

Lobular carcinoma in situ; emphasis on high risk cases

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Outlines:

- Epidemiology
- Pathologic subtypes of LCIS
- Biomarkers
- Clinical approach

Epidemiology

- LCIS is a relatively uncommon lesion
- Multicentricity in the ipsilateral breast has been identified in 60% to 80% of cases.
- Bilaterality has been reported in 20% to 60%.
- LCIS may involve a variety of lesions

Histologic subtypes

- Subtypes of LCIS:

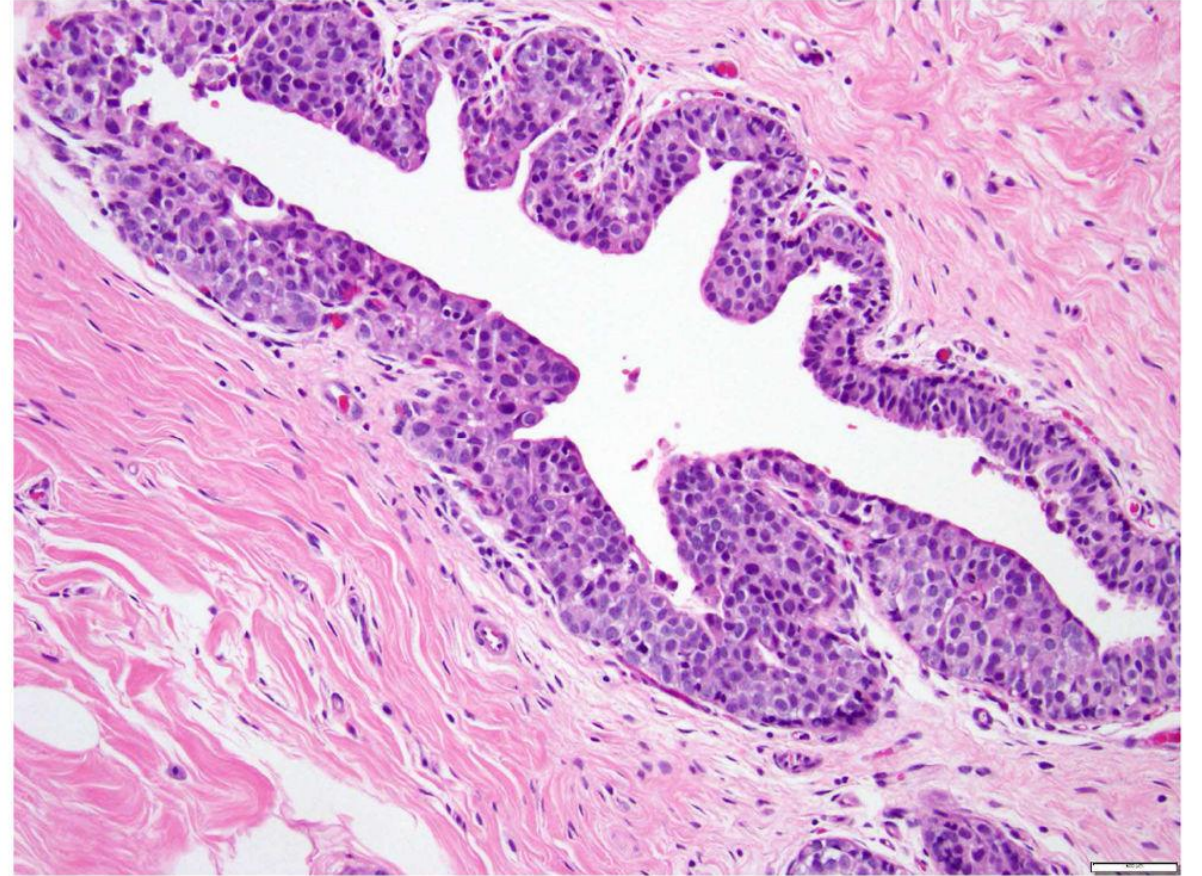
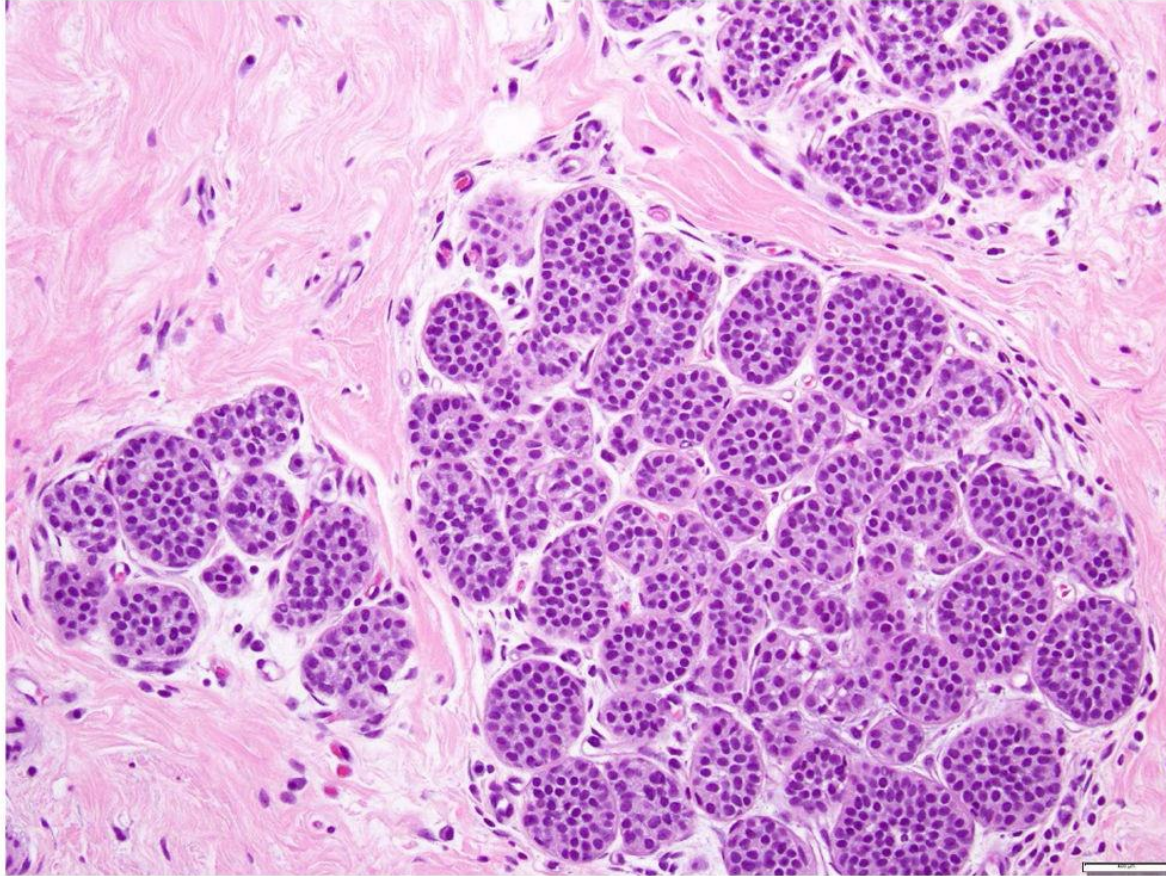
- Classic type
- Pleomorphic type
- Florid type

