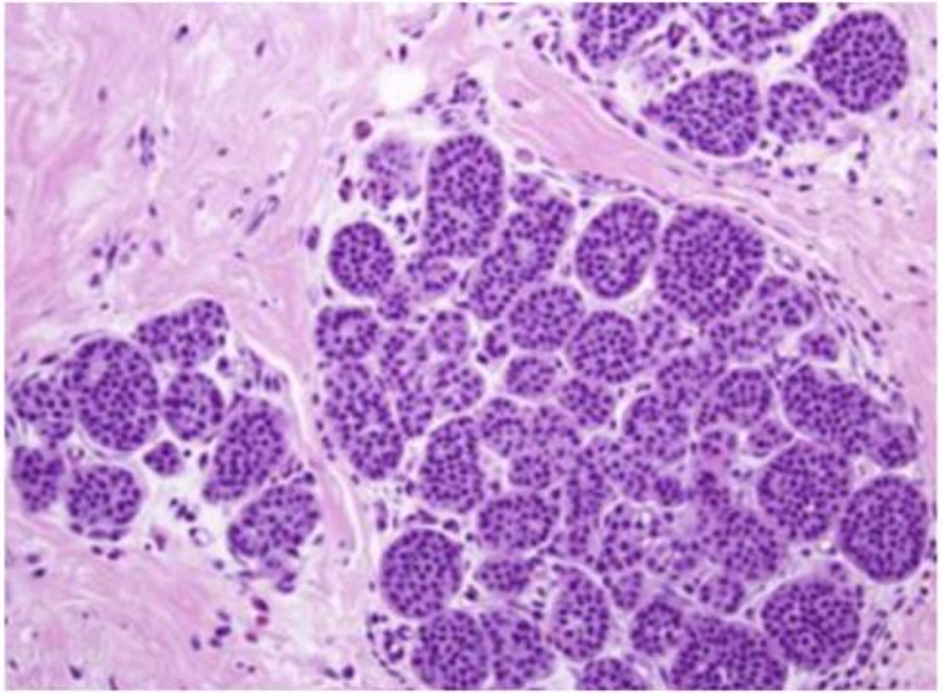
Atypical lobular hyperplasia

- Non-cohesive proliferation of atypical epithelial cells
- Proliferation of monomorphic, evenly spaced, discohesive cells filling the lobule
- Involves <50% of acinar spaces



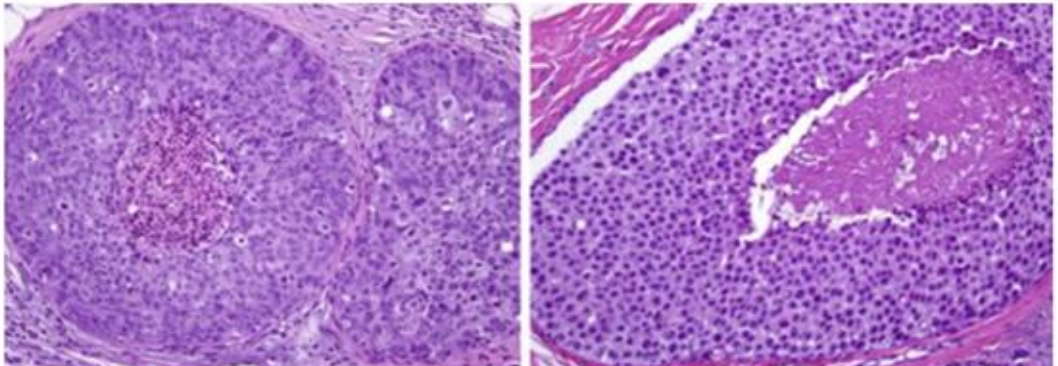
Classic LCIS

- Discohesive proliferation of atypical cells
- Solid proliferation of small cells with small, uniform nuclei and variably distinct borders
- Distention and distortion of involved spaces
- Involve >50% of acinar spaces
- Usually ER+/HER2-
- Stains differentiate LCIS from DCIS



Pleomorphic LCIS

- Large cells with marked nuclear pleomorphism
- Same cytologic discohesion and intracytoplasmic vacuoles as classic central necrosis and calcifications
- Can be difficult to differentiate from DCIS



Lobular neoplasia

Historical context

- 1941 "LCIS" first described as a multifocal incidental finding with features that are precursors to invasive breast cancer. Mastectomy is recommended
  - Risk is 1% per year for bilateral cancer risk with unilateral LCIS
- 1978 "lobular neoplasia" introduced to include ALH and describe a risk continuum
  - 1983: 60% of LCIS was treated with mastectomy
  - 2013: 10% of LCIS was treated with mastectomy

Lobular neoplasia

- No clinical symptoms
- 80-90% premenopausal, mean age for LCIS is 50
- 10x higher incidence in Caucasian women vs African American women
- Usually there are no radiologic findings and lobular neoplasia is an incidental biopsy finding
- Upgrade to cancer rate has a wide range reported:
  - 0-60%

