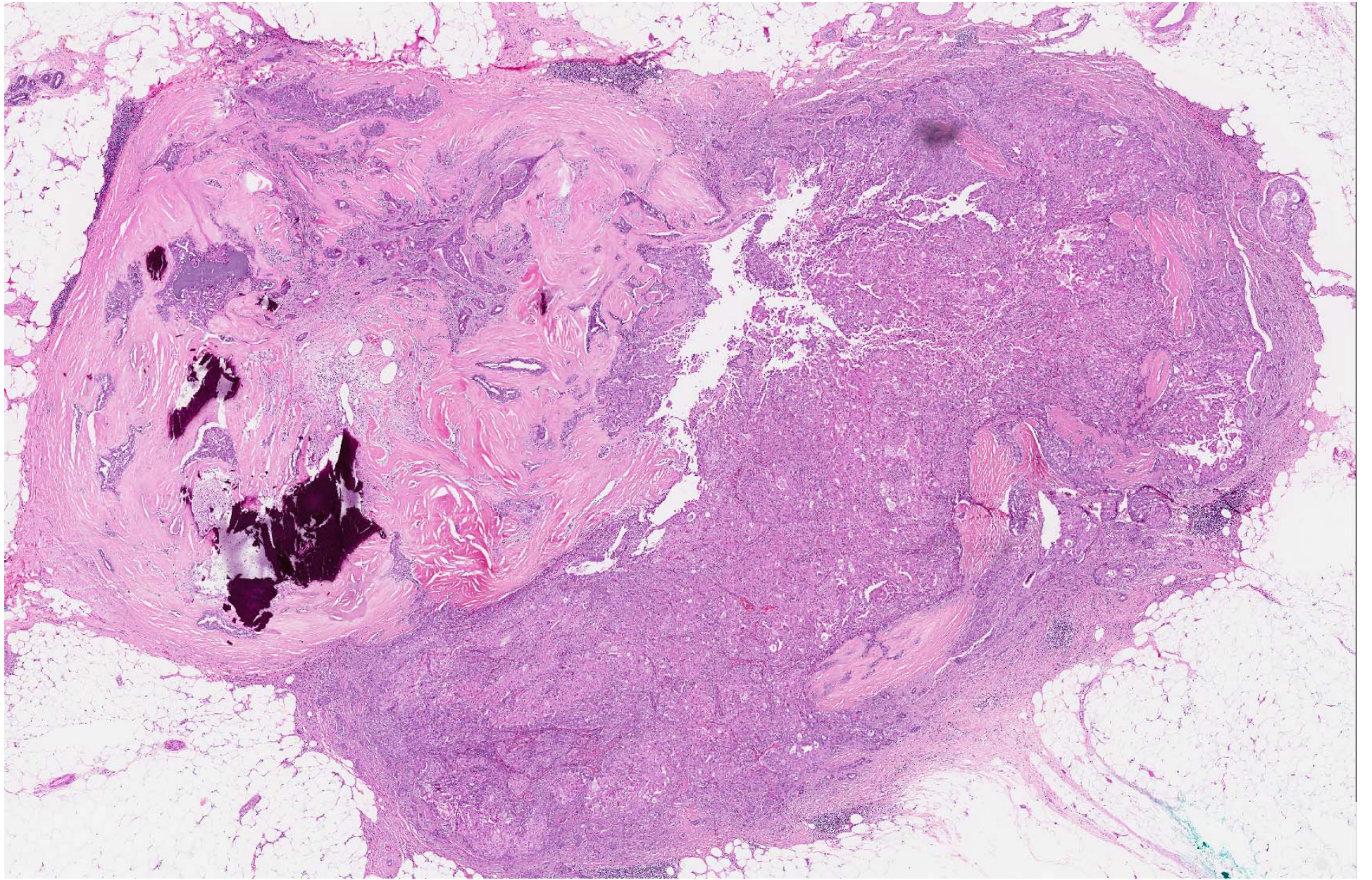
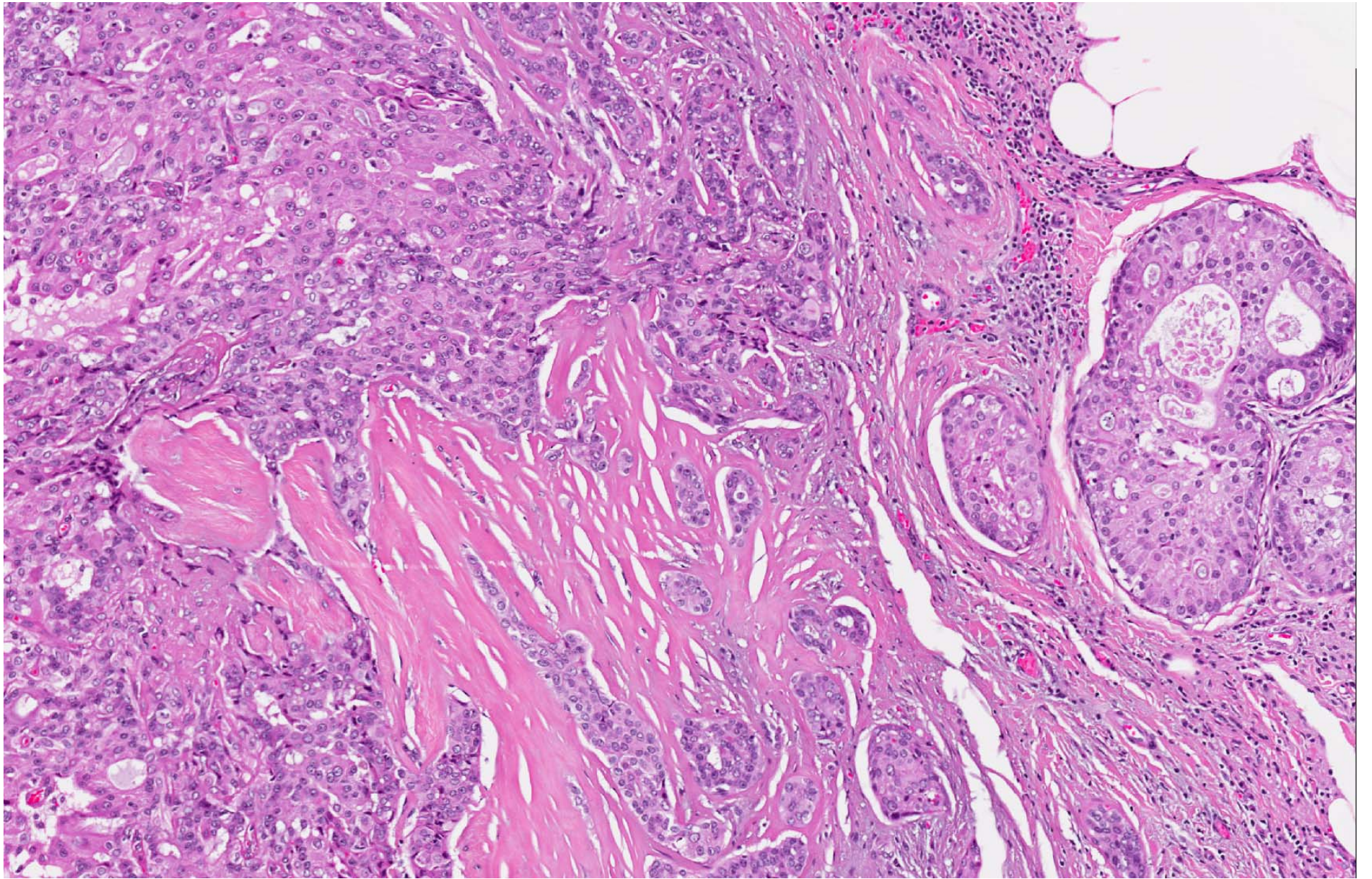