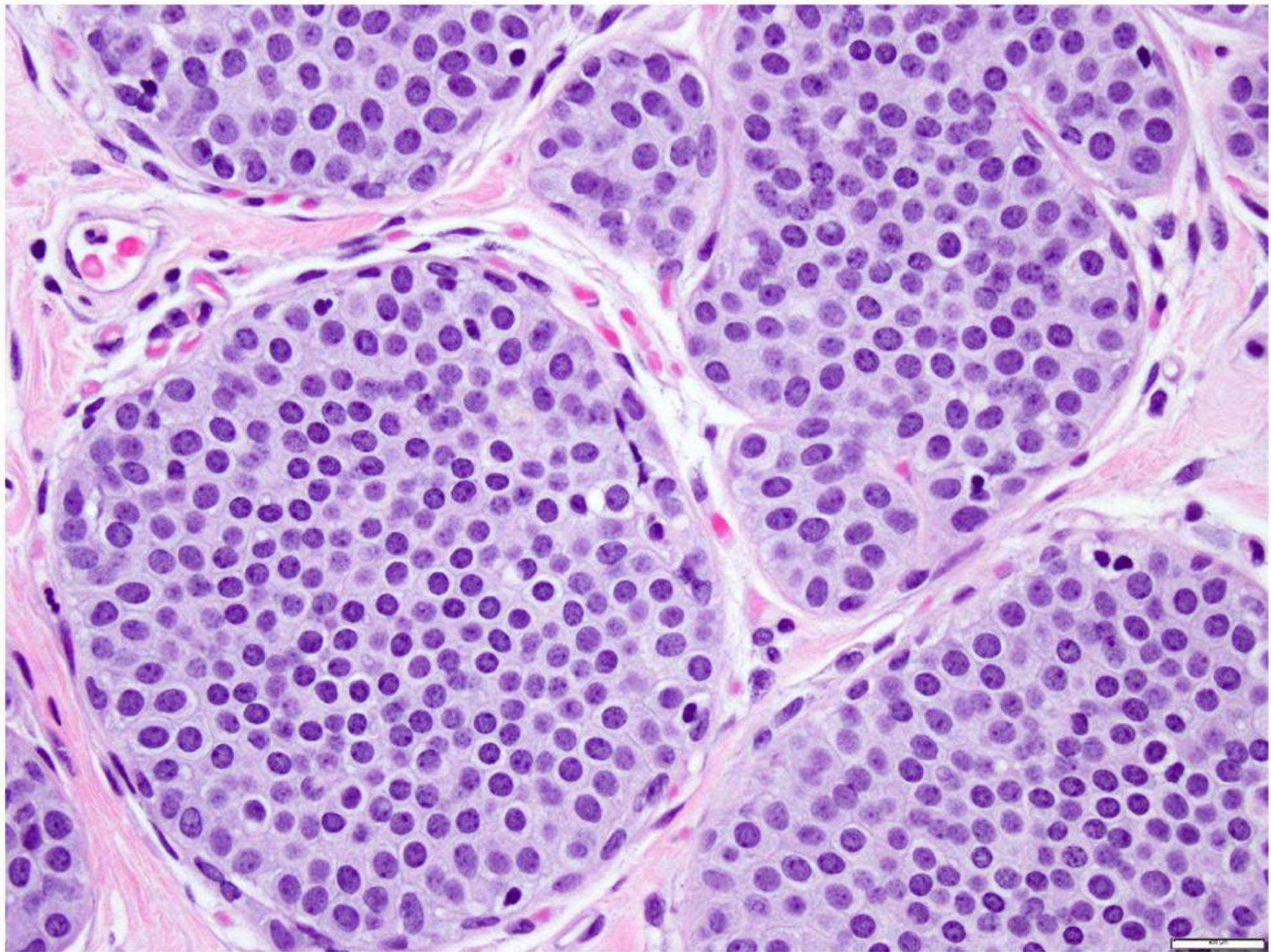


Less than 5%

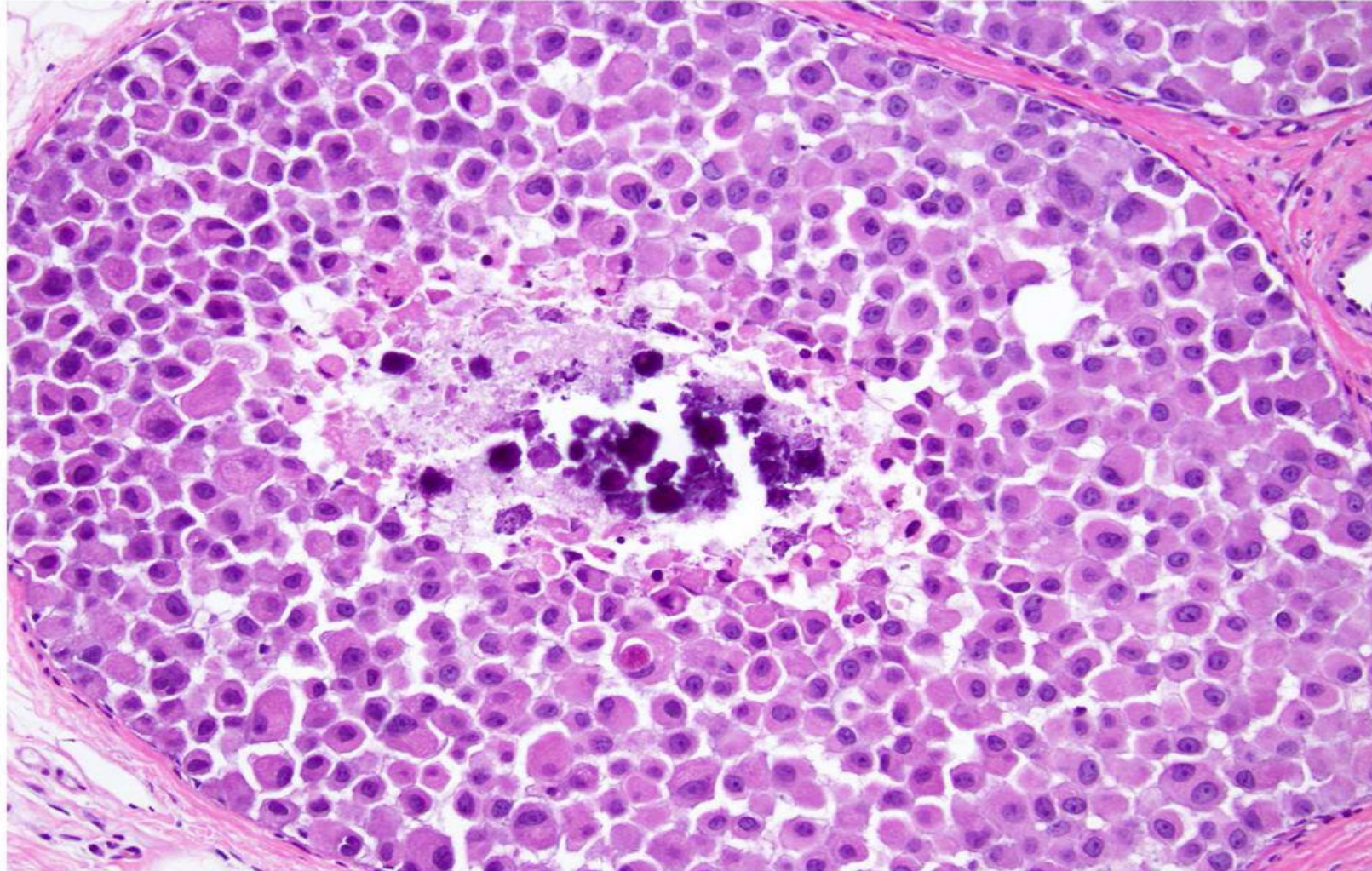
- LCIS found in **0.5-3.6%** of otherwise benign breast biopsies and in 0.04-1.2% of reduction mammoplasty specimens
- **Classic** LCIS is predominantly diagnosed in **premenopausal** women (mean age: ~50 years)
- **Pleomorphic** LCIS and **florid** LCIS are diagnosed primarily in **postmenopausal** women (mean age: ~60 years)

