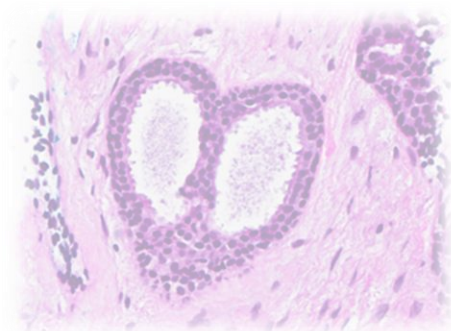
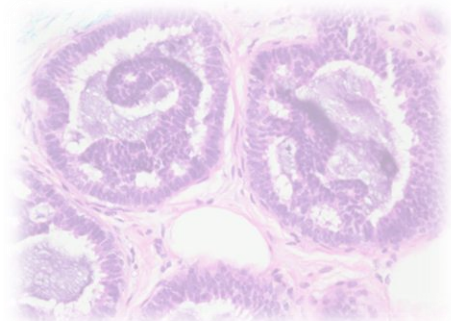
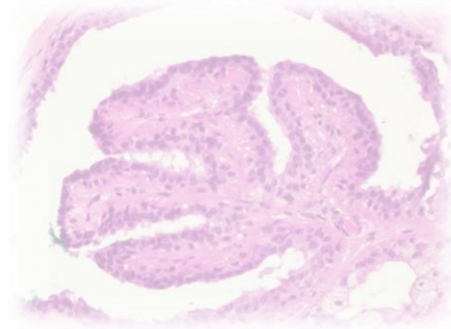
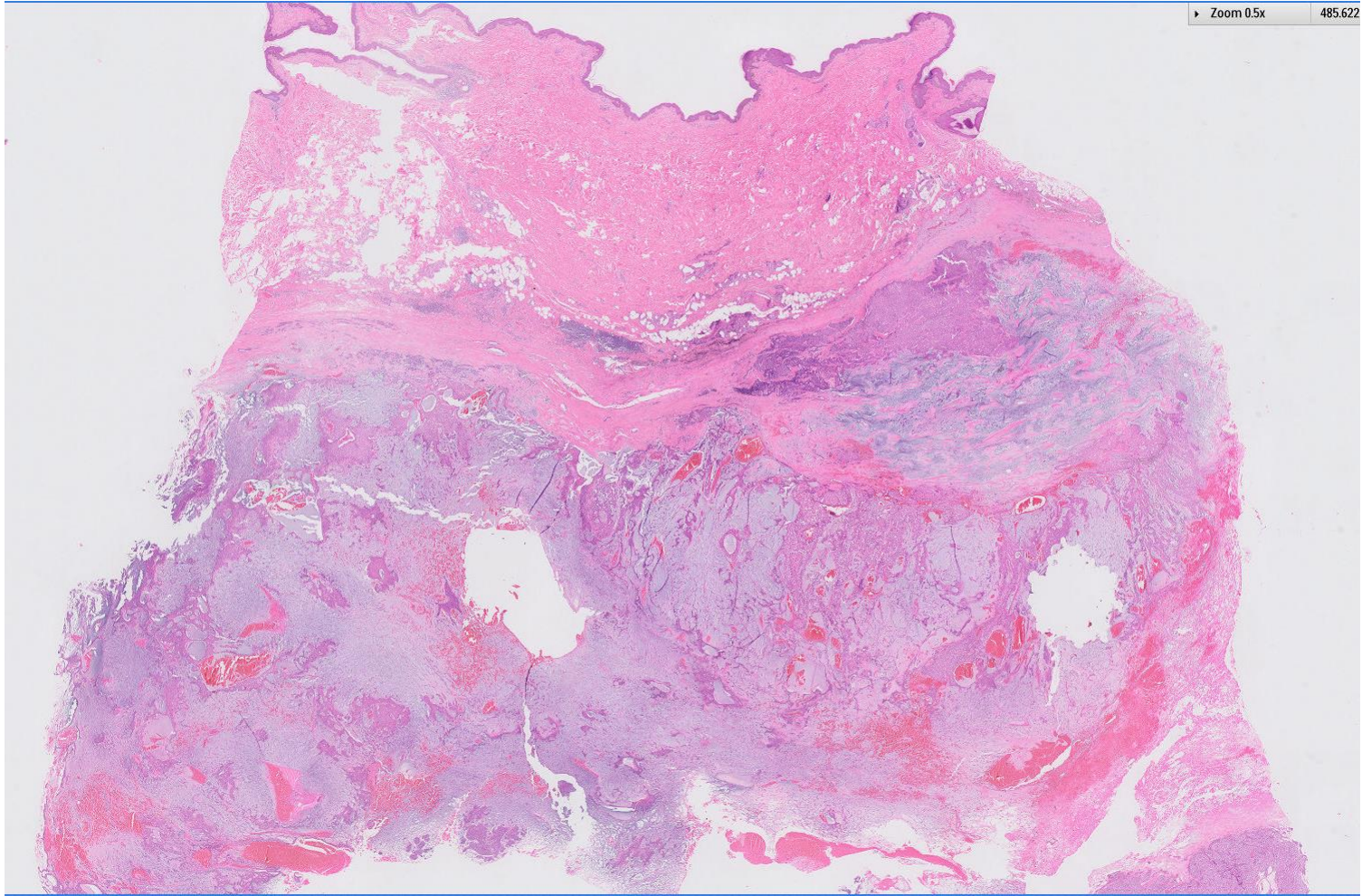


