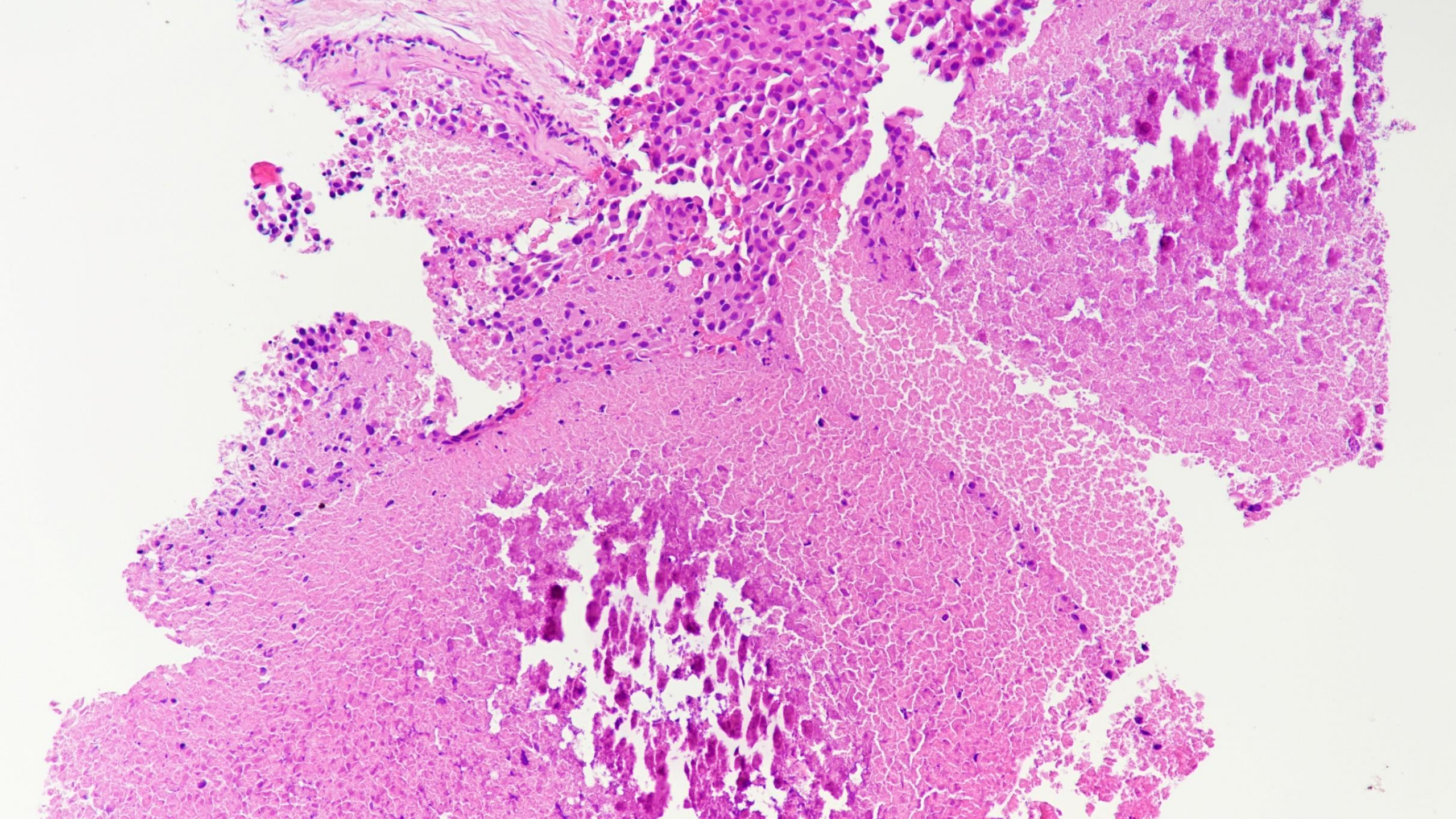
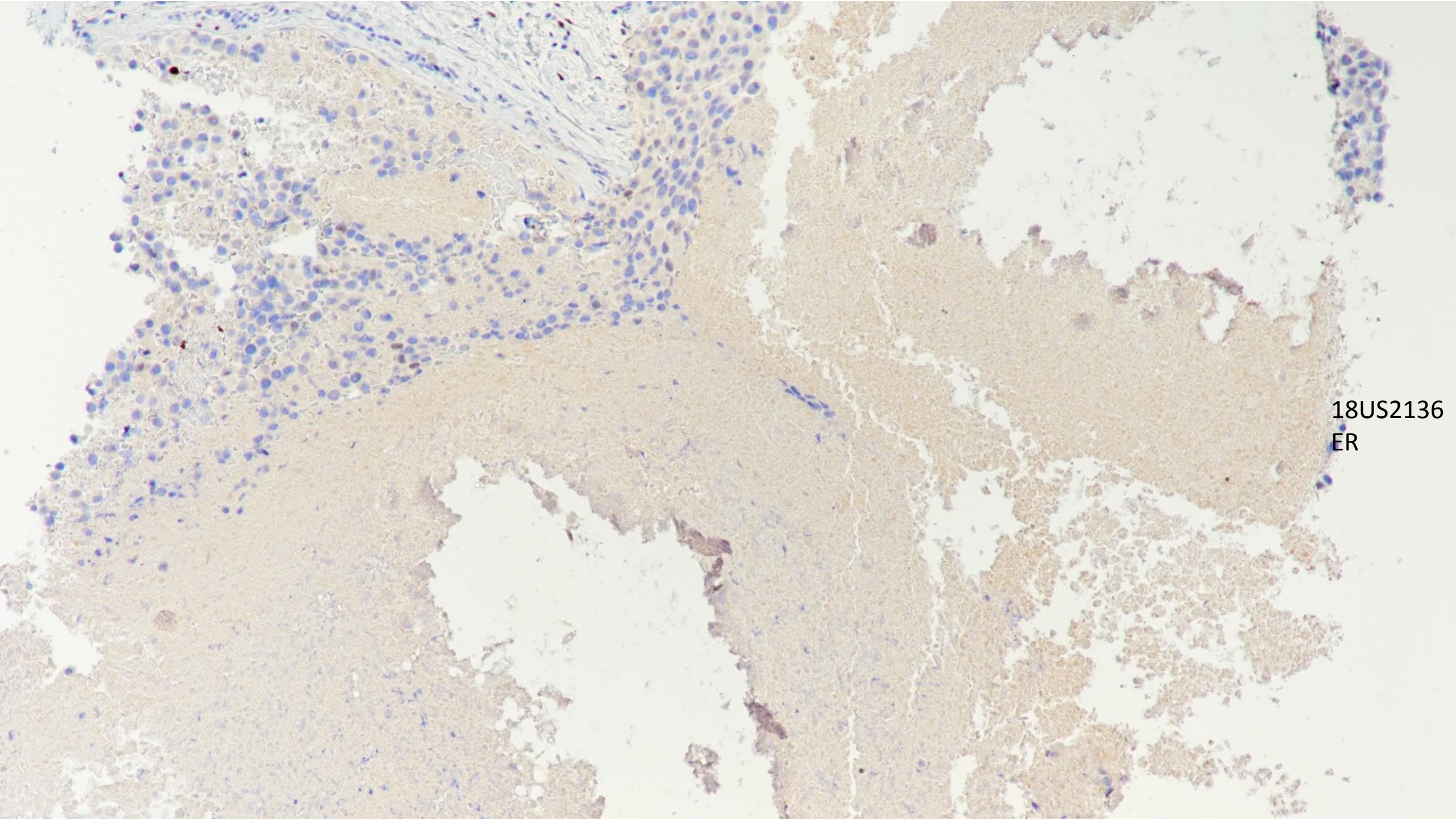
Brief clinical history case 4

- A 53 year old female, with right breast calcification and breast mass.
- Biopsy and subsequent excision was done
- US2136

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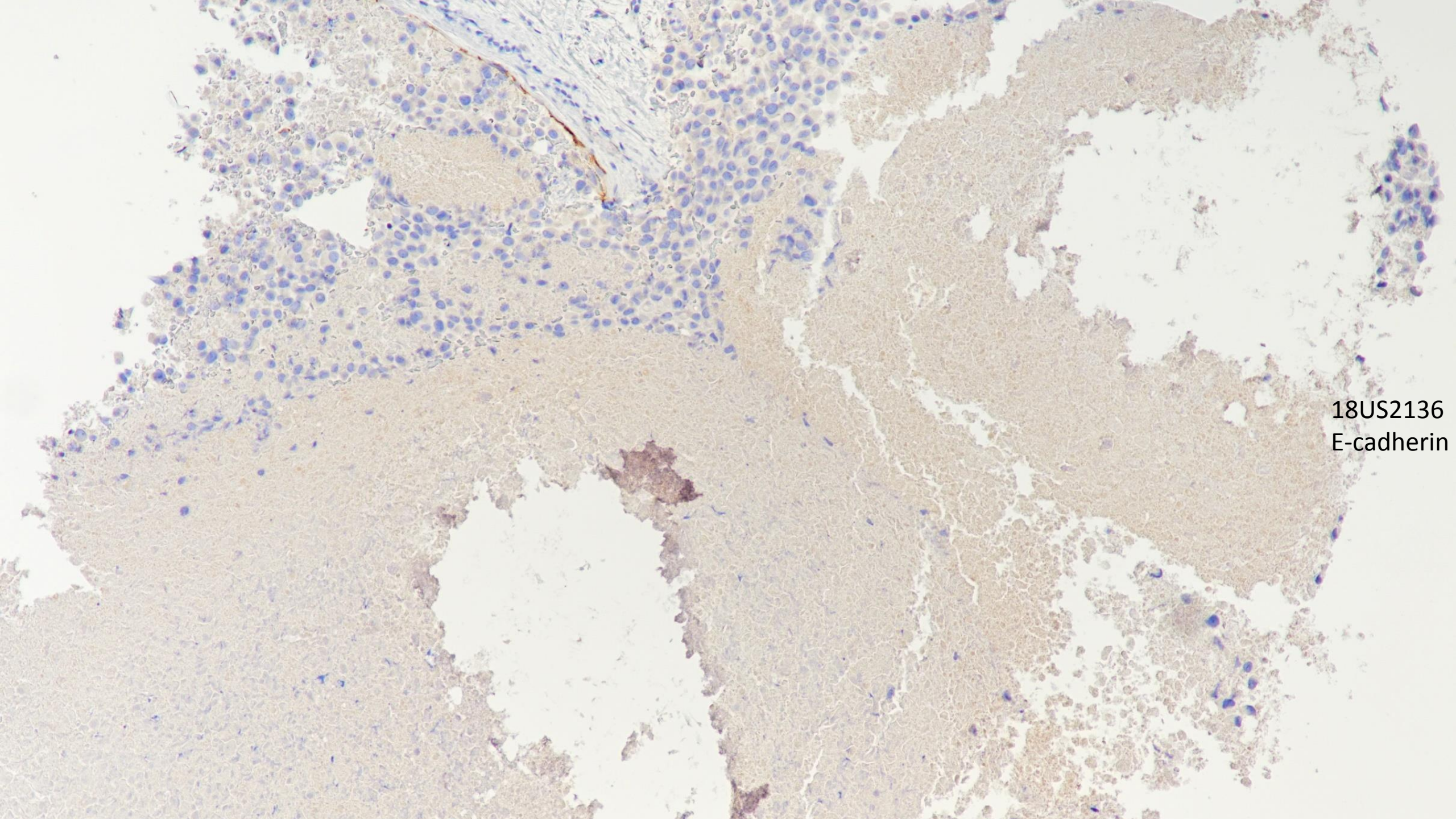
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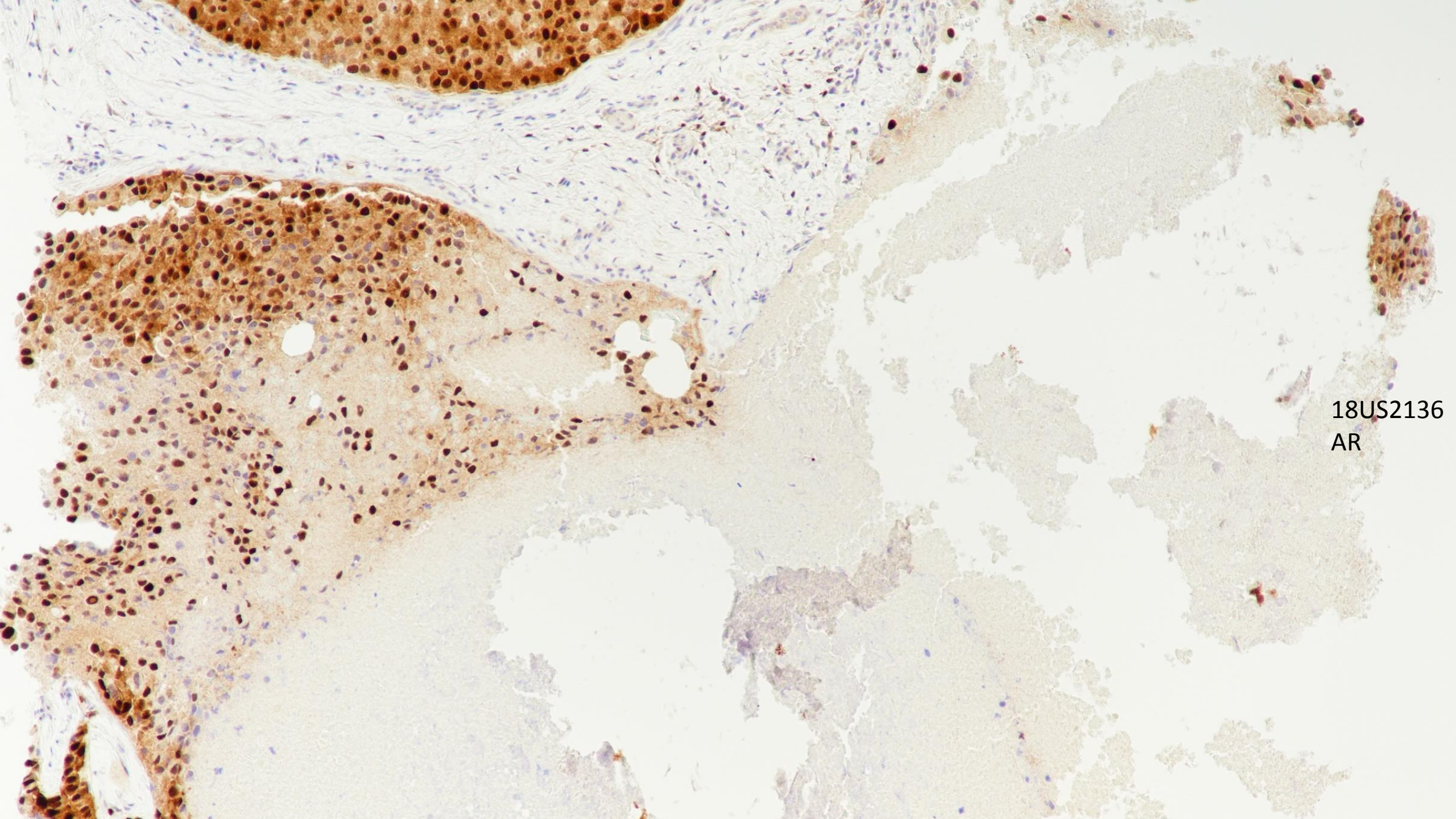