Typical morphology of classic LCIS

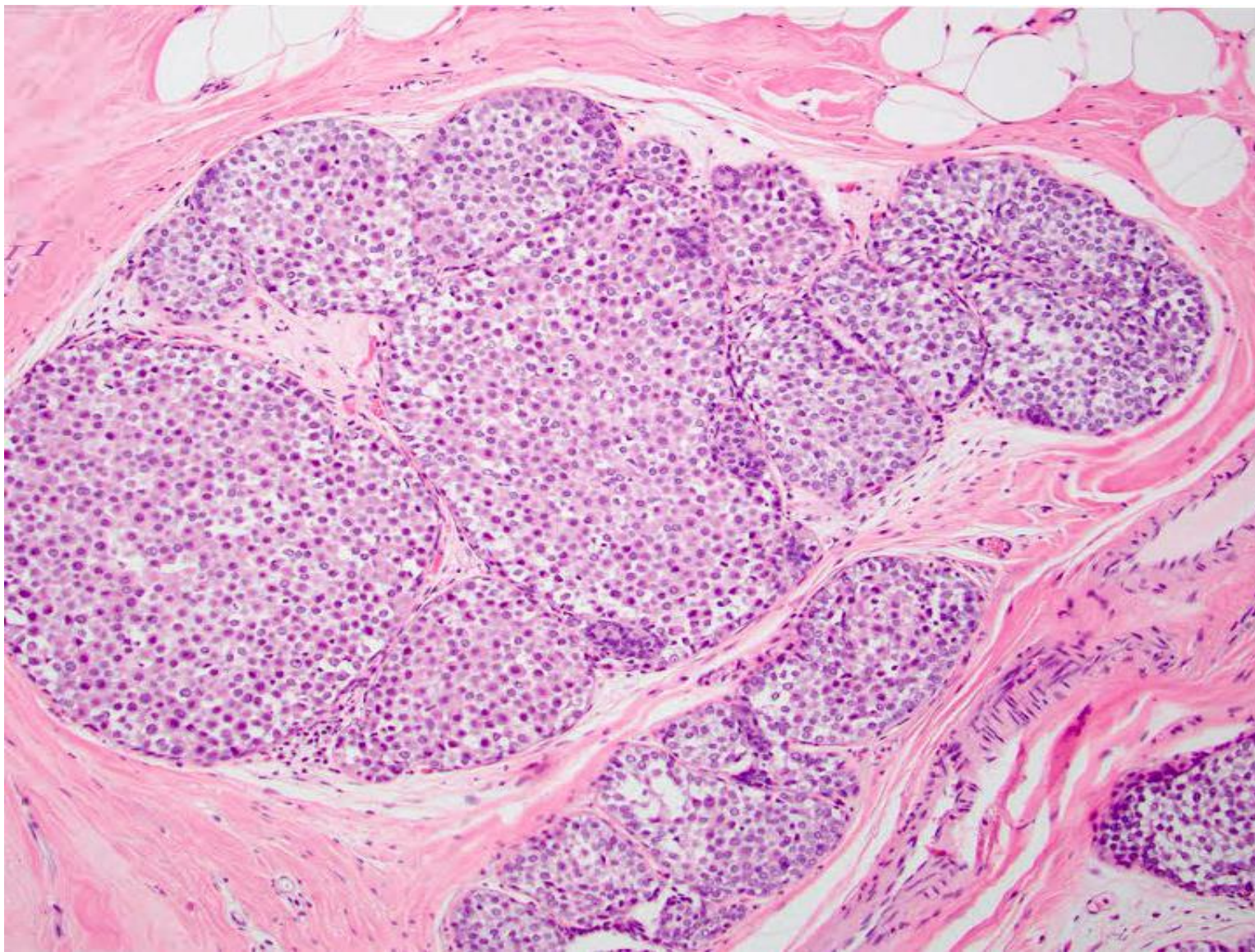


