

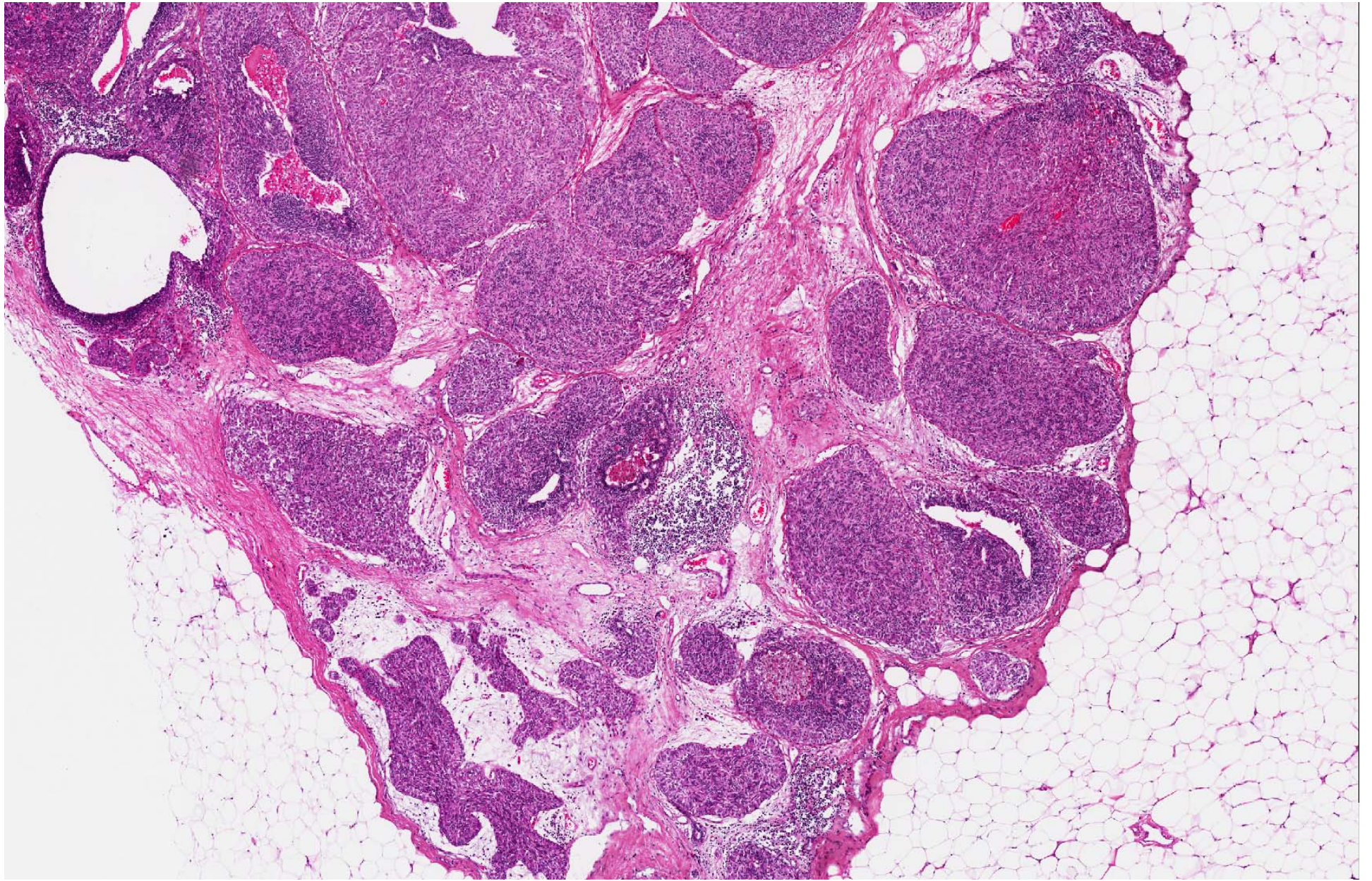
# Case

- Set A.1
- 70 year old Chinese lady with a right breast lump.

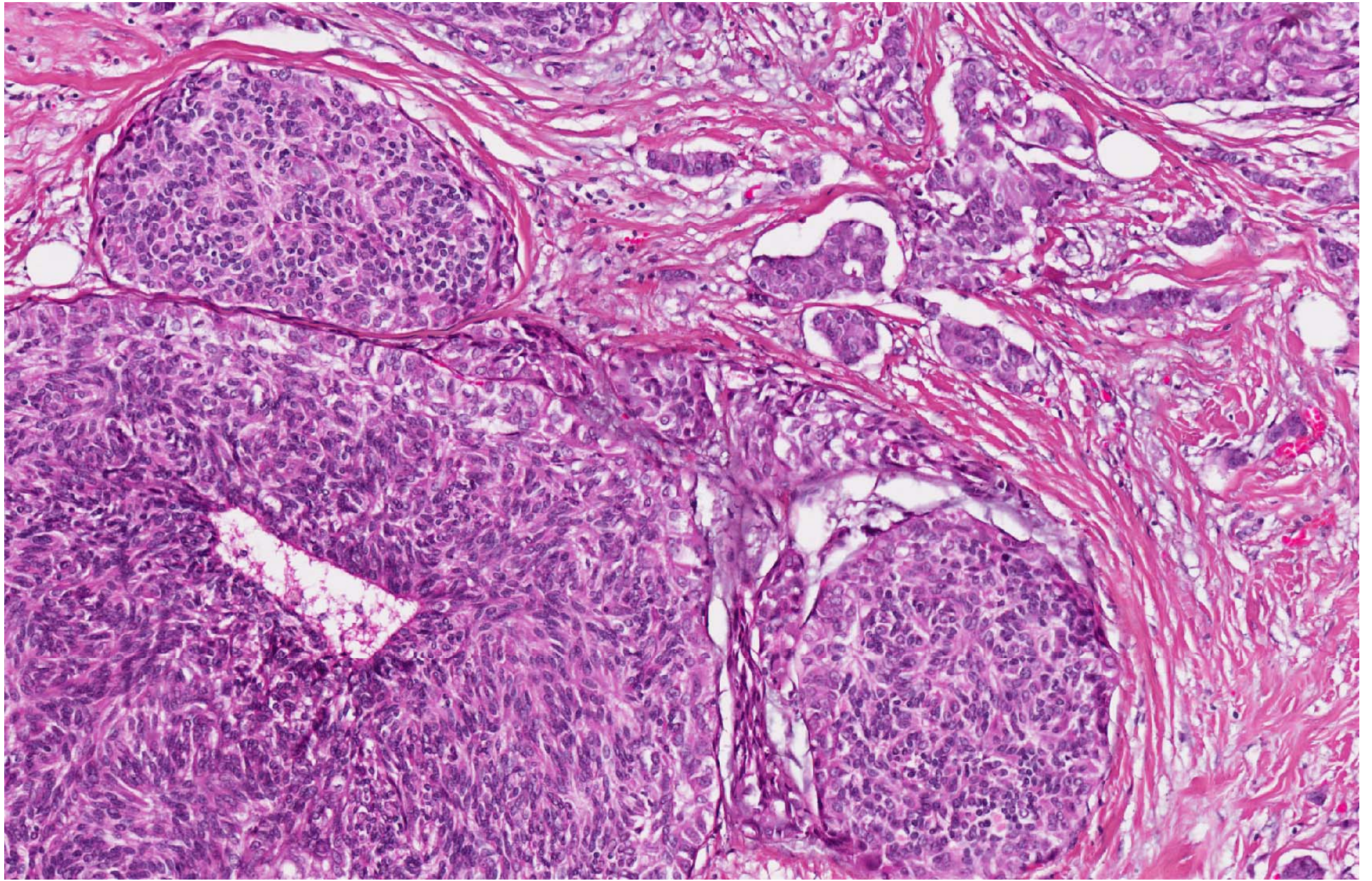
# Right breast lesion – gross appearance