E-cadherin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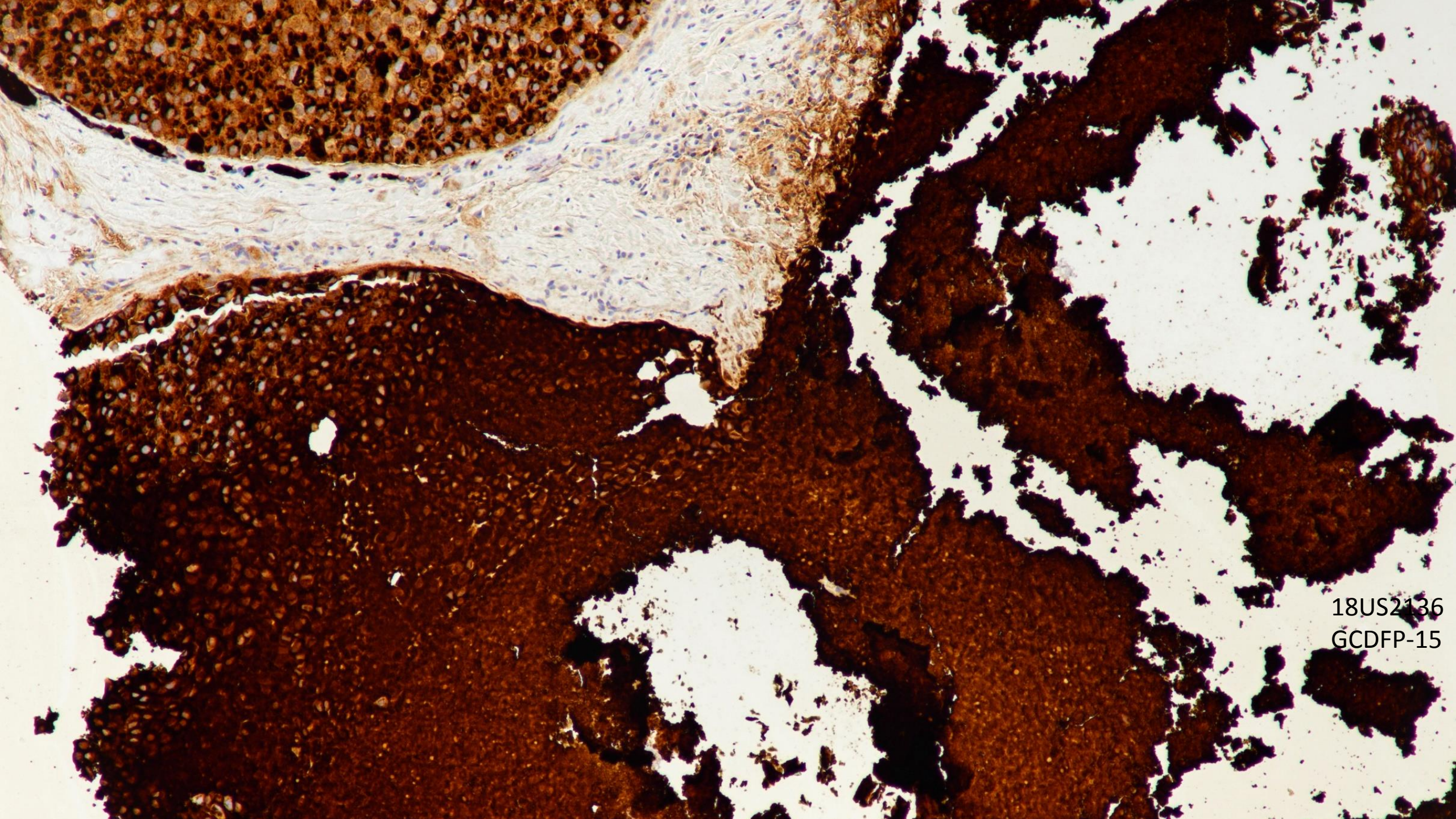
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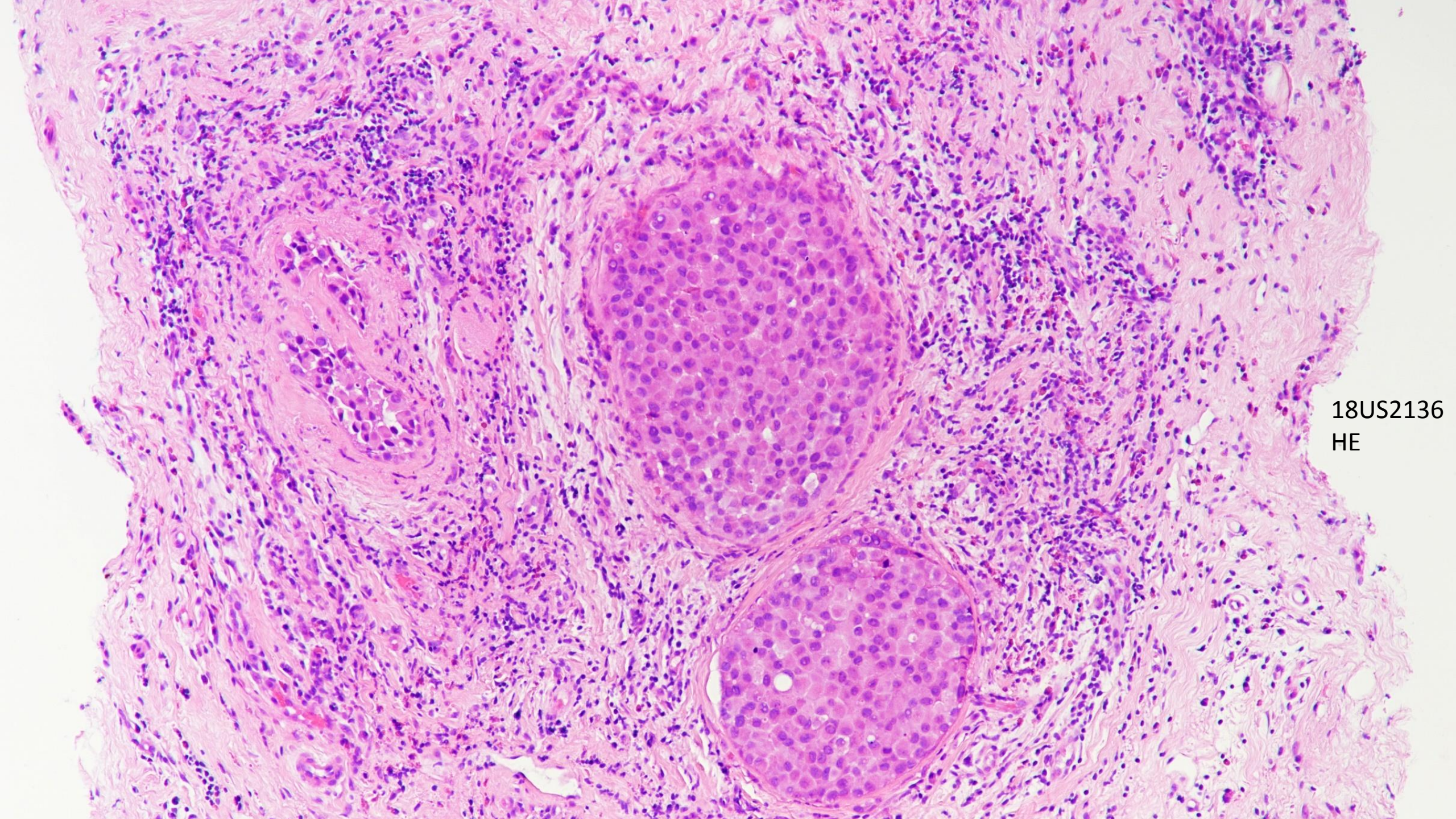
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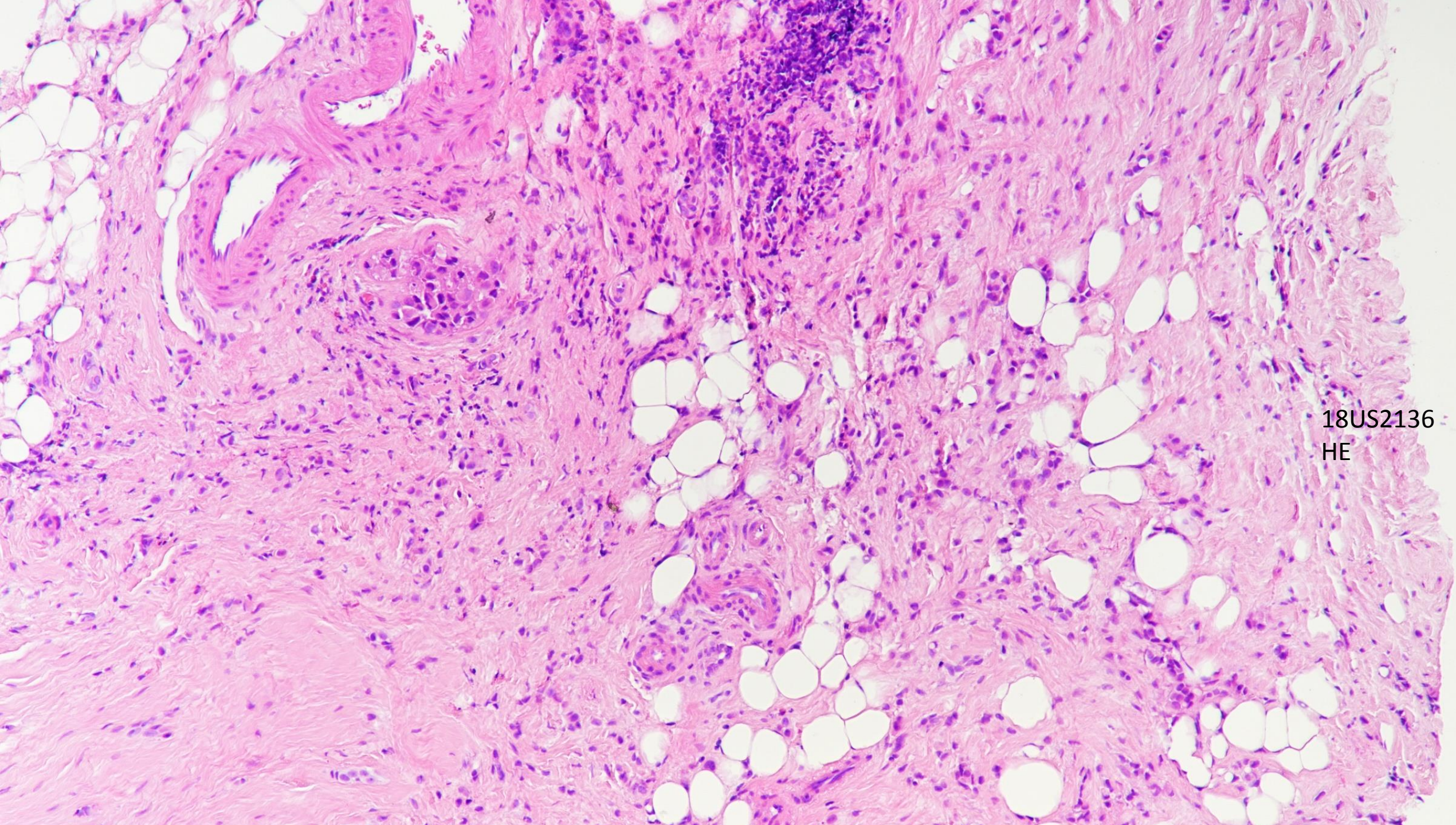
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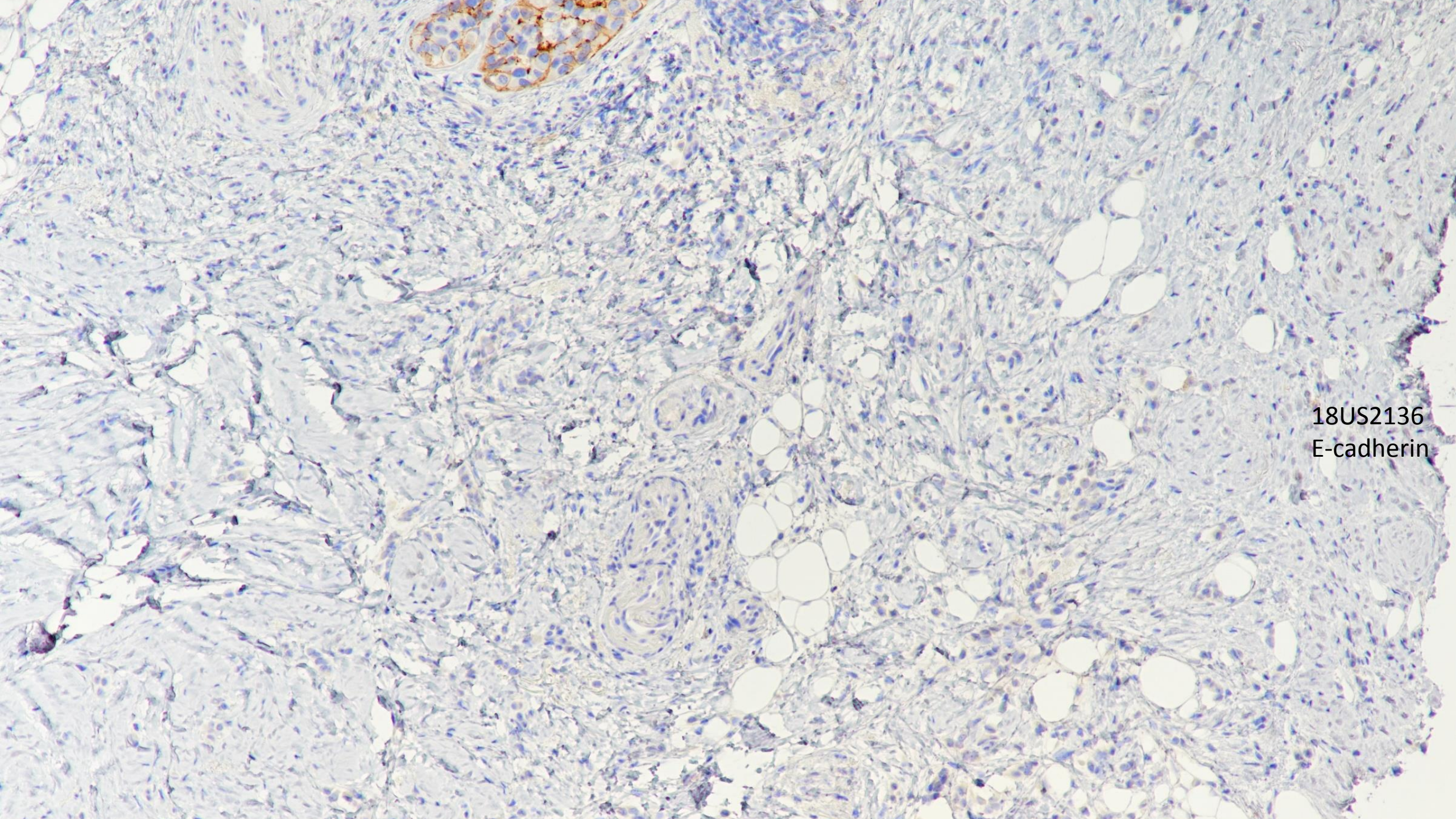
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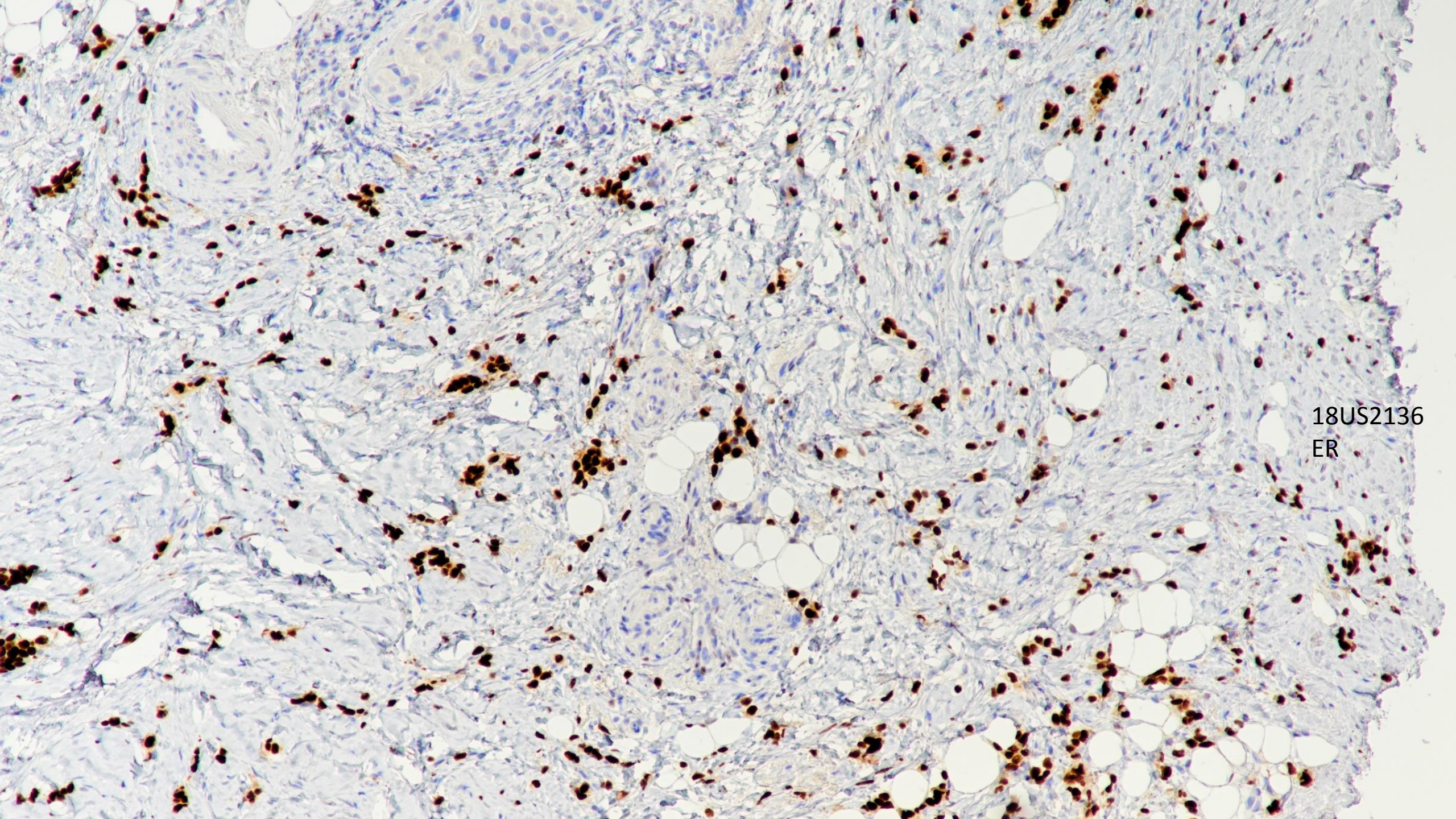