Case 18

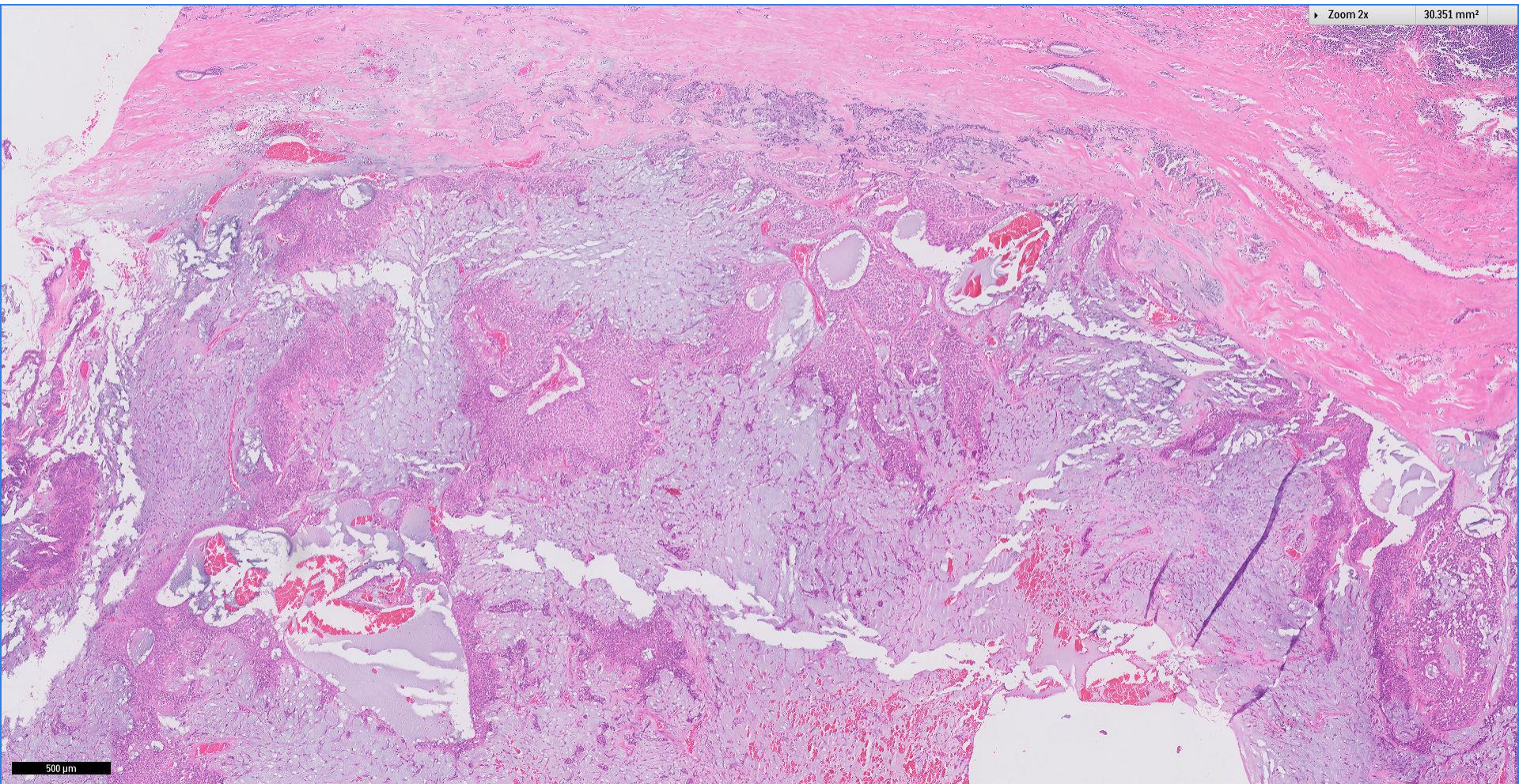
66 year old Chinese female.
Left breast lump, excision biopsy.
Core biopsy diagnosis was
indeterminate.