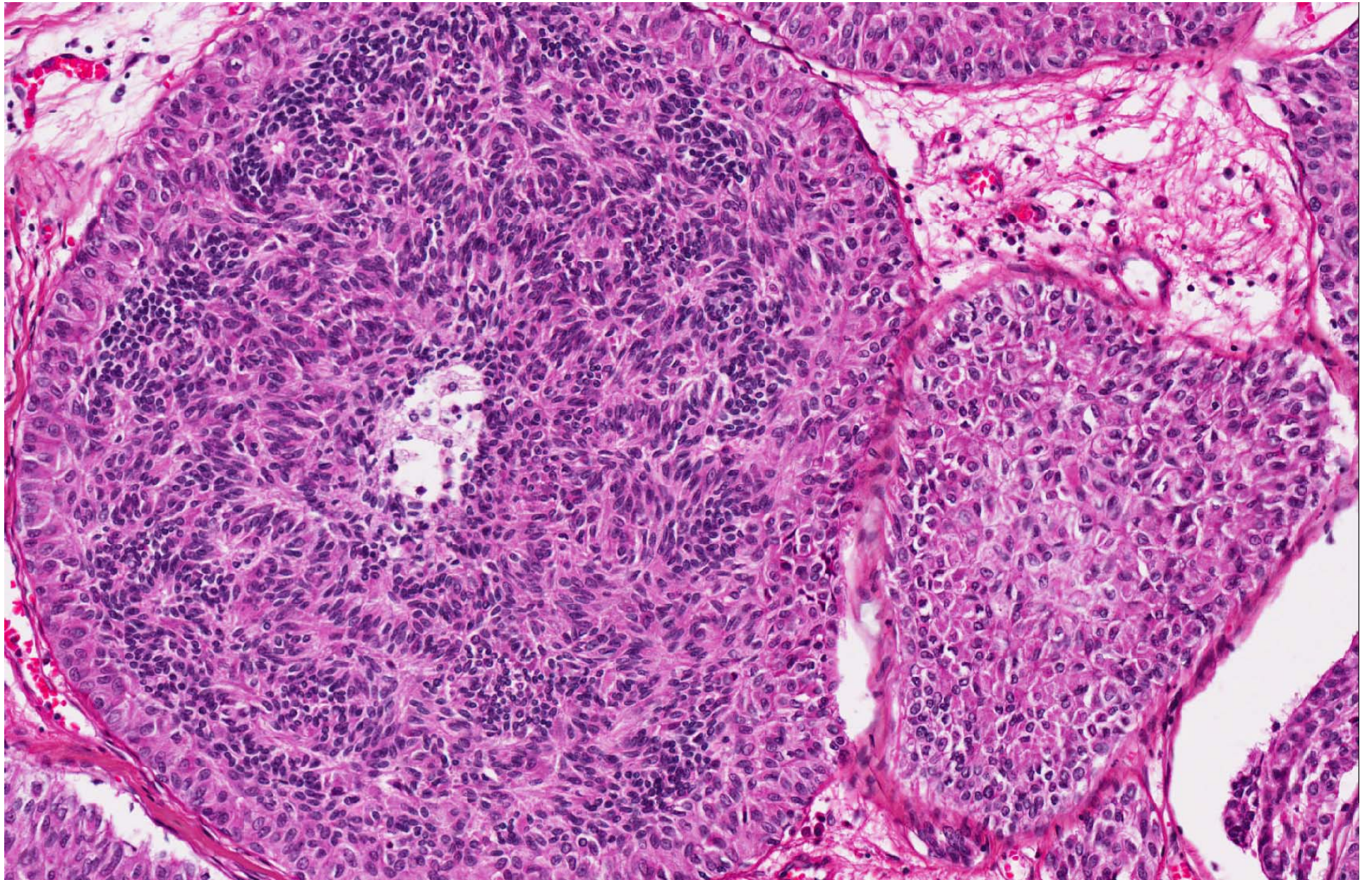




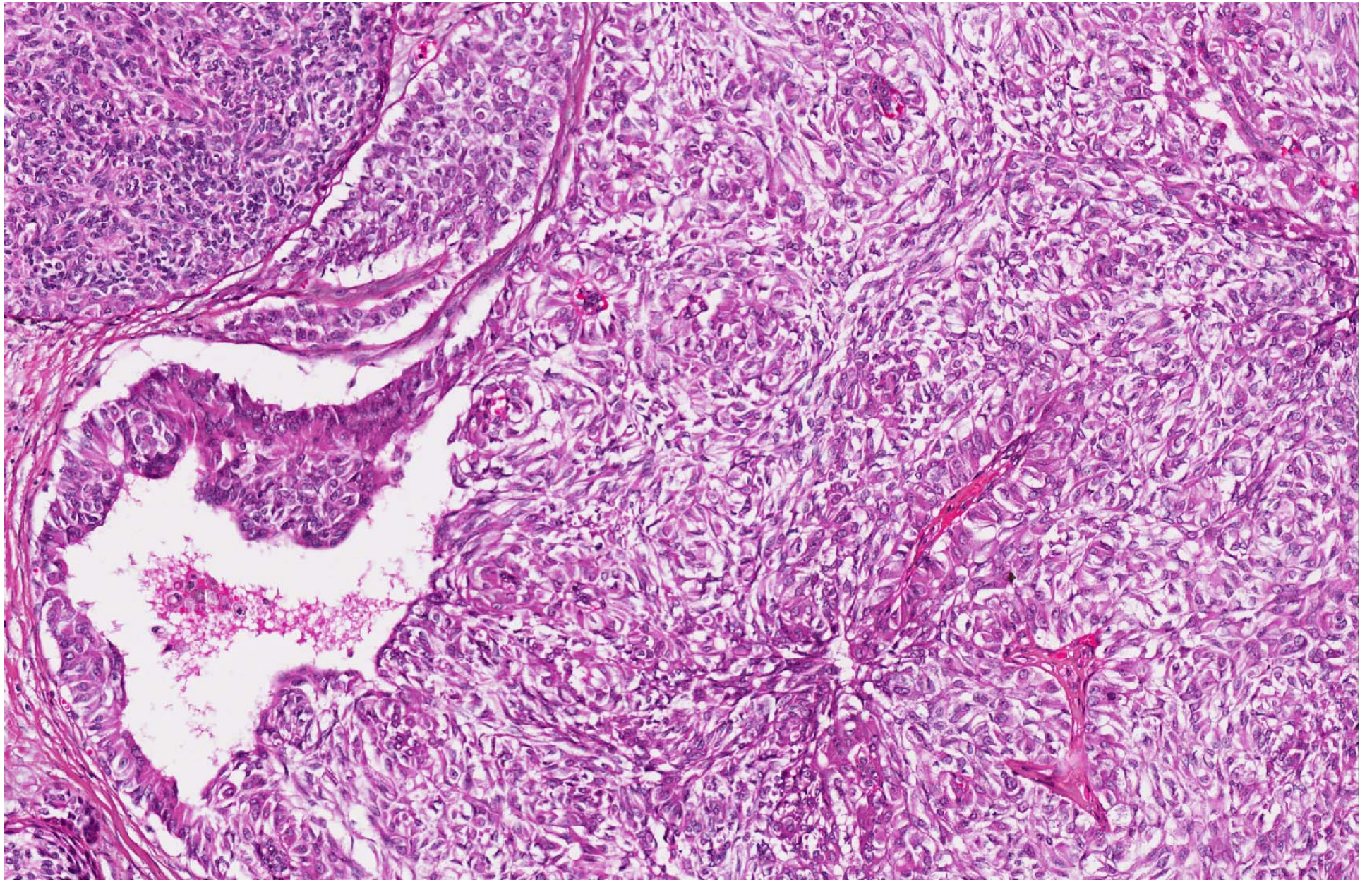




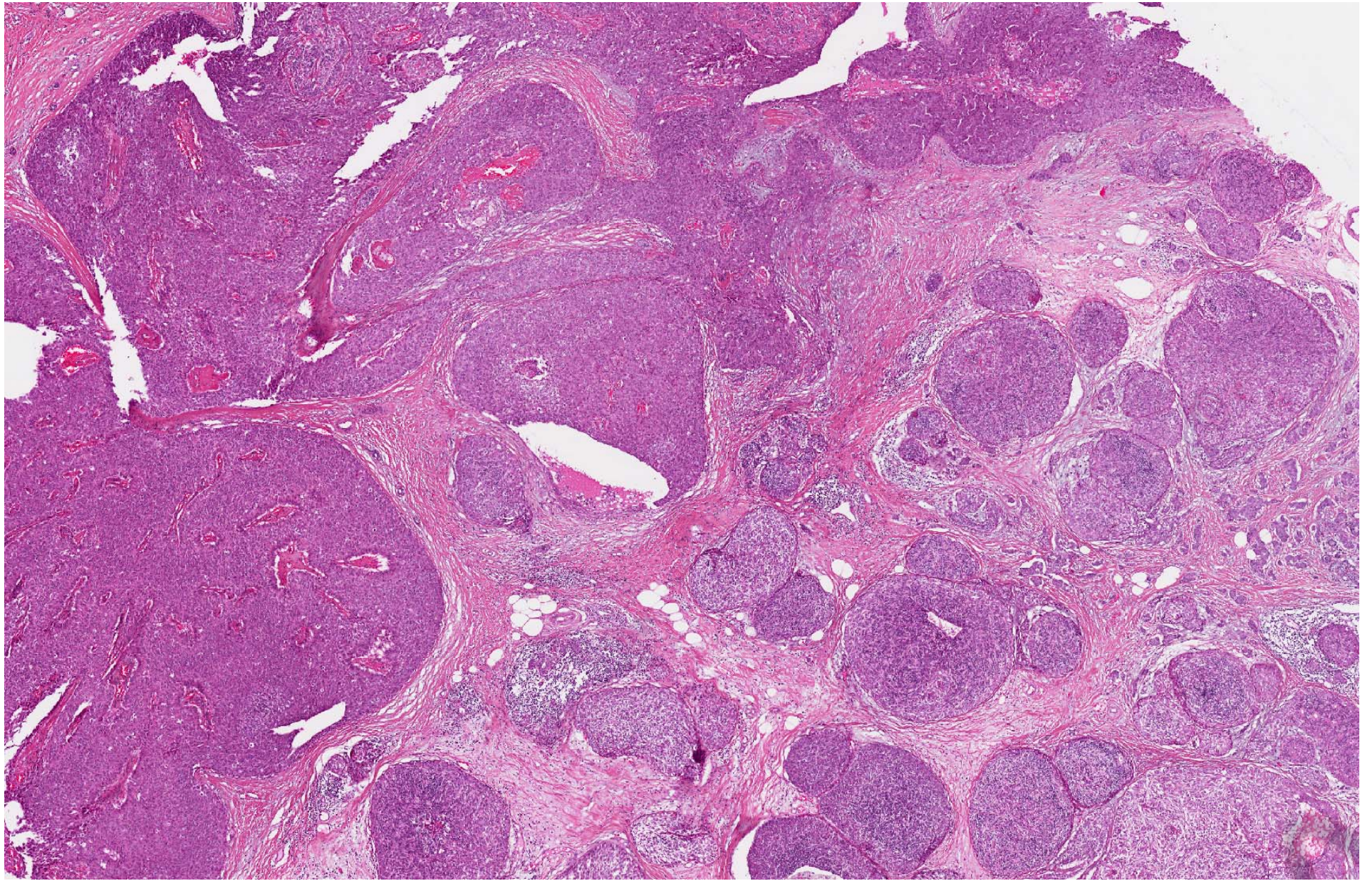




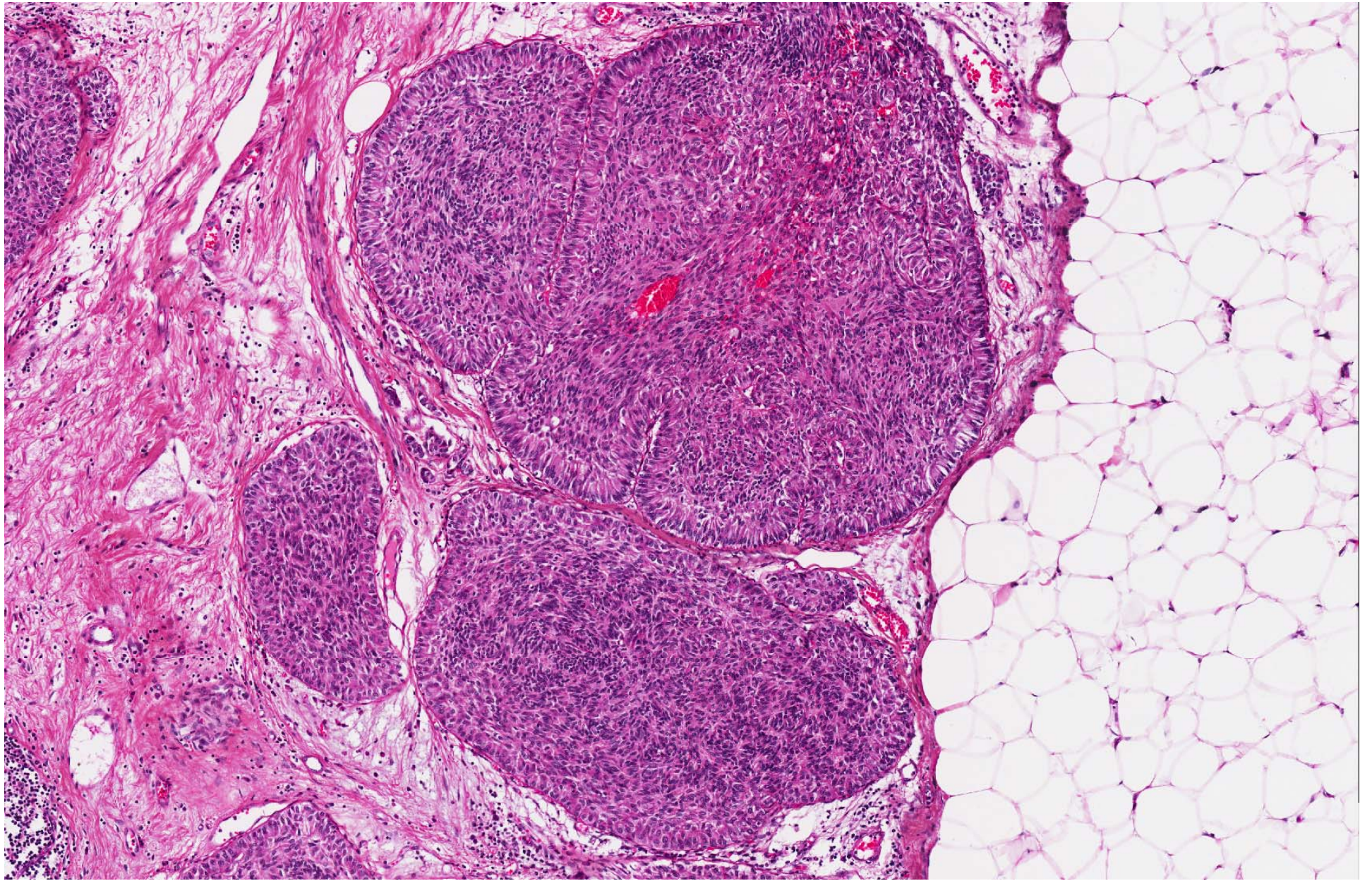




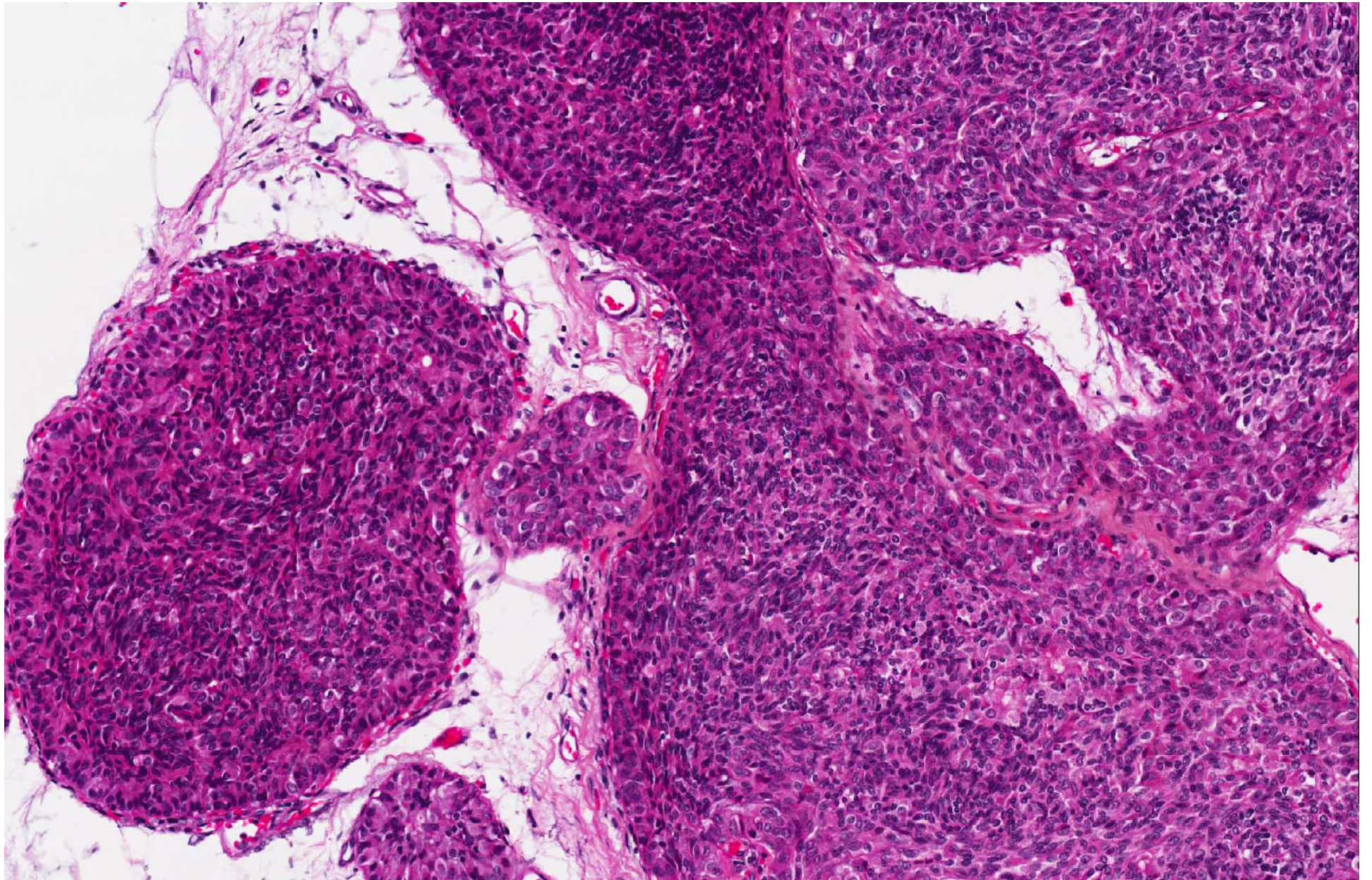




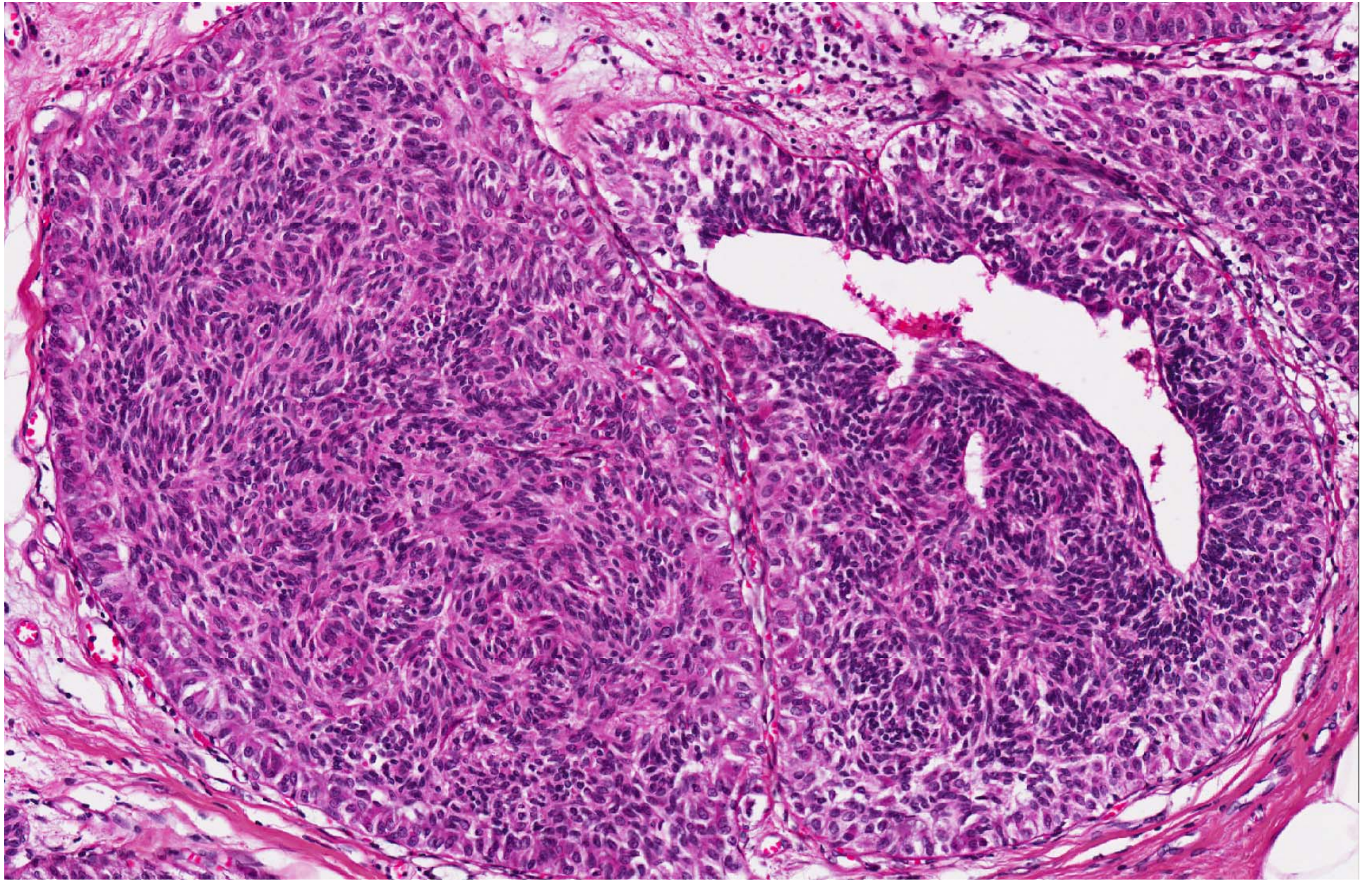




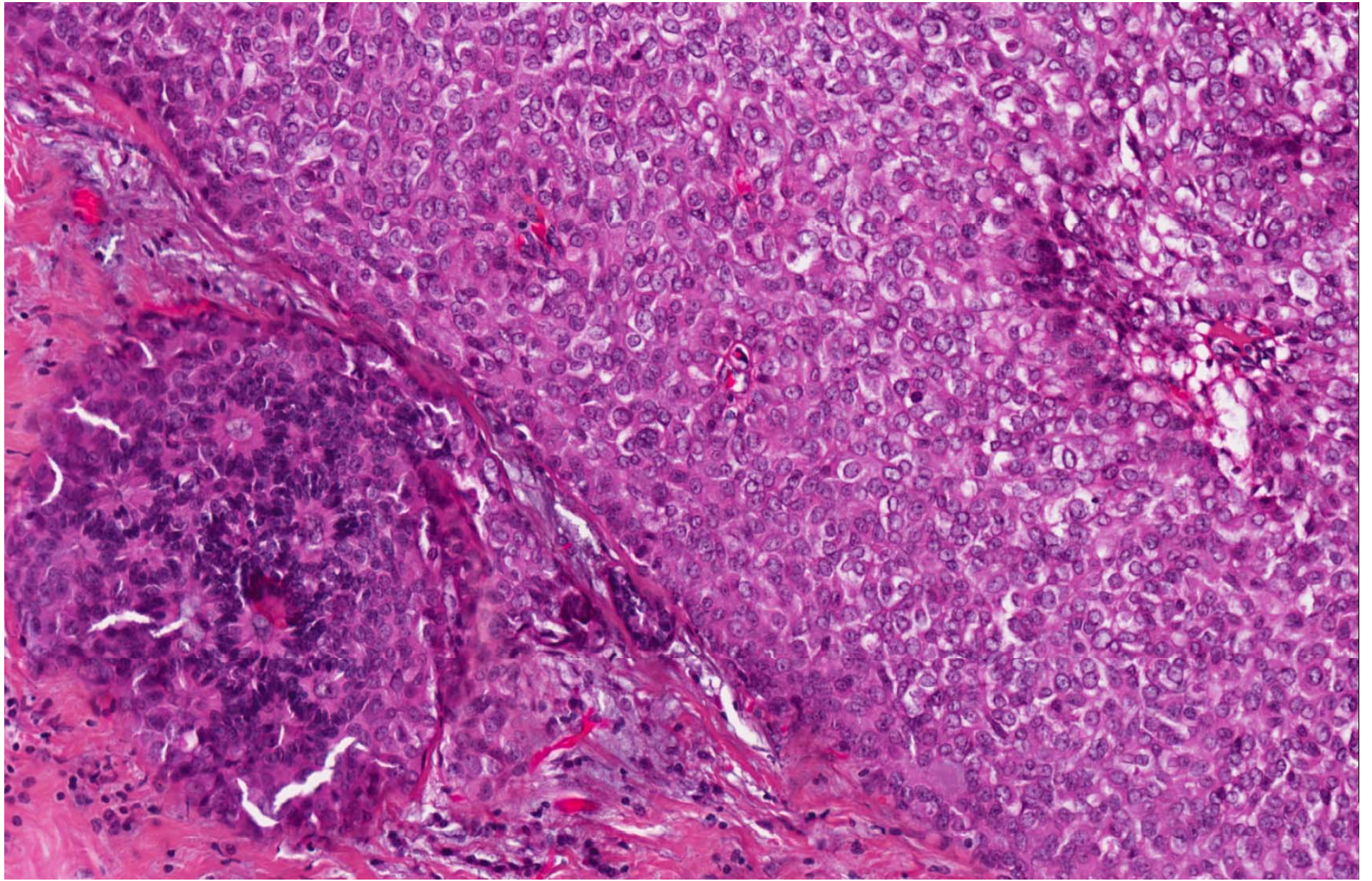




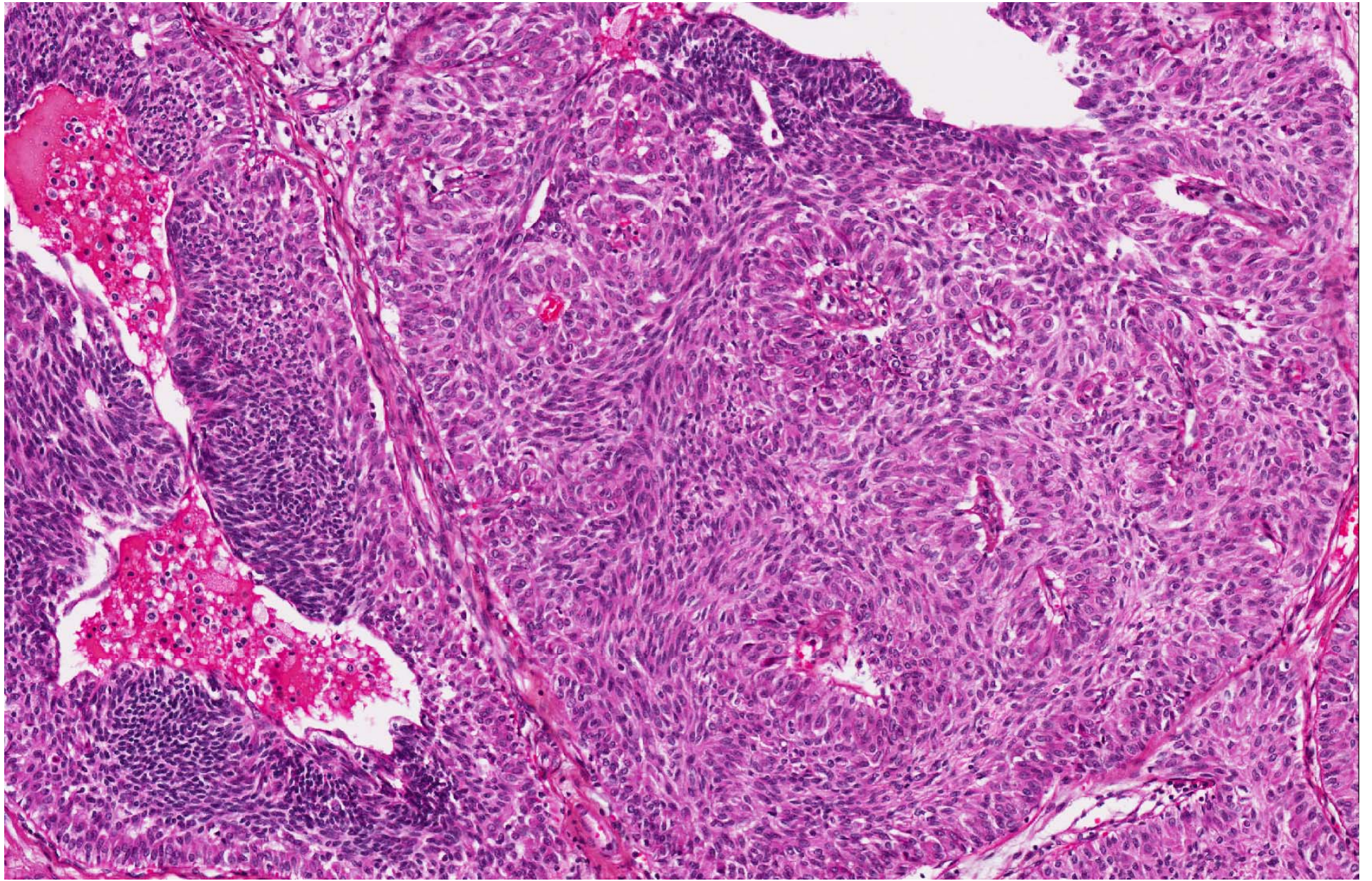




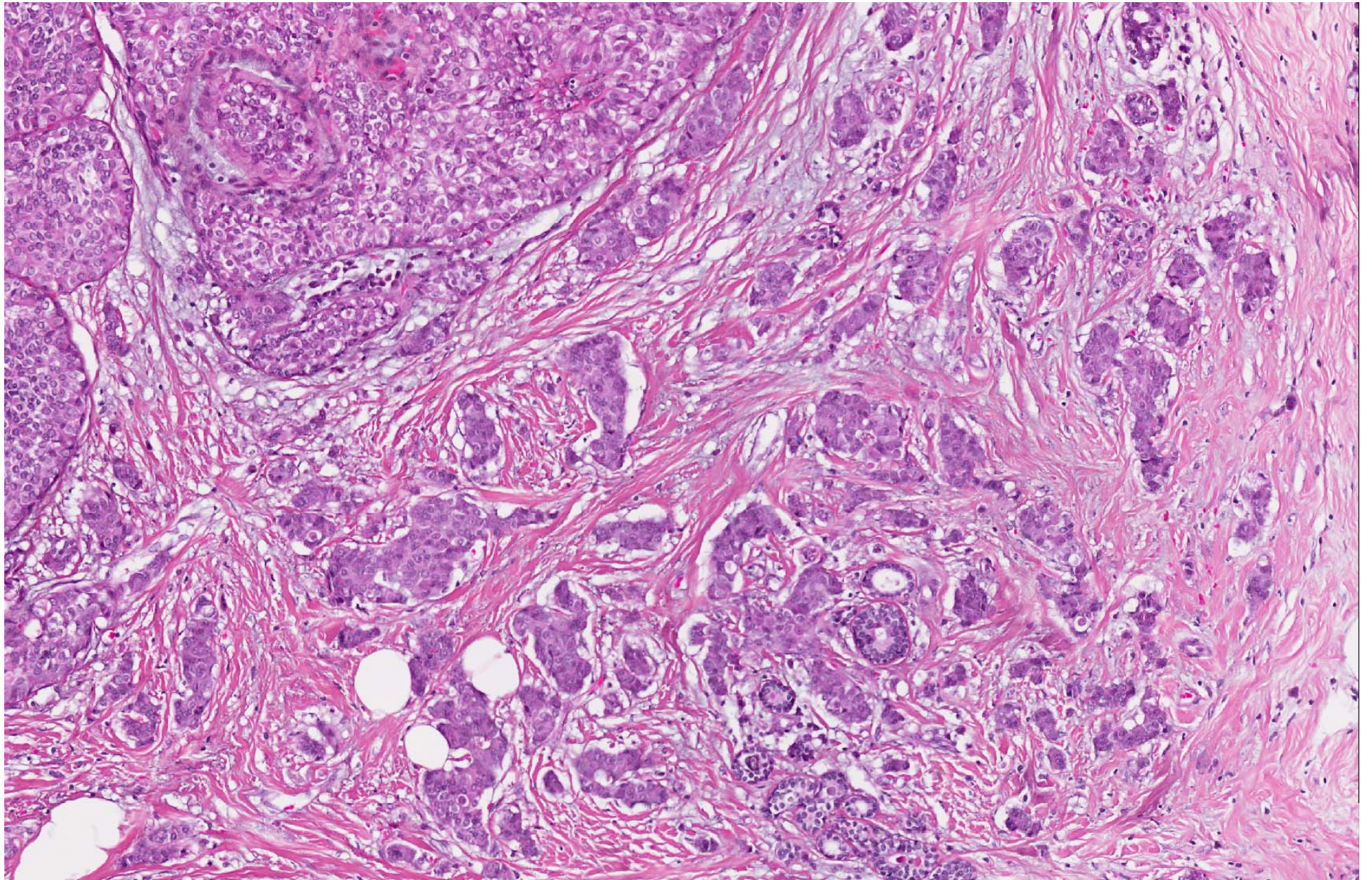




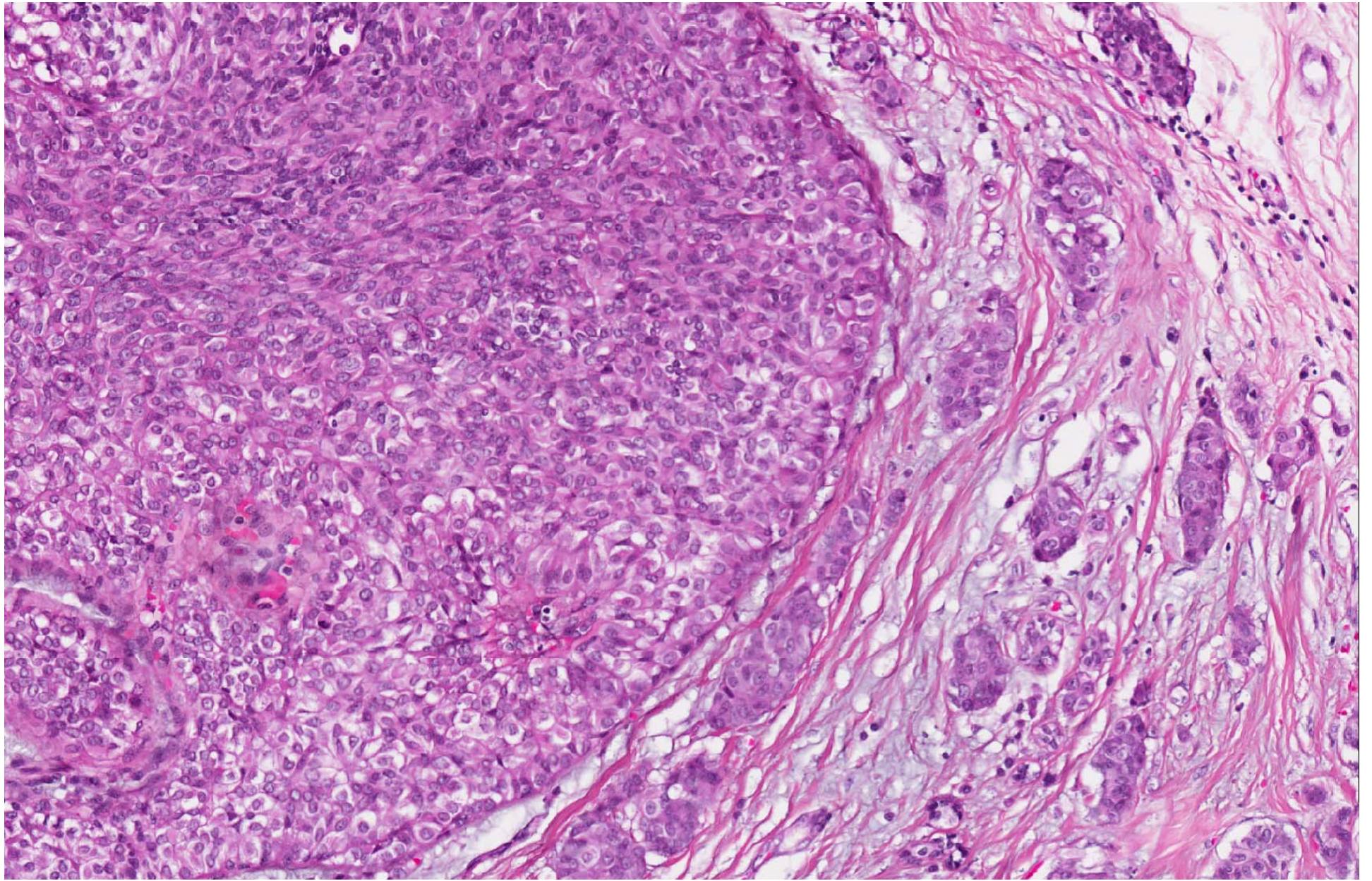














# Key histological findings

- Solid rounded circumscribed islands.