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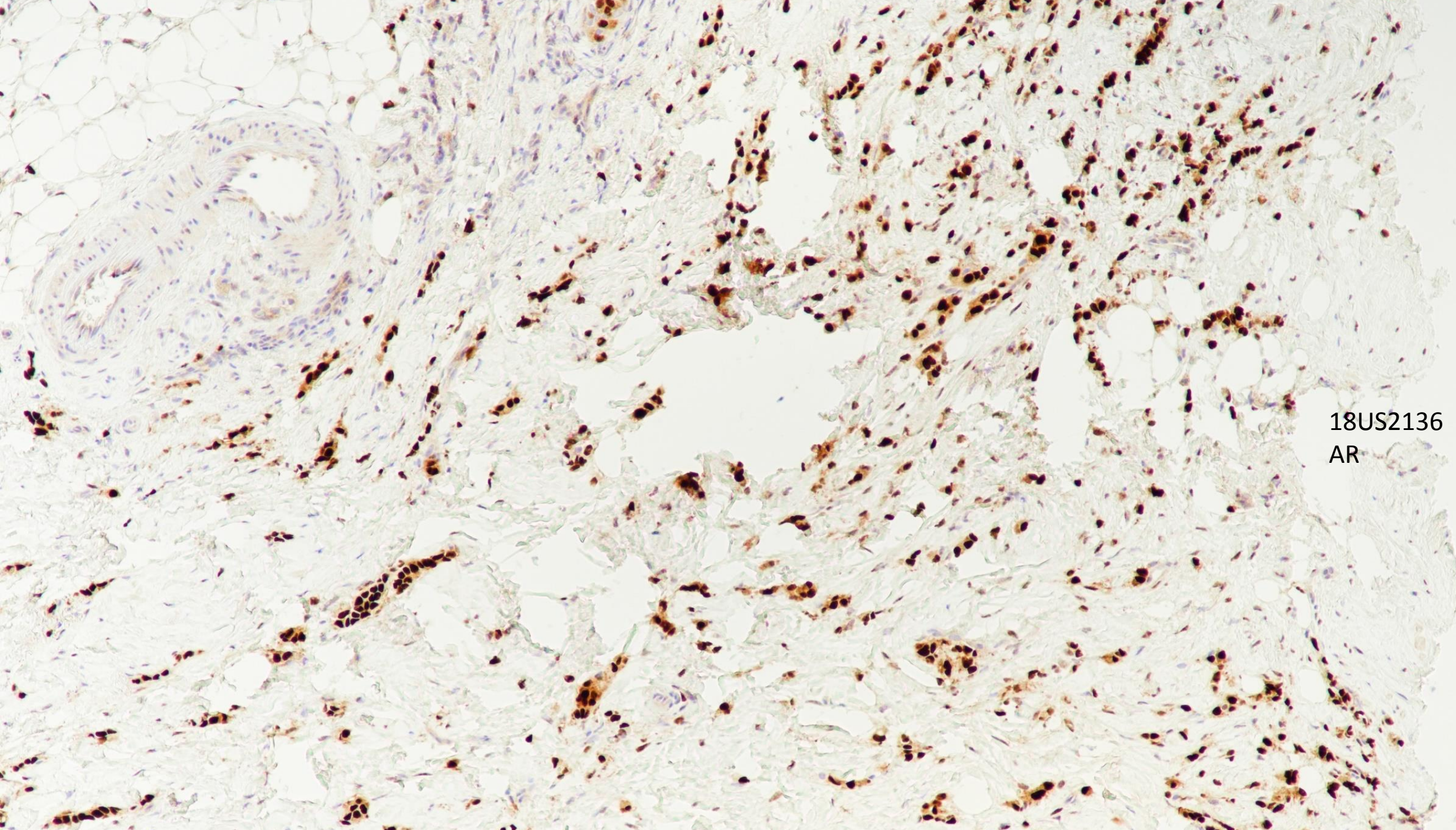
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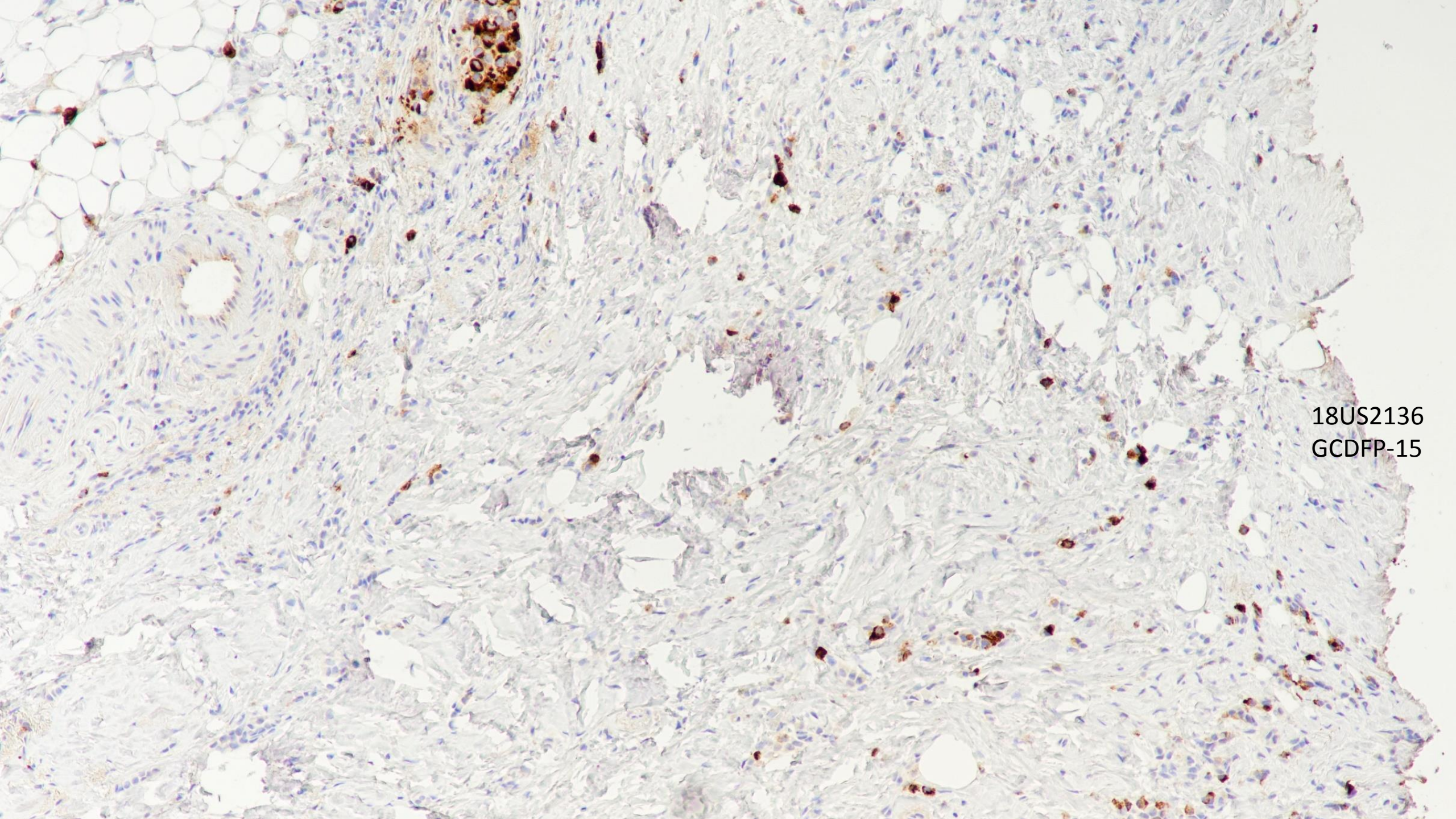
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GCDFP-15

Pleomorphic lobular carcinoma in situ (pLCIS)

- LCIS with high grade cytologic features
- Similar to classic LCIS, it fills and distends lobules in a loosely cohesive manner