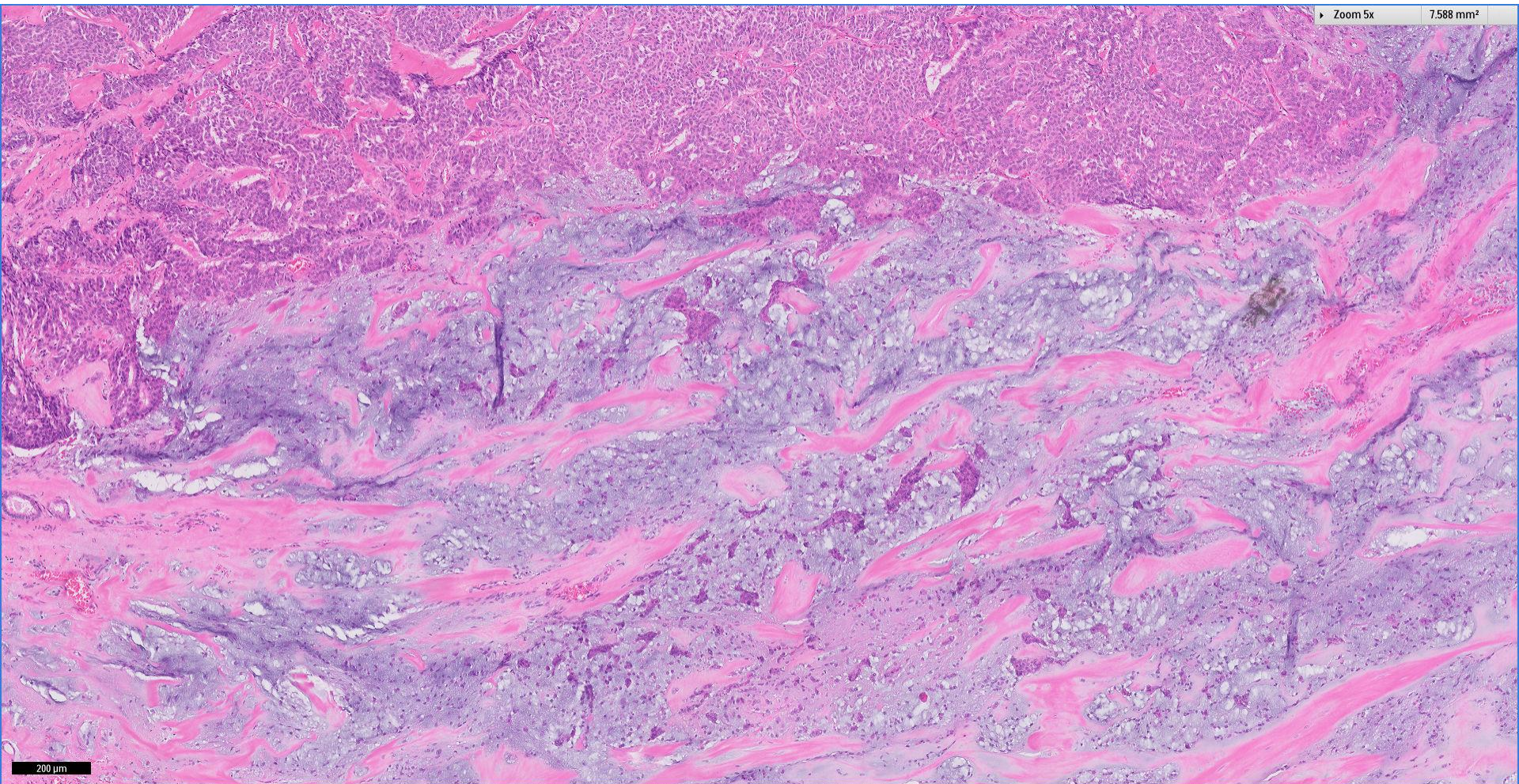


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