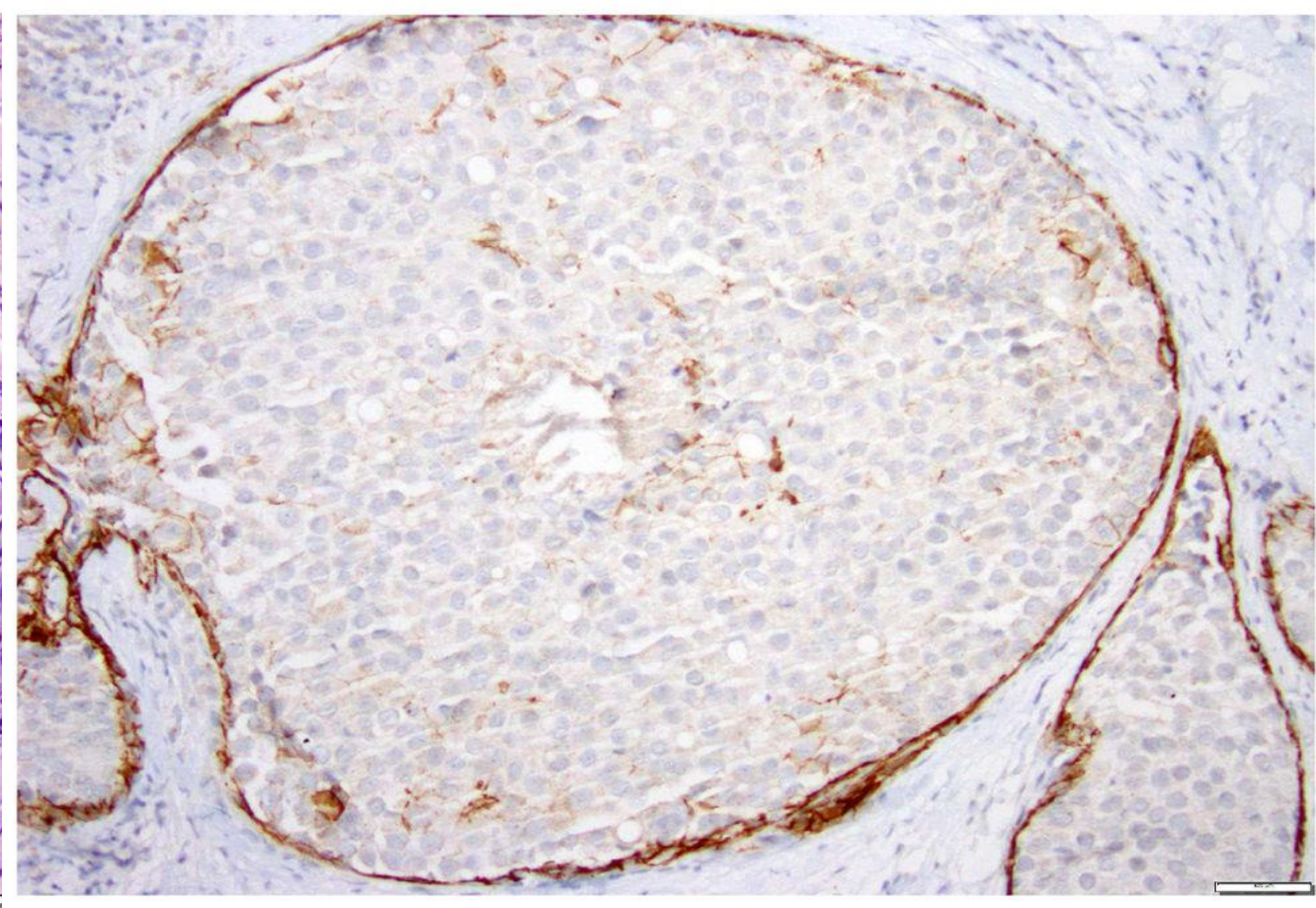
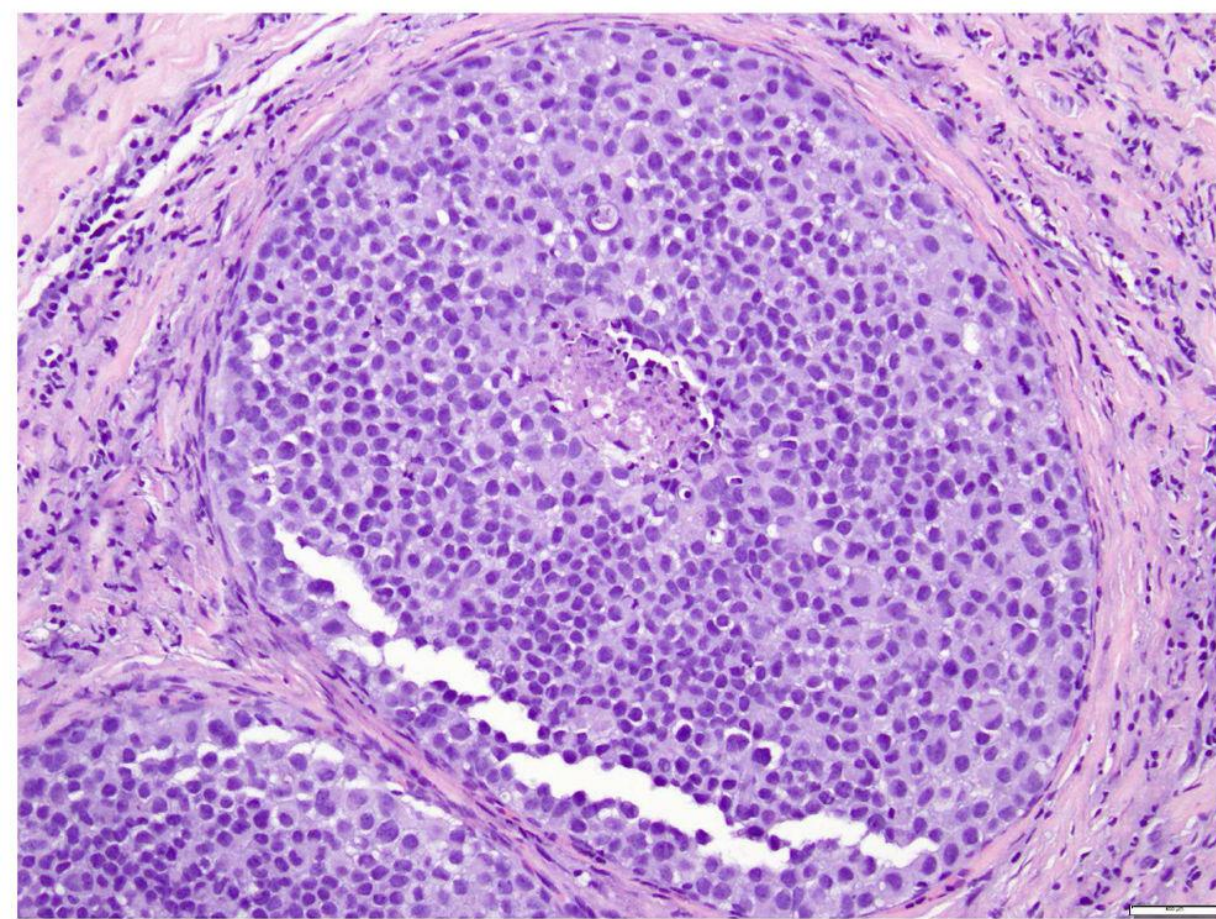