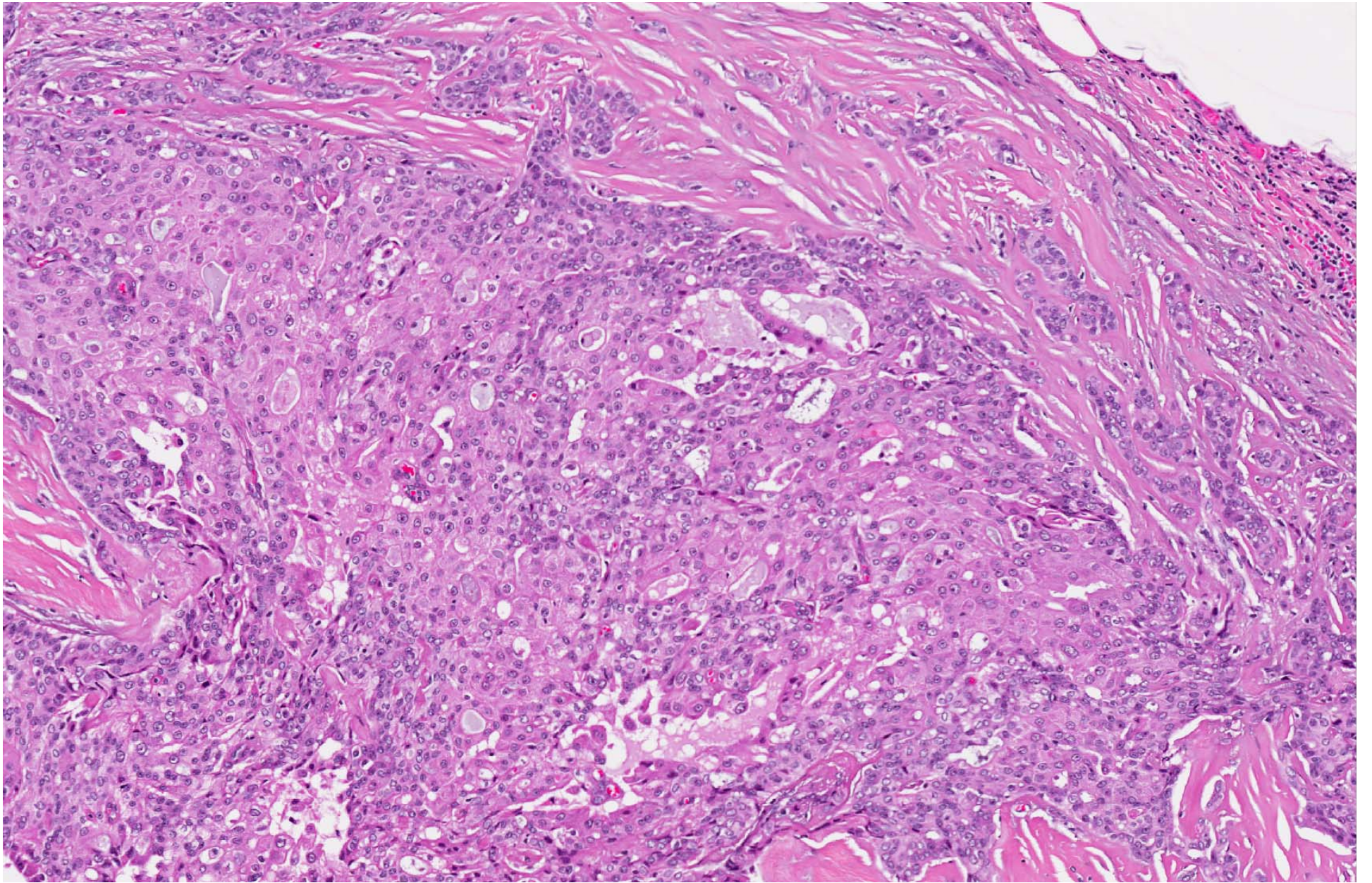
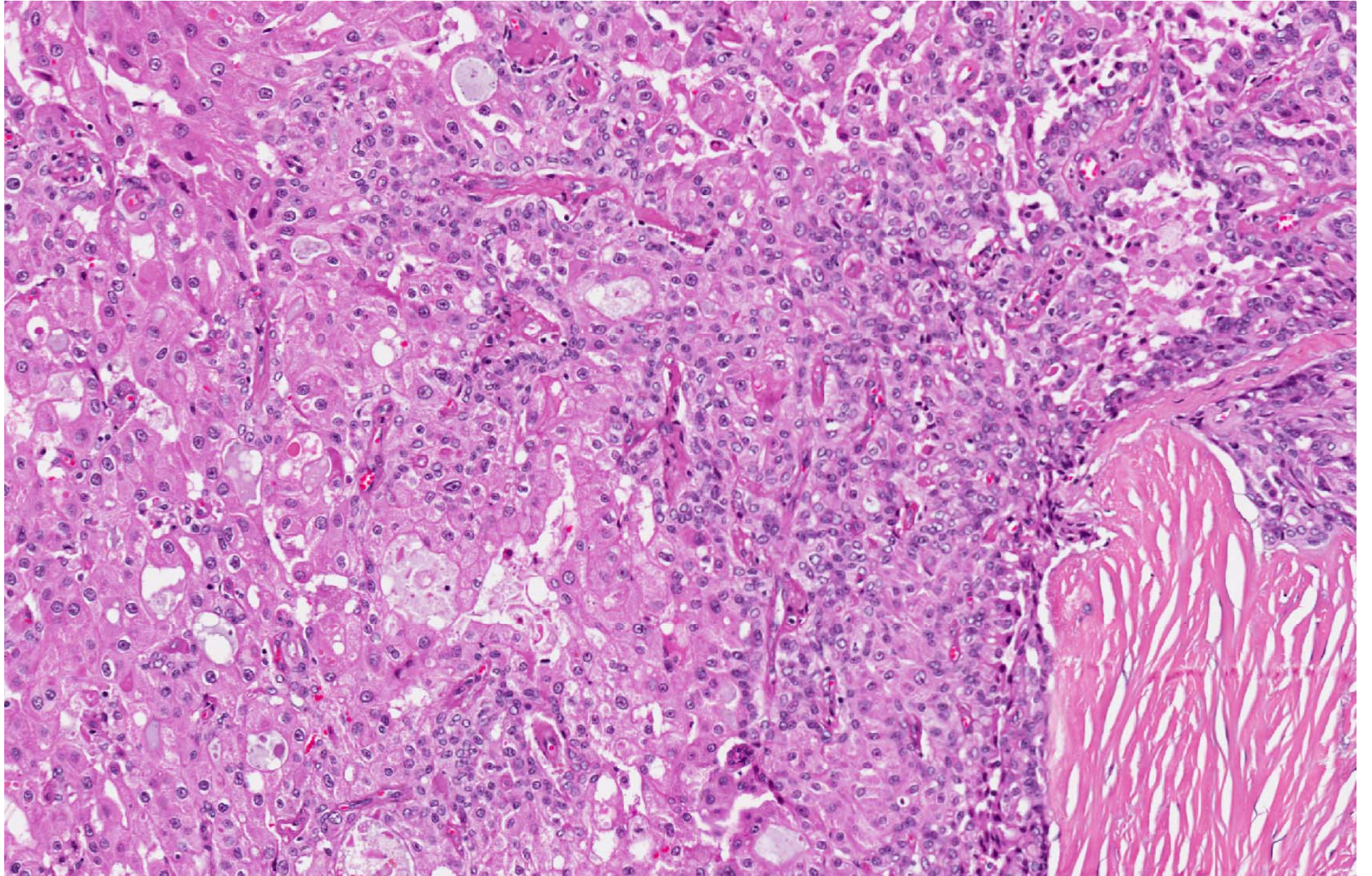