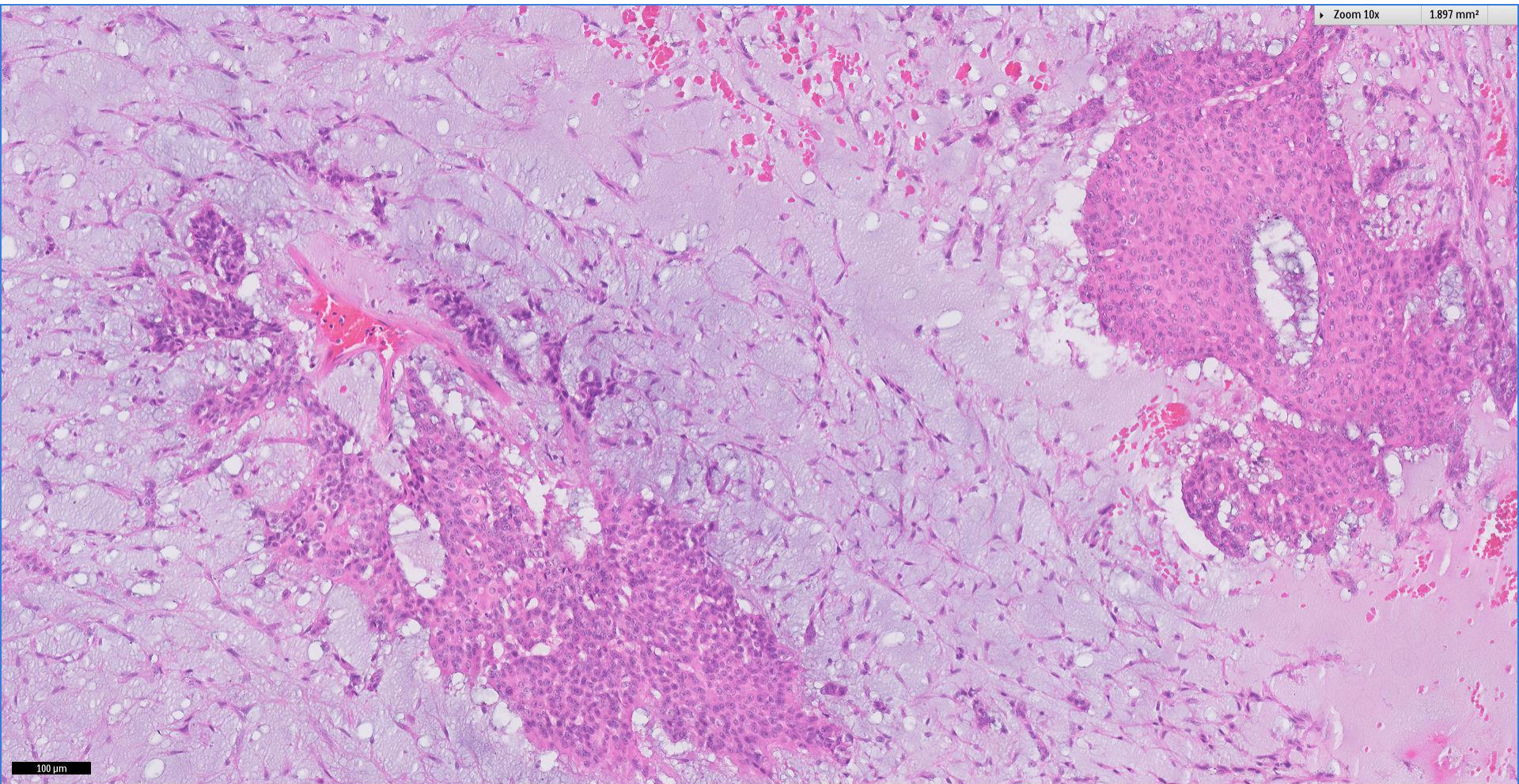