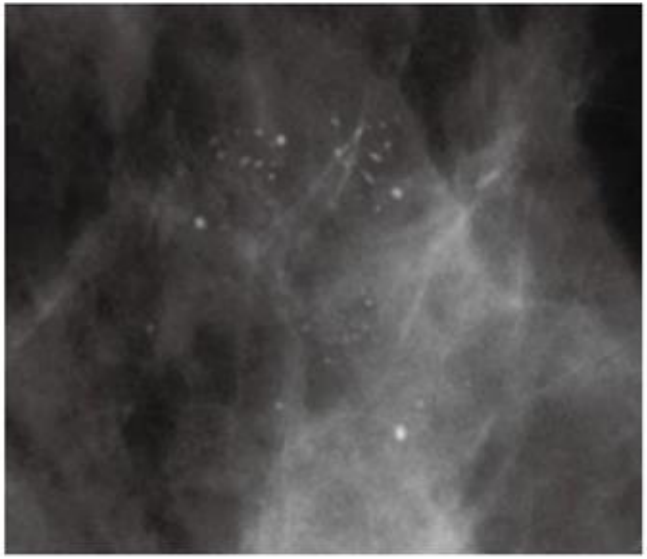
Future Invasive Cancer Risk

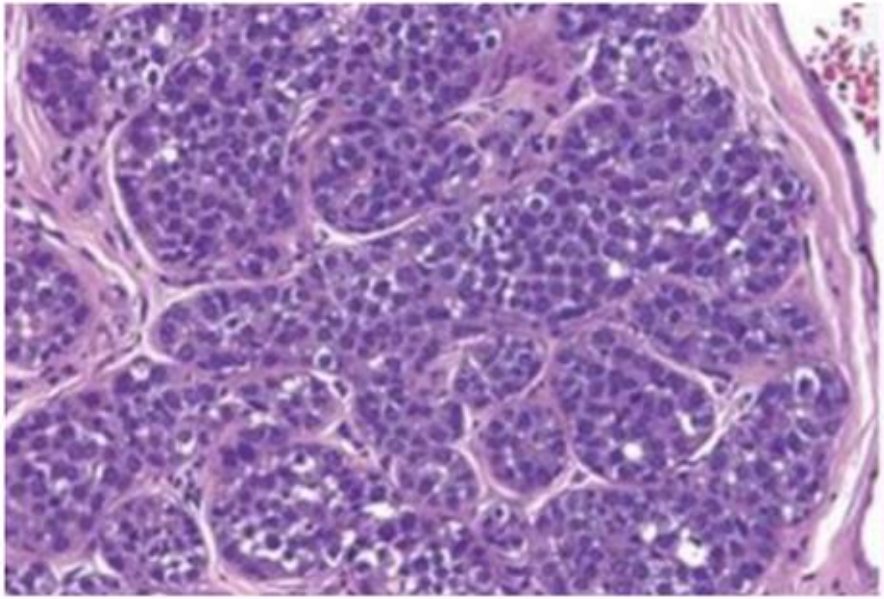
- ALH
  - 4X relative risk increase compared to patients without atypia
- Classic LCIS
  - RR increase of 9-10X compared to general population
  - Absolute risk of 1% per year for both sides

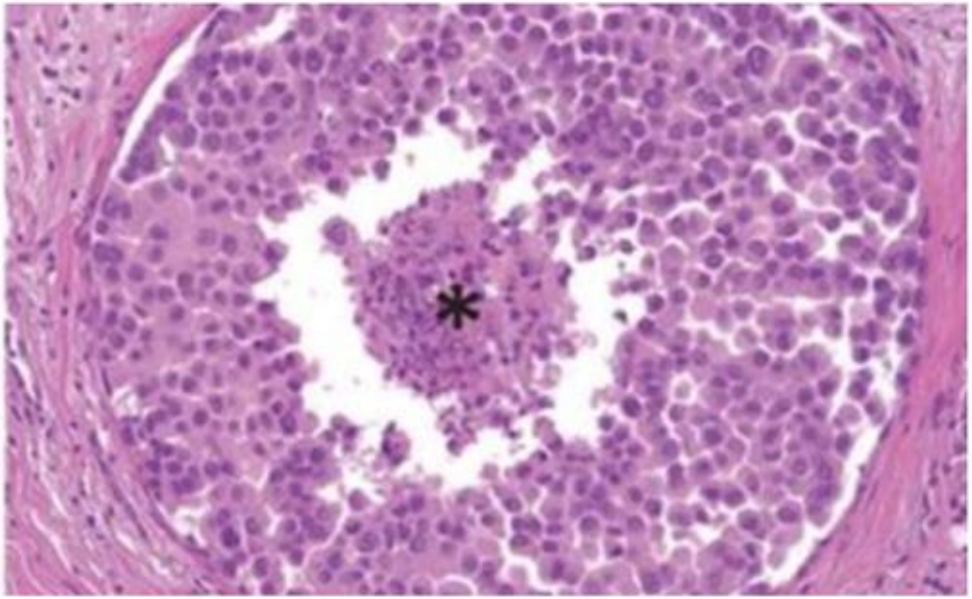
Current Management of ALH and classic LCIS

- Excision is not required if
  - Incidentally discovered
  - Radiologic-pathologic concordance
  - Excision not indicated for the associated lesion
- No additional surgery even if margin positive for LCIS
- There is increased risk of future cancer, but lobular neoplasia is not considered a precursor to cancer!
  - High risk screening
  - Chemoprevention
  - Prophylactic mastectomy is not recommended

Pleomorphic LCIS







LCIS – Classic vs Pleomorphic Histology

Pleomorphic LCIS

- Prognosis and Management is like that of DCIS rather than classic LCIS
- If detected on CNB --> surgical excision
- If detected on surgical pathology --> re-excise to negative margins

Summary

Benign masses

- Fibroadenoma – routine excision is not recommended
- Papilloma – routine excision is not recommended

High risk masses

- Radial scar – routine excision is not recommended
- Flat epithelial atypia – routine excision is not recommended
- Atypical ductal hyperplasia – excise lesion
- Lobular neoplasms
  - ALH – do not routinely excise, do not need negative margins
  - Classic LCIS – do not routinely excise, do not need negative margins
  - Pleomorphic LCIS – excise lesion with negative margins


Questions?