- Delicate fibrovascular septa coursing into several solid islands, giving a solid-papillary pattern.
- Spindle cell population.
- Palisading of epithelial cells around spaces containing capillaries – pseudorosettes.
- Nuclear alignment ('periodicity') of the epithelial cells.
- True lumens with periluminal cell polarisation.
- Epithelial cells show pink cytoplasmic granularity.
- Focal presence of irregular ragged nests of invasive carcinoma.
- Neuroendocrine markers positive on IHC.



- Spindle cell DCIS with neuroendocrine differentiation.
- Small focus of IDC (about 3 mm on the slide).



# Neuroendocrine DCIS with spindle cells

- Uncommon entity.
- Mimics benign epithelial proliferations.
- Tendency for solid-papillary configuration, resembling the benign intraductal papilloma with florid usual epithelial hyperplasia.



# Neuroendocrine DCIS

- Distinct clinicopathologic entity initially characterised by Cross et al in 1985.
- Affects older women who present with bloodstained nipple discharge.
- Endocrine differentiation in the breast is believed to represent a pathway of neoplastic development.



# Neuroendocrine & spindle DCIS

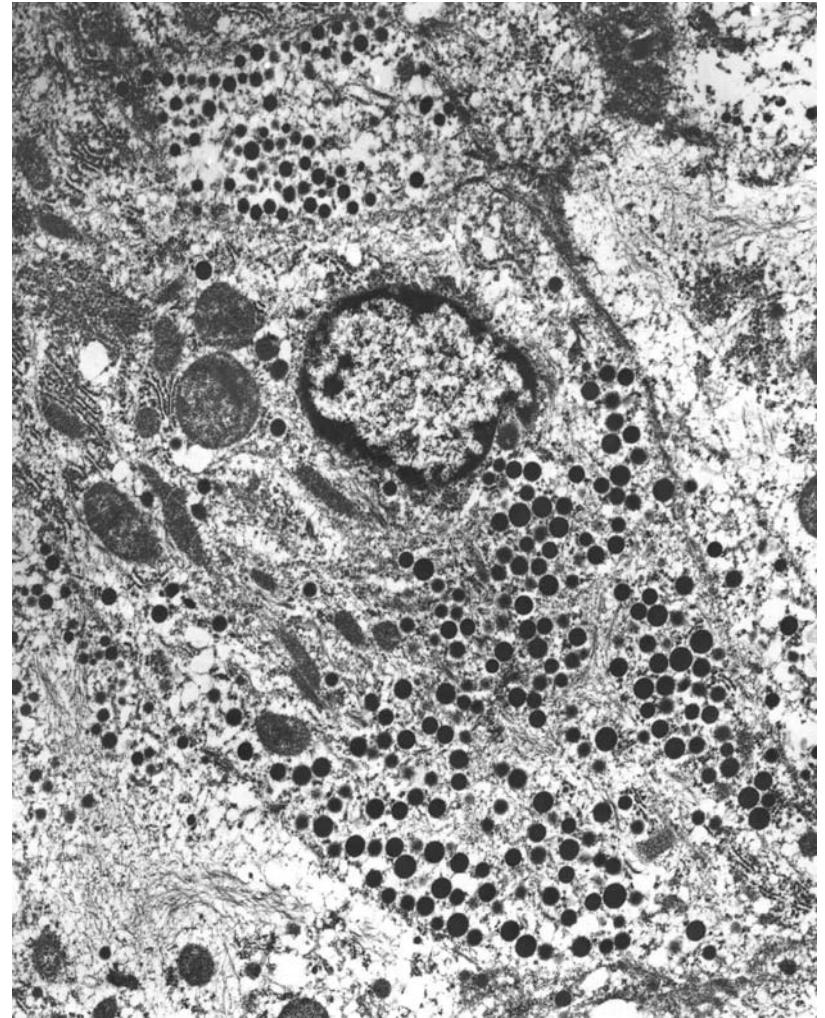
- Tsang & Chan reported 34 cases of endocrine DCIS (14 were pure in situ lesions), spindled cells were found in 17 (50%) cases. *Am J Surg Pathol 1996; 20: 921-43.*
- Farshid et al described 17 cases of DCIS with a predominantly spindle cell appearance; endocrine differentiation was found in all 8 cases evaluated immunohistochemically. *Virchows Arch 2001; 439: 70-77.*