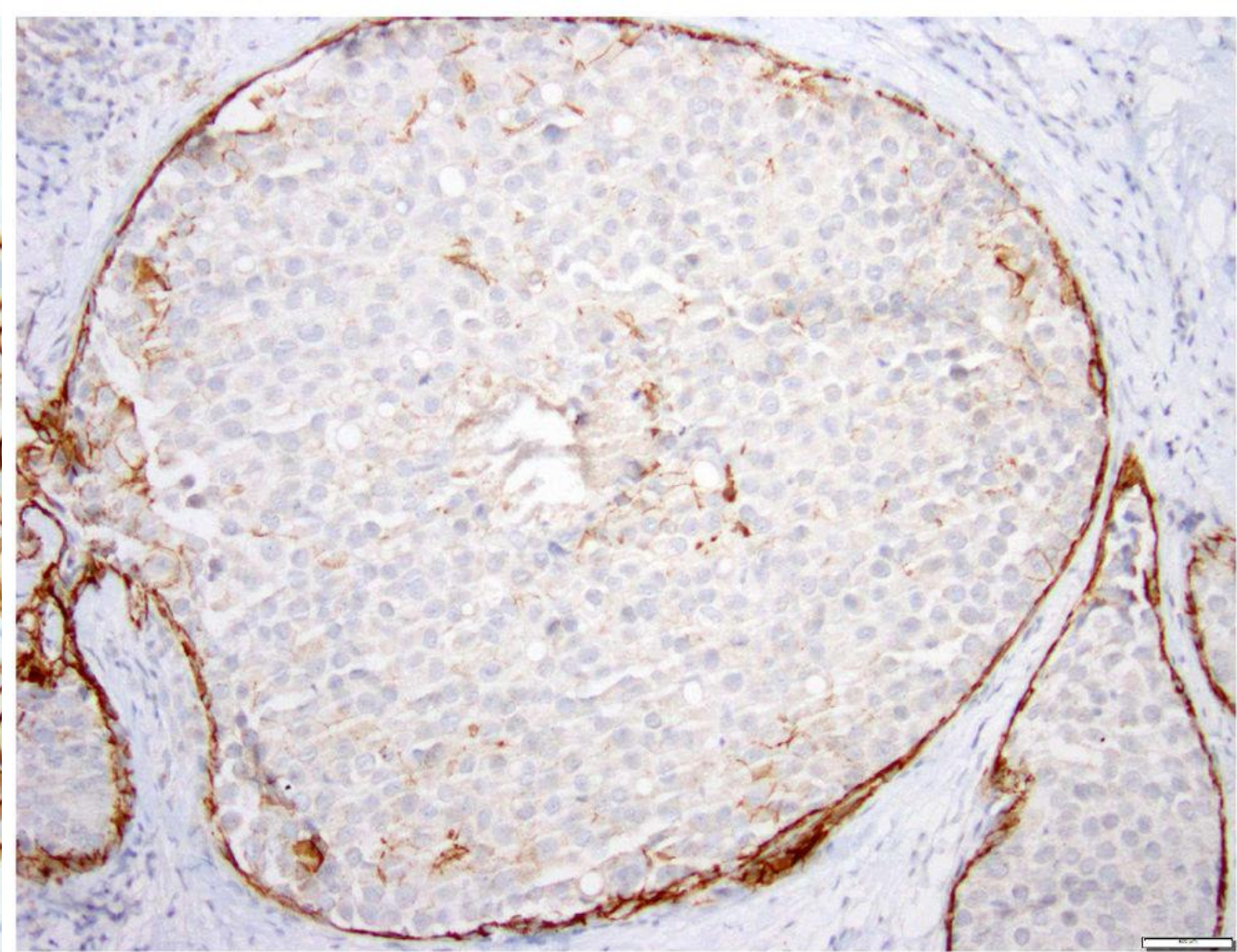