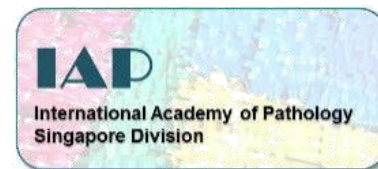
Zoom 5x 7.588 mm²

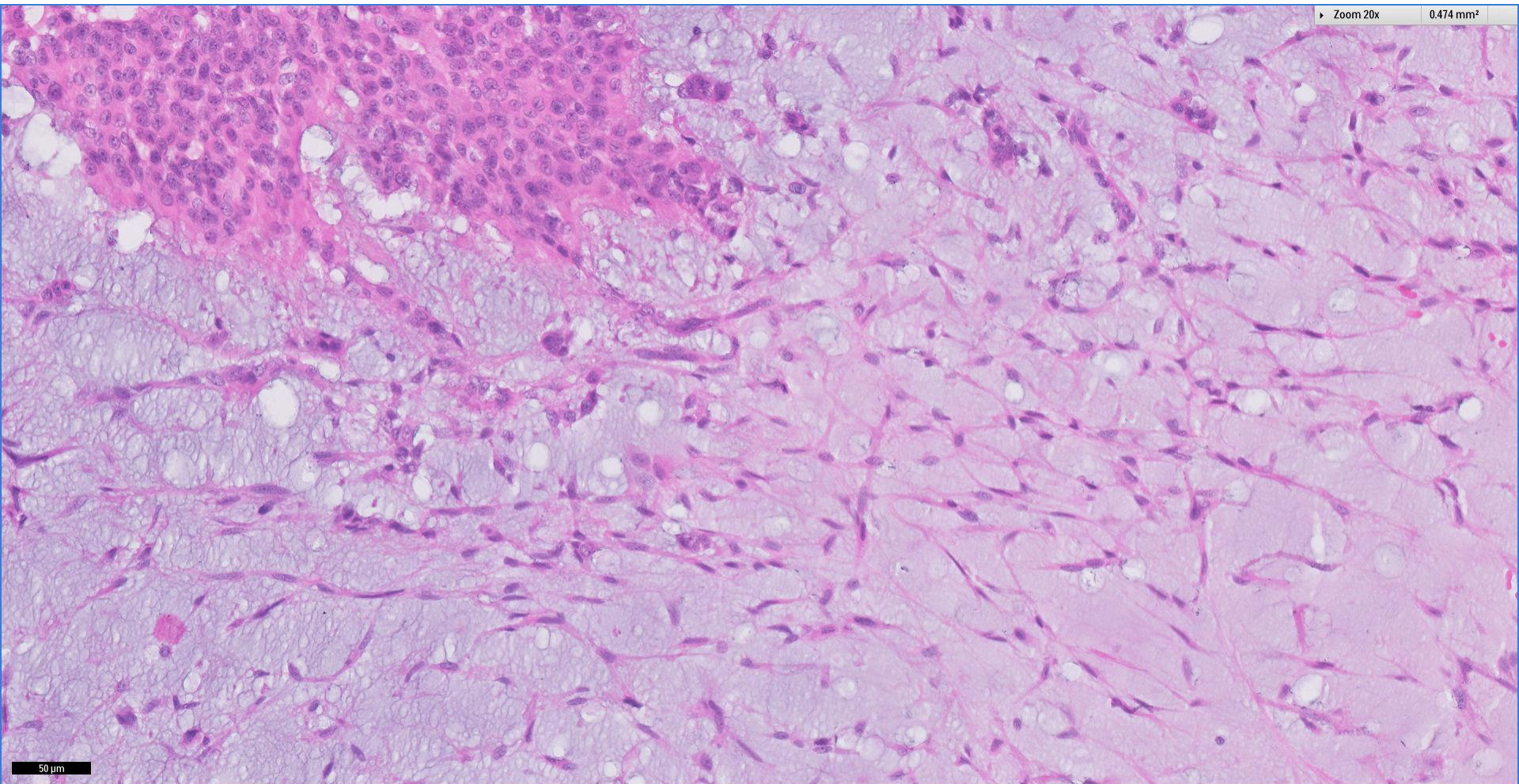


200 μm



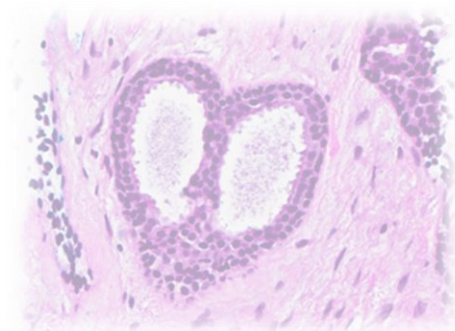
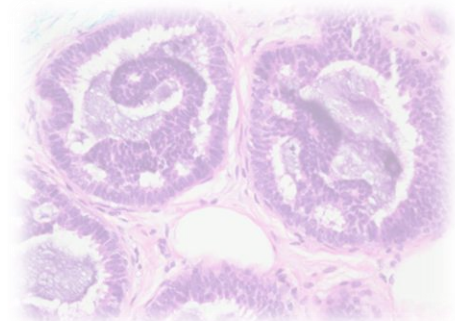
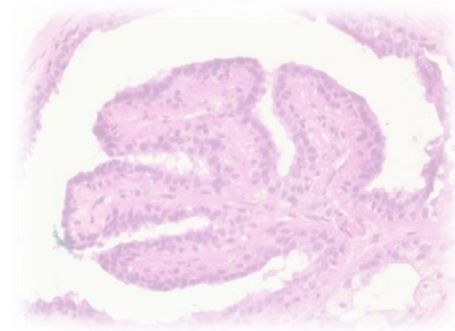
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Diagnosis, case 18

- Left breast lump, excision biopsy:
Consistent with pleomorphic adenoma.



Pleomorphic adenoma ~ definition

- Benign tumour with variable cytomorphological and architectural manifestations of epithelial and myoepithelial components set within a chondromyxoid stroma.

WHO 2019

Pleomorphic adenoma

- **Localisation** ~
 - Usually retroareolar.
- **Clinical features** ~
 - Nodule, affecting adult women.
 - Rare cases affect male patients.
 - On mammography and ultrasound examination, it appears as a roundish lesion with well-defined borders, simulating a fibroadenoma.
 - Tumours with intraductal growth can present as a cystic lesion.
 - Radiological diagnosis is sometimes complicated by the presence of microcalcifications, which can prompt suspicion for malignancy.

Pleomorphic adenoma

- **Pathogenesis** ~
 - PA arising in the salivary glands shows rearrangements on *PLAG1* and *HMGA2*.
 - No data are currently available on molecular alterations in breast PA.
- **Macroscopic appearance** ~
 - Solid nodule, hard in consistency and with well-defined margins.
 - Size is usually 1–2 cm.
 - Longstanding nodules can reach larger sizes.

Pleomorphic adenoma

- **Histopathology ~**

- Neoplastic proliferation of epithelial and myoepithelial cells, organized in glandular structures and strands immersed in a myxochondroid stroma.
- Single stellate cells are present.
- Neoplastic glands are lined by an inner layer of epithelial cells and an outer layer of myoepithelial cells.
- The strands of polygonal, oval, and stellate cells are mainly composed of myoepithelial cells.
- No cellular atypia, necrosis, or atypical mitotic figures are present.