# Neuroendocrine & spindle DCIS

- 11 cases of DCIS with spindle cells, NE differentiation was observed in 9 cases (8 on immunohistochemistry, 1 with ultrastructural neurosecretory granules).

*Histopathology 2004; 45: 343-51.*





# Role of immunohistochemistry

- Synaptophysin, chromogranin for endocrine differentiation.
- CK5/6, CK14 to distinguish from usual epithelial hyperplasia. *Am J Surg Pathol 2005; 29: 625-632.*
- Diffuse expression for ER, PR supports monotypic neoplastic population.



# DCIS with neuroendocrine differentiation and spindle cells

- Indolent disease with favorable prognosis.
  - Low nuclear grade.
  - Few mitoses.
  - Absent necrosis.
  - Diffuse ER, PR expression.



# Invasive component in neuroendocrine spindle cell DCIS

- Ragged epithelial nests.
- Stromal reaction around these nests.
- Lack of myoepithelial cells, which can be confirmed with immunohistochemistry.
- Invasive cancer can be ductal NOS with or without neuroendocrine differentiation.



# Learning points

- Recognition of spindle cell DCIS.
- Understanding the link between spindle cell DCIS and neuroendocrine differentiation.
- Distinction from usual epithelial hyperplasia.
- Diagnosis of small focus of invasion.



# References

- Tsang WY, Chan JK. Endocrine ductal carcinoma in situ (E-DCIS) of the breast: a form of low-grade DCIS with distinctive clinicopathologic and biologic characteristics. *Am J Surg Pathol*. 1996 Aug;20(8):921-43.
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