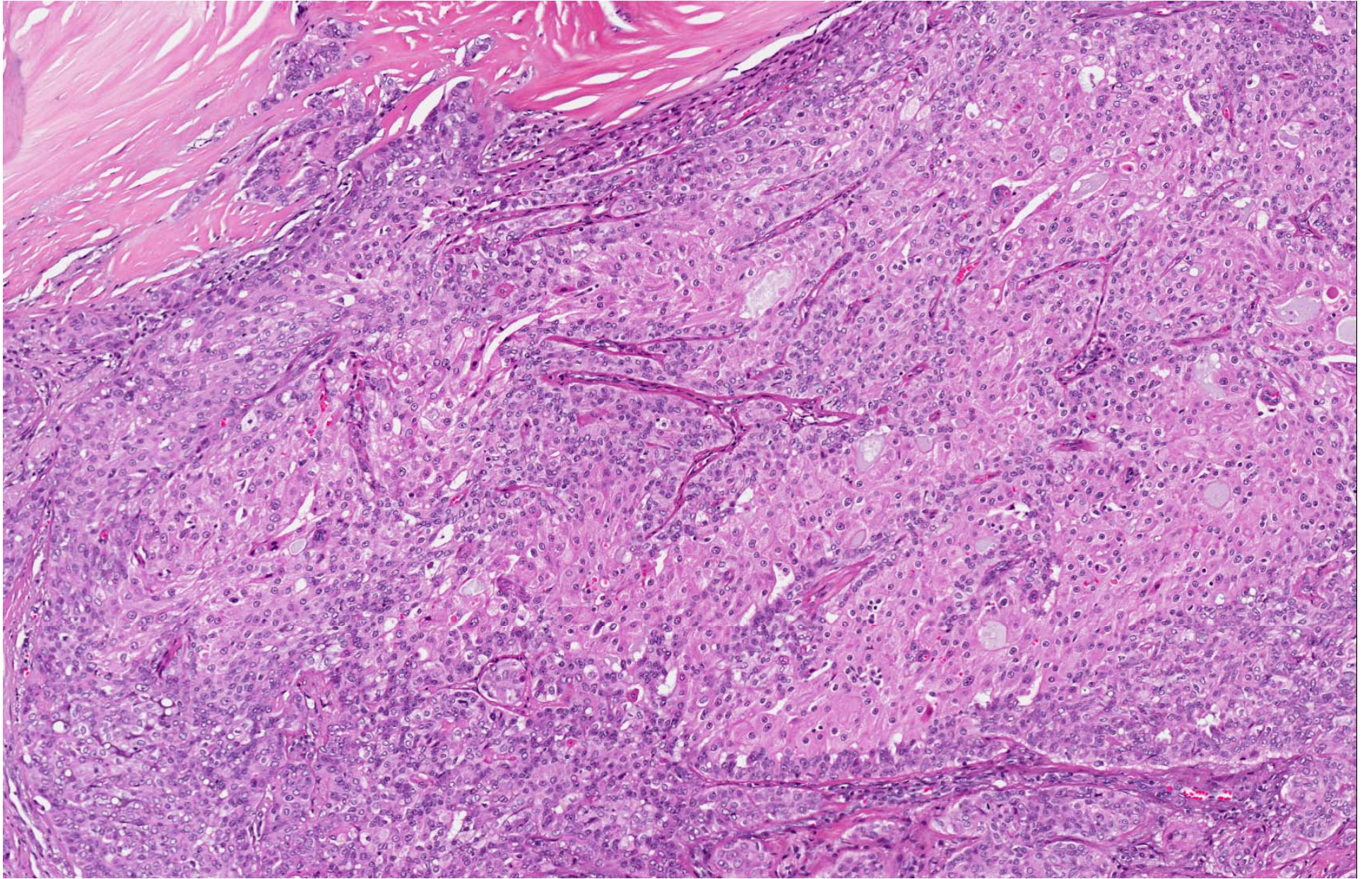
- Set A.5
- 54 year old Chinese lady underwent screening mammography and was radiologically detected with 2 nodular lesions in the right breast at the 7o'clock and 12o'clock positions. Hookwire localization excision biopsy procedures followed core biopsies of both lesions. Current histological section (A4) is from open excision of the right breast 7o'clock lesion.