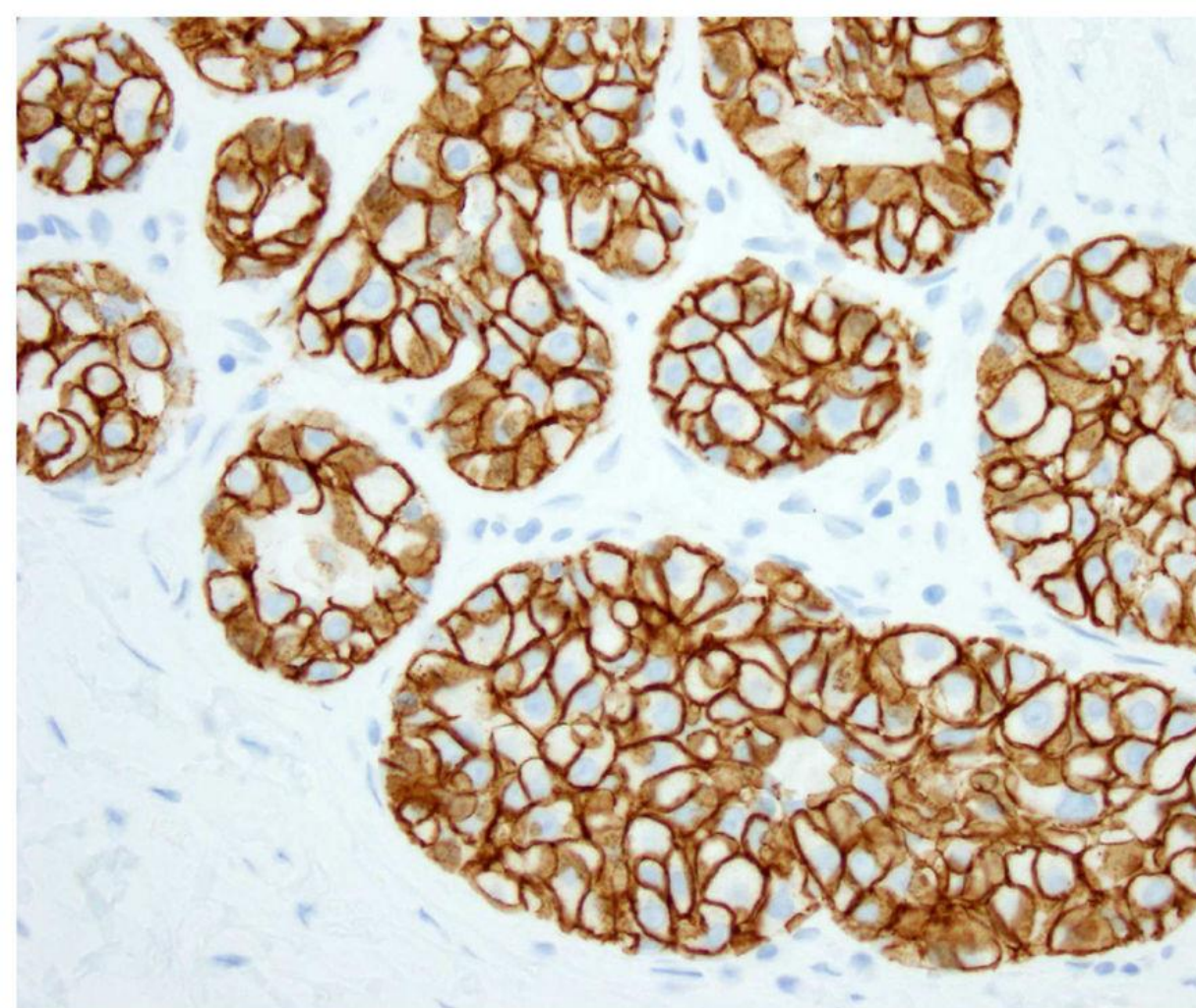
Pleomorphic LCIS