- pLCIS tends to show a florid growth pattern and is frequently associated with central, comedo-type necrosis and calcifications
- Cells of pLCIS show enlarged, eccentrically placed nuclei that may have nucleoli
- Binucleated and multinucleated cells are frequently seen
- pLCIS shows more abundant cytoplasm than classic LCIS and can also show intracytoplasmic mucin vacuoles with signet ring cell features
- Apocrine differentiation may be seen in pLCIS cells and is characterized by abundant eosinophilic cytoplasm, cytoplasmic granules, and prominent nucleoli

Ginter PS & D'Alfonso TM 2017 Arch Pathol Lab Med 141:1668
Chen YY et al 2009 Am J Surg Pathol 33:1683

Biomarker expression in pLCIS

- Similar to classic LCIS, pLCIS lacks expression of E-cadherin
- Compared with classic LCIS, pLCIS exhibits greater variability in ER, PR, and HER2 expression.
  - pleomorphic LCIS : 44% showed ER –ve; 48% showed PR-ve and 13% HER2+ve
  - HER2+ve was mainly found in Apocrine-type pLCIS
- Average Ki-67 proliferation index was significantly higher in pLCIS than in classic LCIS (11.5% vs 4.2%)
  - Apocrine pLCIS (13.9%) showed a trend of higher proliferation index than non-apocrine LCIS (9.9%)
- Non-apocrine pLCIS showed lower AR expression (H-score= 168) than classic LCIS (H-score=199) and apocrine pLCIS (H-score=246)
- GCDFP-15 positivity higher in apocrine pLCIS (100%) than non-apocrine pLCIS (50%)
- Biomarker expression of synchronous classic LCIS and pLCIS demonstrated different ER and HER2 expression in the two components.

Chen YY et al 2009 Am J Surg Pathol 33:1683

Genomic changes in pLCIS

- Shared genomic changes with classic LCIS: 16q loss, 1q gain, and 17p
- Cyclin D1 amplification was more prevalent in pLCIS compared to classic LCIS
- Additional alterations only in pLCIS: amplification of the *HER2* gene (17q11.2–17q12),16p gain, and 8p loss
  - Amplification of 17q and 16p gain were only found in apocrine pLCIS
  - Apocrine pLCIS demonstrated significantly more genomic alterations than classic LCIS and non-apocrine pLCIS

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