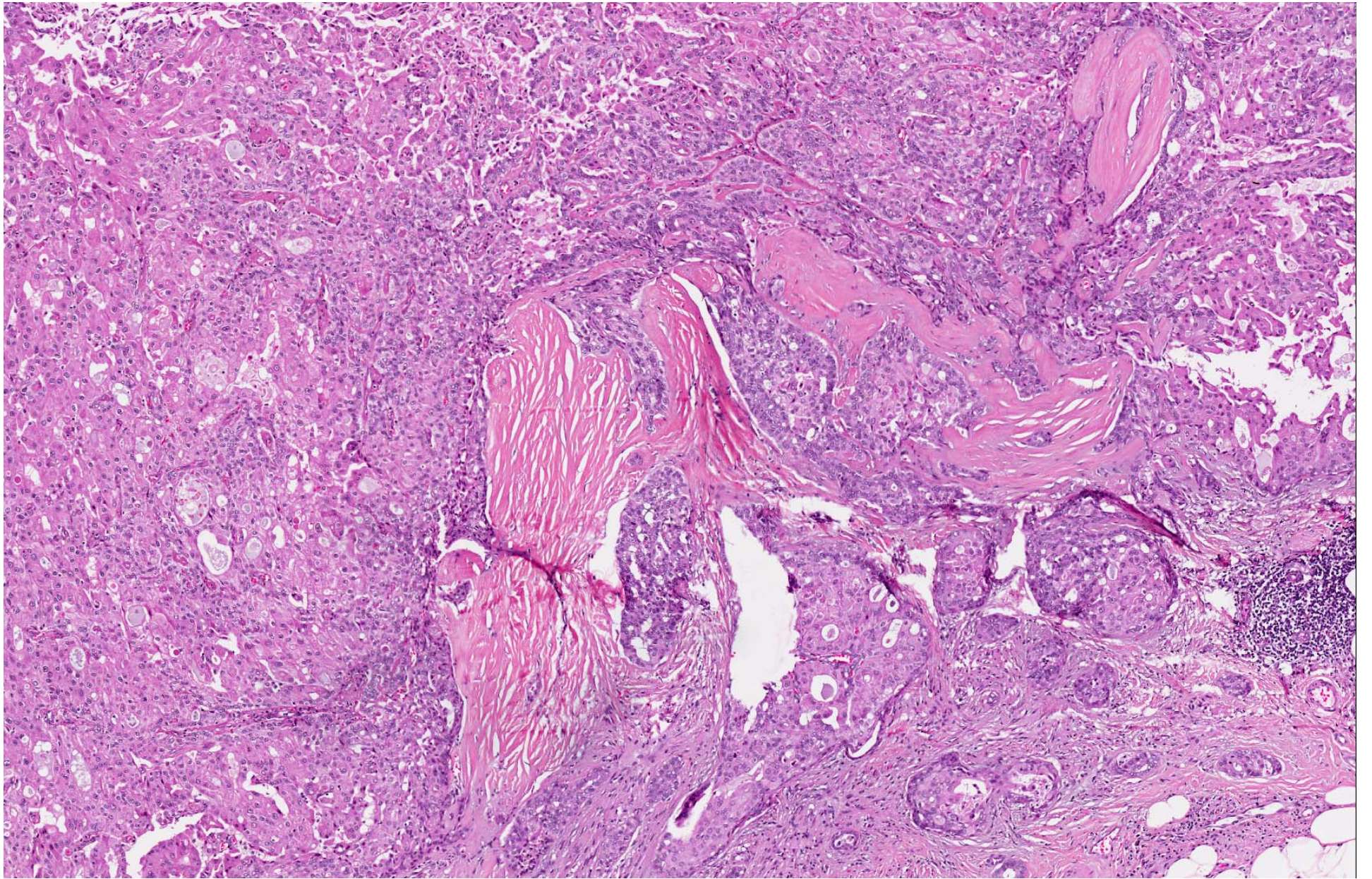


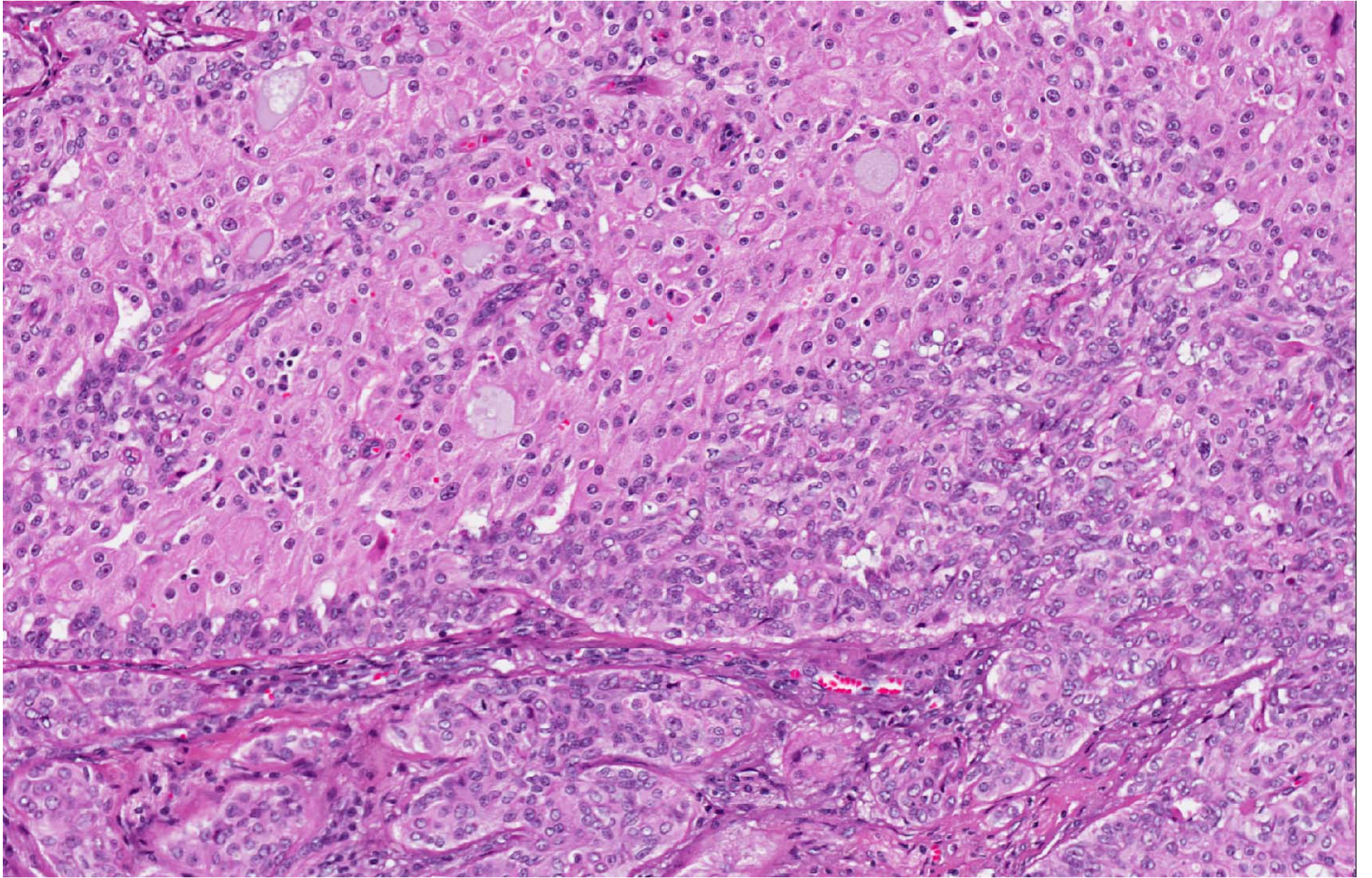




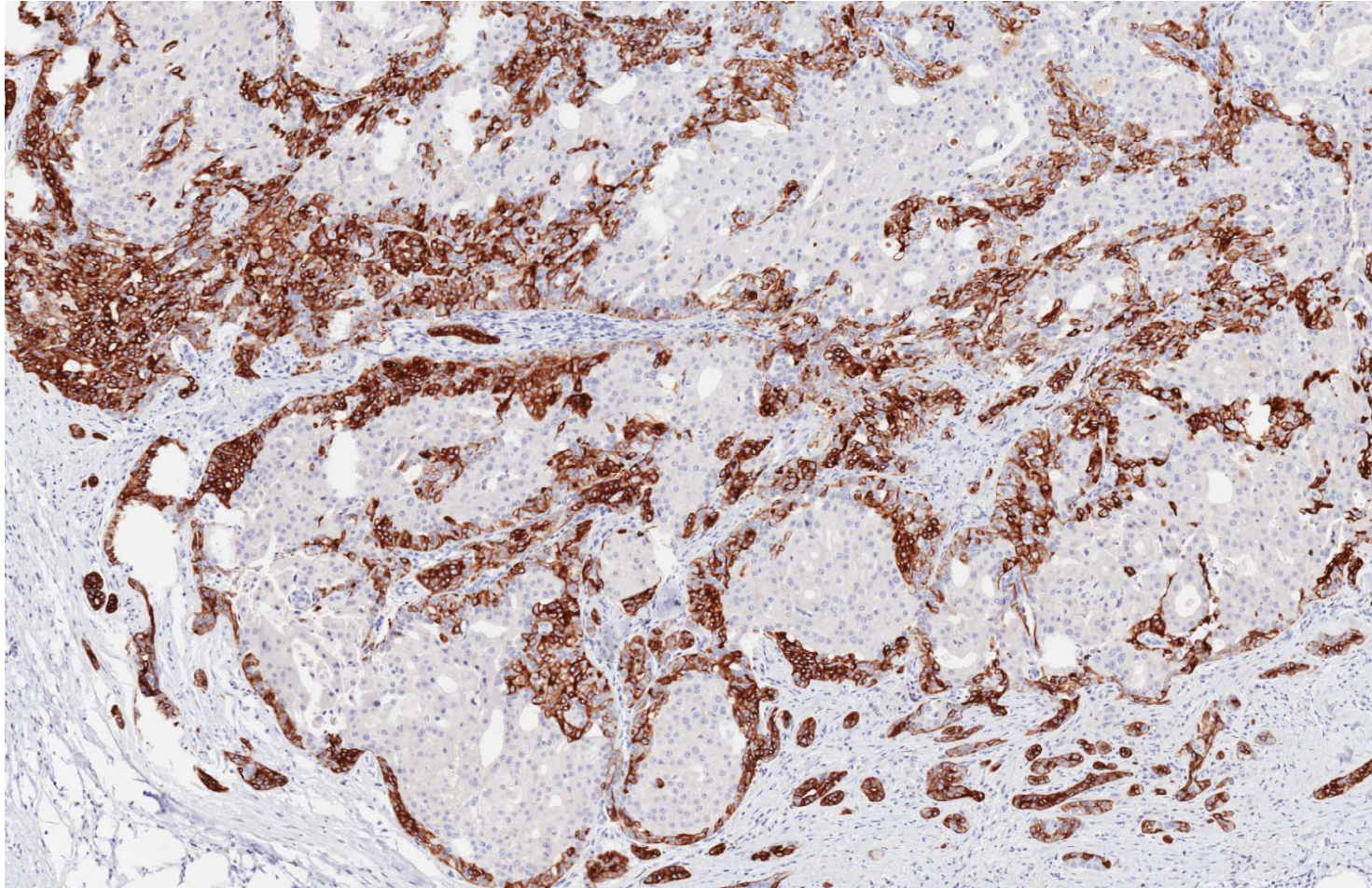




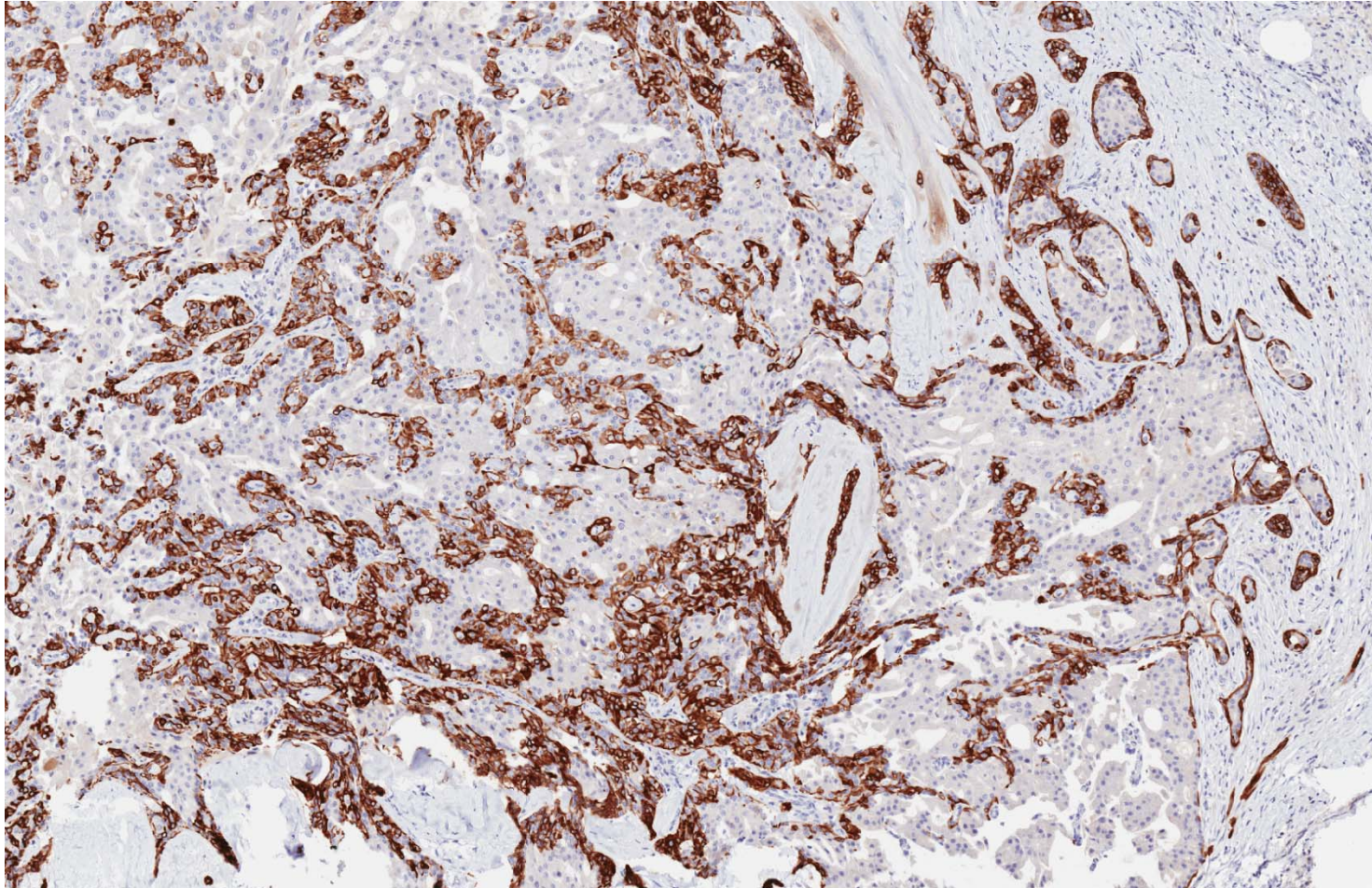




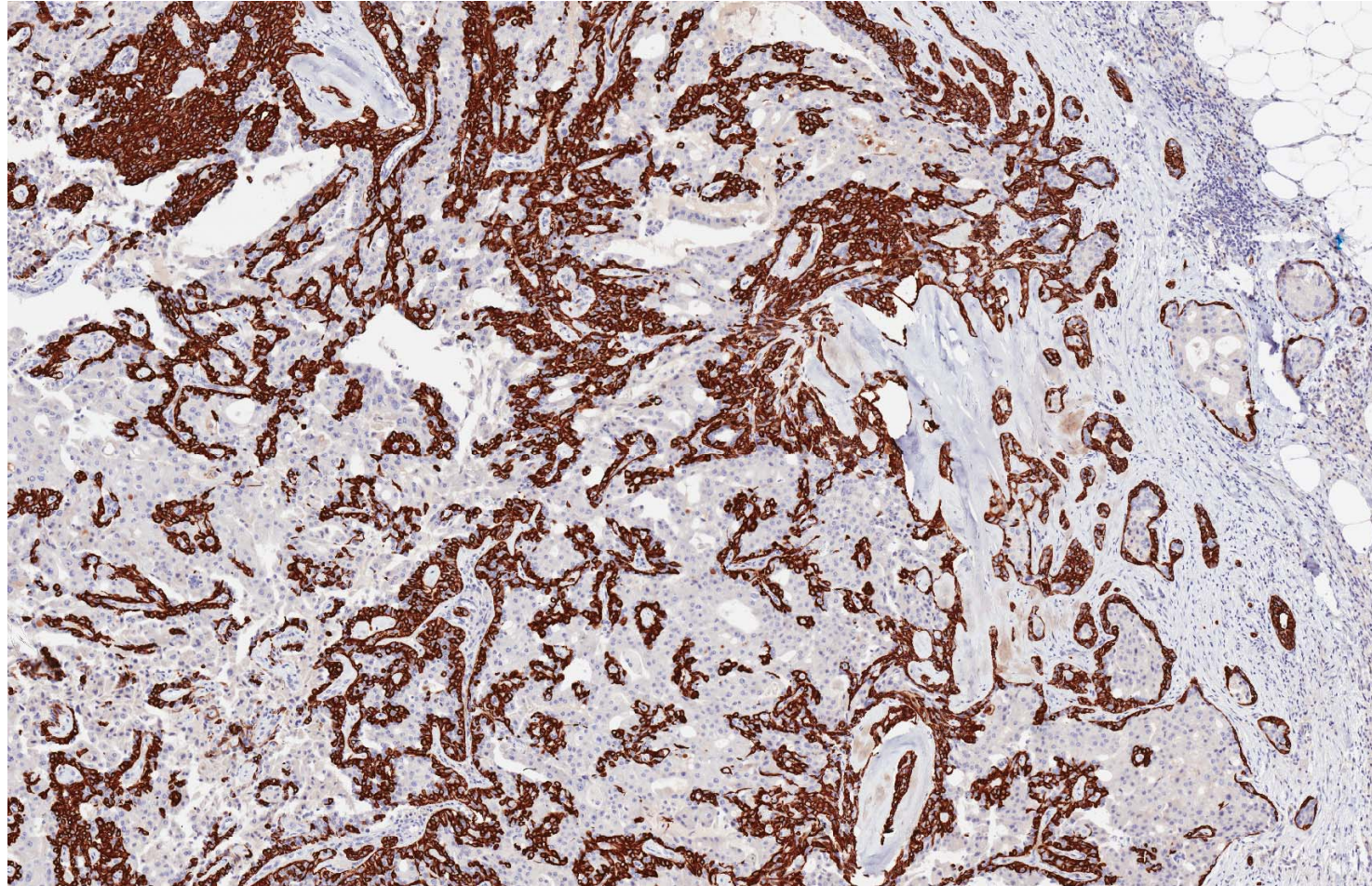
CK5/6



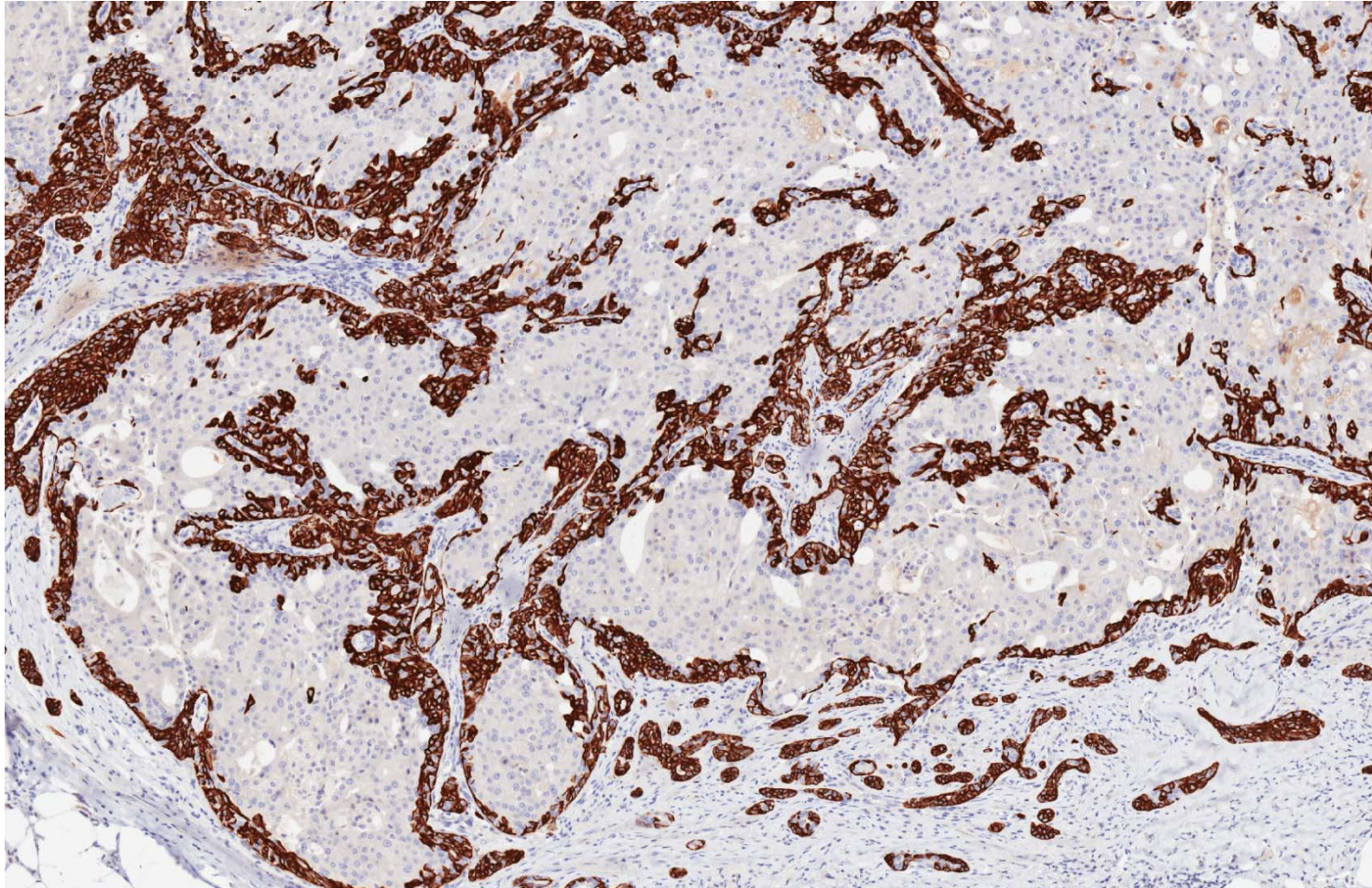
CK5/6



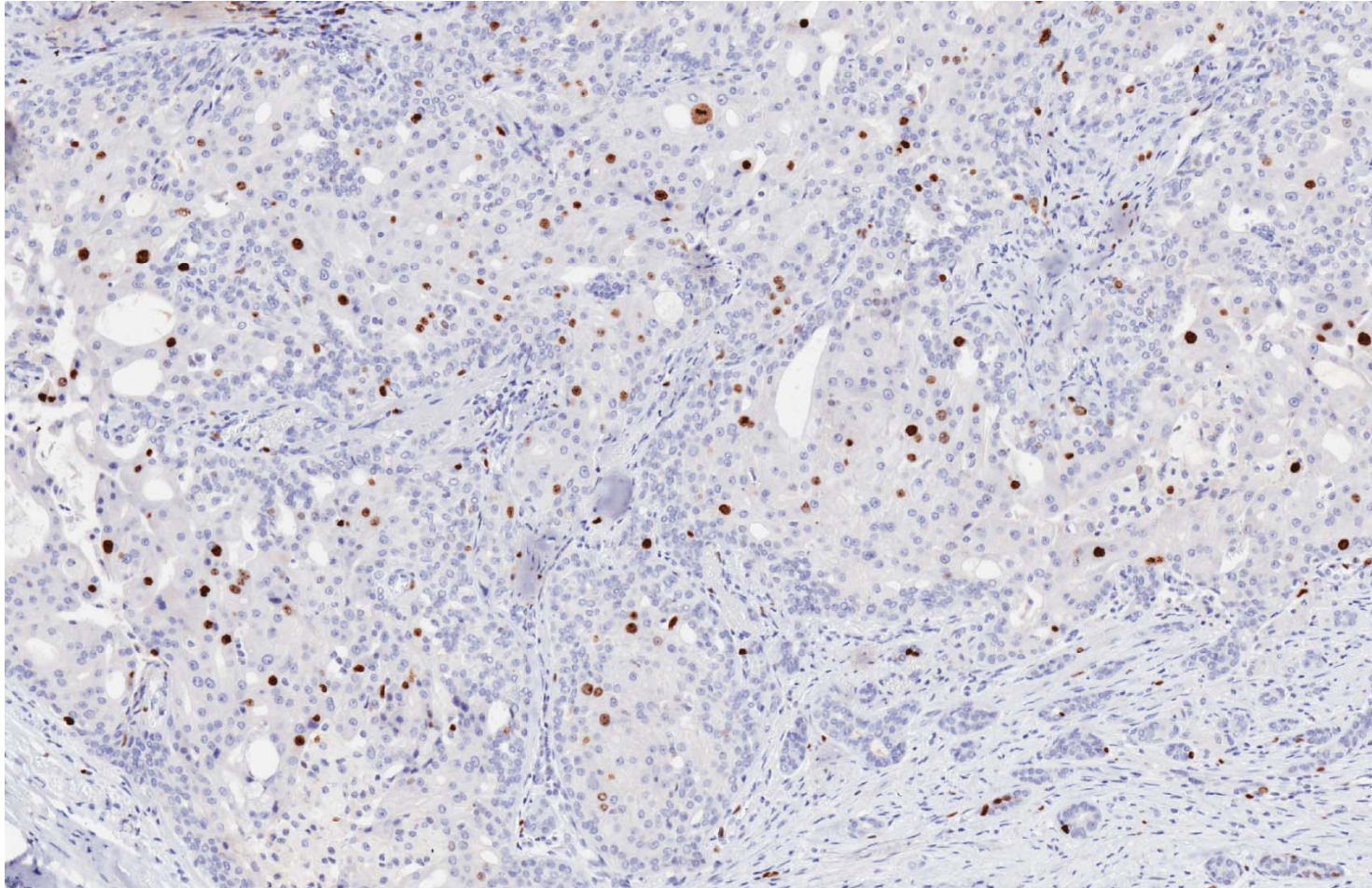
CK14



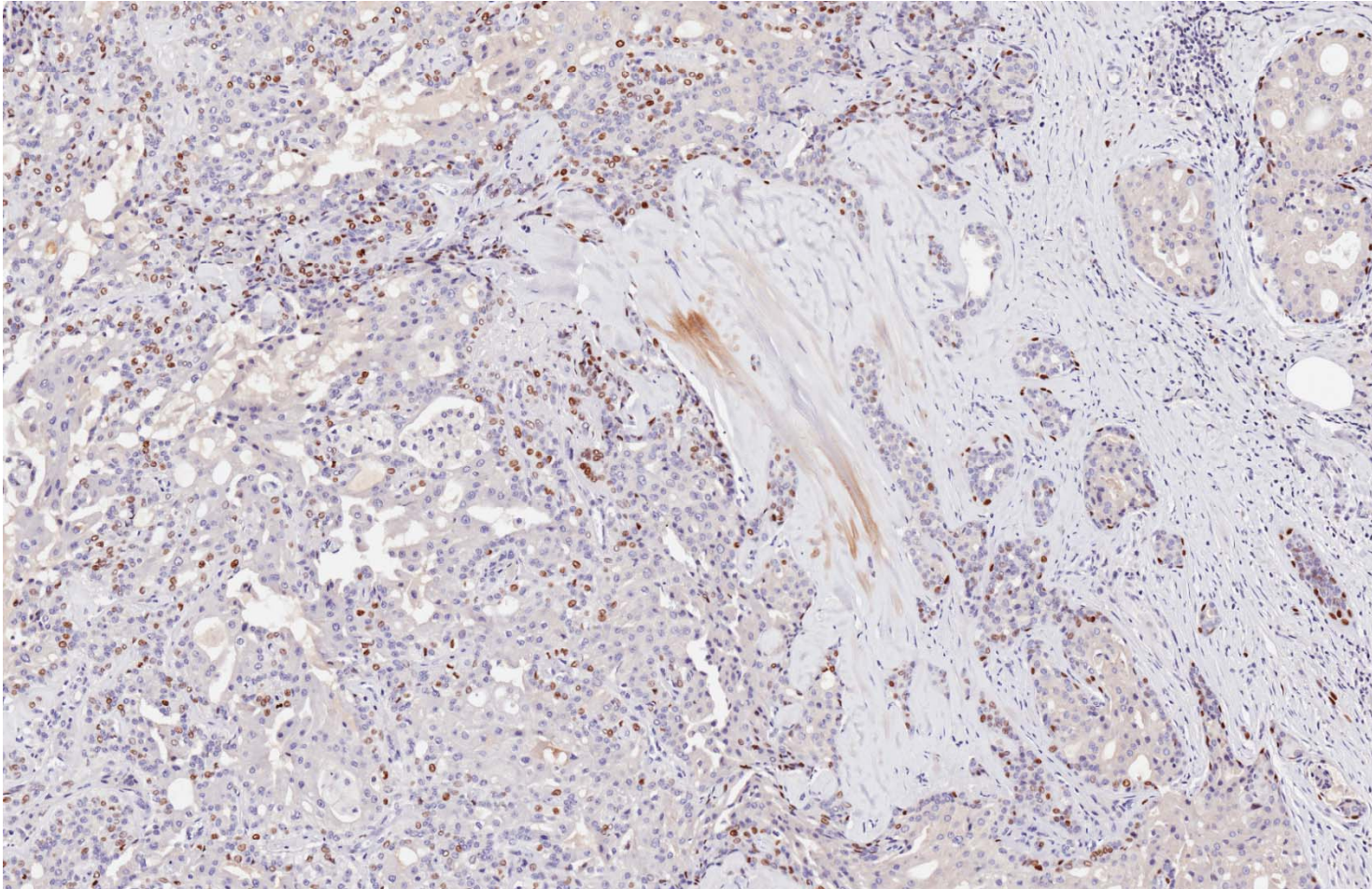
CK14



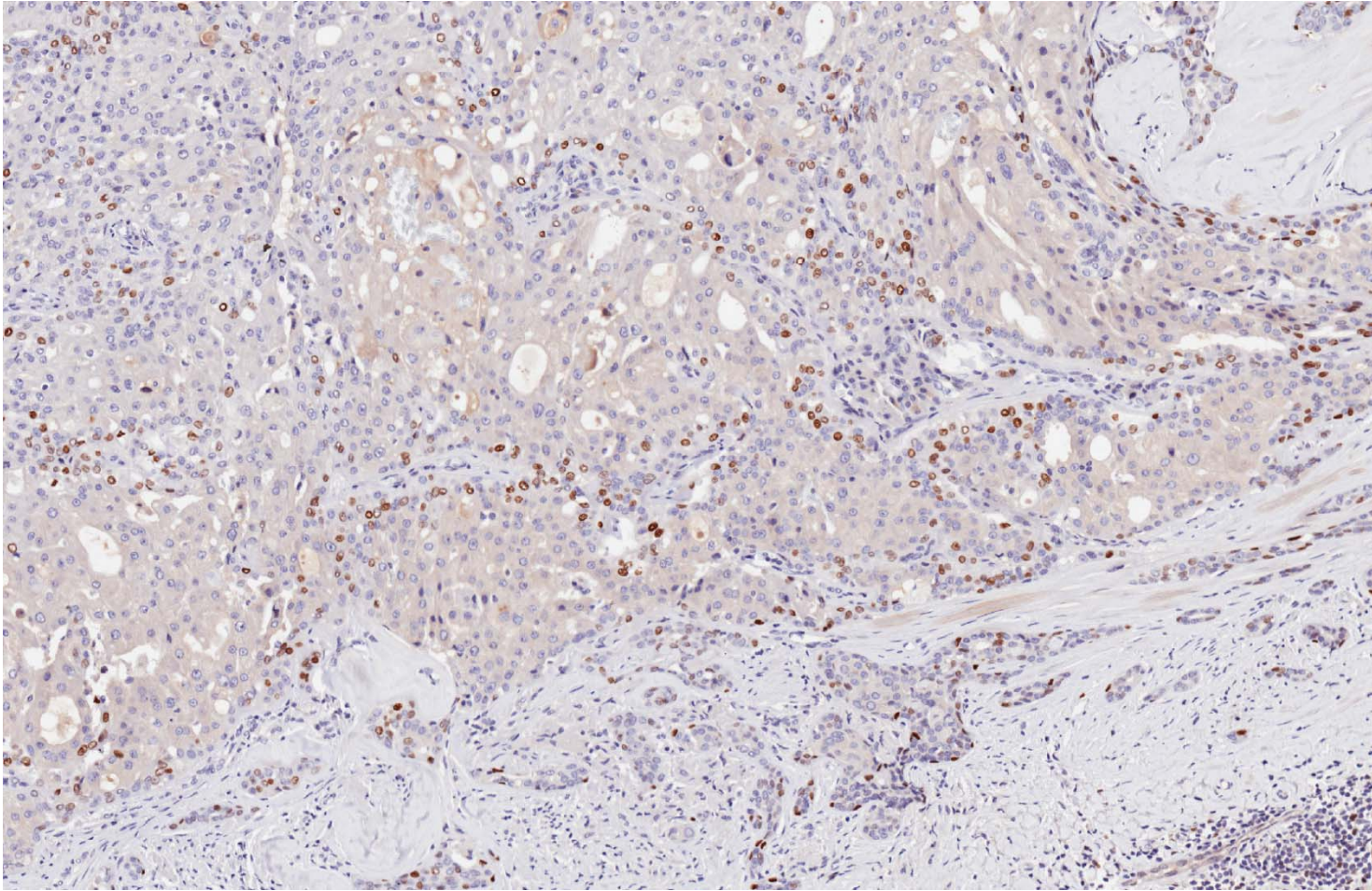
MIB1



p63



p63



- Intraductal papilloma, partially sclerosed, with an atypical apocrine proliferation/atypical apocrine hyperplasia.

Key histologic findings

- Intraductal papillary lesion, partly solidified and sclerosed, with coarse calcifications.
- Florid usual epithelial hyperplasia.