Florid LCIS (LCIS with necrosis)









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LCIS variants

- LCIS with inflammatory infiltrates, especially in the absence of florid and pleomorphic features, we should consider describing such cases as VT-LCIS
- Signet ring and histiocytoid cells in LCIS could be considered VT-LCIS if associated with **ER negative or HER2 positive status**
- LCIS that shows extracellular mucin production in addition to signet-ring cells could also be considered a biologically significant VT-LCIS. It is associated with high-grade invasive lobular carcinoma with extracellular mucin production

Immunophenotype and Genetics

- At present, there is no recommendation to test and report ER, PR and HER2 status in LCIS.
- The cells of **classical LCIS** have a low-proliferative rate, are typically strongly and diffusely estrogen receptor (ER)-positive, and rarely, if ever, show HER2 overexpression or gene amplification, or *p53* gene alterations.
- Pleomorphic LCIS are also usually ER-positive, some cases demonstrate weaker ER expression than does classical LCIS.

- Other examples of pleomorphic LCIS, particularly those with prominent apocrine features, lack ER expression but demonstrate expression of androgen receptor.
- In addition, pleomorphic LCIS lesions commonly have a moderate-to-high proliferative rate, may show HER2 protein overexpression.

Clinical Course and Prognosis

- Long-term follow-up studies have indicated that LCIS is associated with an approximately 7- to 10-fold increase in breast cancer risk compared with women in the reference population.
- The absolute risk for a woman with LCIS developing breast cancer is approximately 1% to 2% per year, and this risk persists for more than 25 years

- LCIS is both a risk factor and a non-obligate precursor of breast carcinoma
- LCIS is no longer staged as Tis, in the 8th edition of the TNM staging by the American Joint Committee on Cancer (AJCC).

Classic LCIS on CNB:

- Recent studies with **concordant imaging findings** have reported very low (~1-4%) excisional upgrade rates of **incidental classic LCIS** (and atypical lobular hyperplasia) to carcinoma
 - Therefore, patients with incidental classic LCIS on core biopsy showing concordant imaging-histological findings can be spared surgical excision.

Classic LCIS on margins of excision:

- There is no indication that excision of classic LCIS to negative margins is useful, and it is not necessary to assess or report the status of excision margins for classic LCIS, even in the setting Of coexistent pleomorphic LCIS, florid LCIS, and/or ILC.

Pleomorphic/florid/necrosis or variants LCIS on CNB:

- **Pleomorphic LCIS or necrosis on CNB:** require excision
 - reported rates of upgrade to a “worse” lesion at excision range from 17% to 46%

Pleomorphic/florid/necrosis or variants LCIS on excision margin:

- It is recommended that margin status be reported for pleomorphic LCIS and florid LCIS to help inform further management decision.

Key points

- LCIS is a risk factor and a non-obligate precursor lesion
- Surgical excision can be safely spared in patients with classic LCIS diagnosed on needle core biopsy with concordant imaging and pathologic findings
- Surgical excision is recommended for LCIS with variant or pleomorphic morphology, and for classic LCIS with discordant imaging and/or pathologic findings.
- In a resection specimen, the margin status of classic LCIS is not reported, but it should be reported for LCIS with variant and/or pleomorphic morphology.

Thank you for your attention

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