- The stroma is usually myxochondroid, but cartilaginous or osseous metaplasia can be observed.
- PA can present as an intraductal growth, similar to ductal adenoma.
- Some cases show a polypoid intraductal growth, resulting in a multinodular structure.
- Some cases are associated with typical features of ductal adenoma, suggesting a relationship between the two lesions.

Pleomorphic adenoma

- **Immunohistochemistry** ~
 - Myoepithelial markers – SMA, calponin, p63, CK14 positive in outer cell layer.
 - Luminal markers – low molecular weight cytokeratin and EMA label the epithelial component.
- **Differential diagnosis** ~
 - Tumours with mucinous and myxoid stroma (mucinous carcinoma, matrix producing metaplastic carcinoma); adenomyoepithelioma.
 - PA lacks cellular atypia, atypical mitoses and necrosis, with a well-organised biphasic pattern ~ a thin and continuous outer layer of myoepithelial cells and an inner layer of regular epithelial cells; in contrast to metaplastic carcinoma.
 - AME shows prominent and often multistratified myoepithelial cell layer, with relatively frequent nuclear atypia and mitoses.

Pleomorphic adenoma

- **Cytology** ~
 - FNA may be difficult to interpret, if the diagnosis is not considered.
 - Highly cellular smears composed of cell aggregates and chondromyxoid material.
 - Epithelial cells have round plump cytoplasm and are arranged in glandular clusters.
 - Myoepithelial cells are elongated or plasmacytoid.
 - Metachromatic chondromyxoid material can be seen.
 - Absence of atypia, mitoses and necrosis.
- **Essential criteria** ~
 - Well defined margins.
 - Glands lined by a double layer immersed in a myxochondroid background.
- **Prognosis and prediction** ~
 - Benign.
 - Recurrences can occur in cases with extensive polypoid intraductal growth that are not completely excised at surgery.
 - Rare reports of malignant transformation.

Thank You