- Extensive apocrine population with architectural cribriforming in areas.
- Occasional mitoses, no necrosis.
- CK5/6 and CK14 immunohistochemistry shows good support of fibrovascular cores by myoepithelial cells
- MIB1 (Ki67, proliferation marker) at about 10% in the apocrine areas.

Apocrine lesions of the breast

- Potentially challenging group of lesions.
- Apocrine metaplasia is a frequent accompaniment of fibrocystic changes and other benign breast conditions.
- Apocrine features can also be seen in:
 - Intraductal papillary lesions.
 - Sclerosing adenosis.
 - Atypical ductal hyperplasia.
 - Ductal carcinoma in situ.
 - Invasive carcinoma.
- Apocrine metaplasia superimposed on sclerosing adenosis (apocrine adenosis) mimics invasive cancer.

Apocrine changes in papillary lesions

- Apocrine metaplasia in an intraductal papillary lesion is a feature that generally favours benignity.
- Atypical apocrine lesions:
 - Uniform criteria to separate atypical apocrine lesions from apocrine DCIS are not well established.
 - Degree of cytologic atypia, presence of mitoses and/or necrosis, extent of lesion, have been used.
 - O'Malley FP, Bane A. An update of apocrine lesions of the breast. *Histopathology* 2008; 52: 3-10.

Apocrine adenosis

- Atypical apocrine adenosis:
 - Seldman et al. Cancer 1996; 77: 2529-37.
 - 37 women with atypical apocrine adenosis and mean follow-up of 8.7 years.
 - Apocrine adenosis with enlarged nucleoli and > 3x variation in nuclear area.
 - Confers increased risk of breast cancer development in women > 60 years (relative risk of 14).
 - Risk in younger women is low.
- Atypical apocrine metaplasia in sclerosing lesions of the breast:
 - Carter & Rosen. Mod Pathol 1991; 4: 1-5.
 - 51 patients with atypical apocrine metaplasia of breast sclerosing lesions, with mean follow-up of 35 months.
 - No cancer development during follow-up period.
 - Long term clinical implication is uncertain.
 - Continued surveillance.

Role of immunohistochemistry

- Selim et al. Virchows Arch 2002; 441: 449-55.
 - 64 cases of apocrine metaplasia and 18 cases of apocrine adenosis (apocrine change within sclerosing adenosis)
 - cerbB2, p53, bcl2, Bax, c-myc, Ki67 IHC.
 - cerbB2 (55.6% of apocrine adenosis, 10% of apocrine metaplasia).
 - p53 (27.8% of apocrine adenosis, 1.6% of apocrine metaplasia).
 - All negative for bcl2.
 - Bax (33.3% of apocrine adenosis, all positive in apocrine metaplasia).
 - All positive for c-myc.
 - Ki67 (mean 3.6% in apocrine adenosis, 1.3% in apocrine metaplasia).
 - Apocrine adenosis shows abnormal oncoprotein and apoptosis-related protein expression and a higher proliferation rate.

Learning points

- Apocrine proliferation within an intraductal papillary lesion.
- Controversies surrounding the definition of atypical apocrine hyperplasia and apocrine DCIS.
- Role of immunohistochemistry – currently relatively limited.