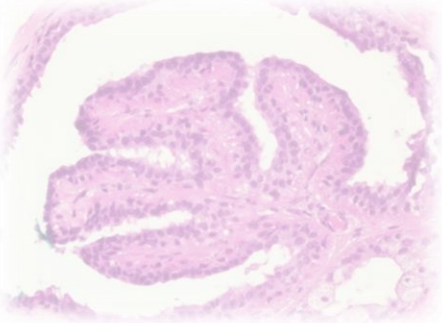
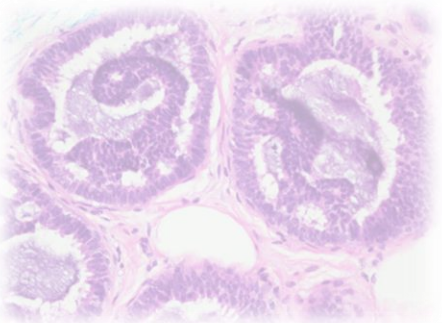
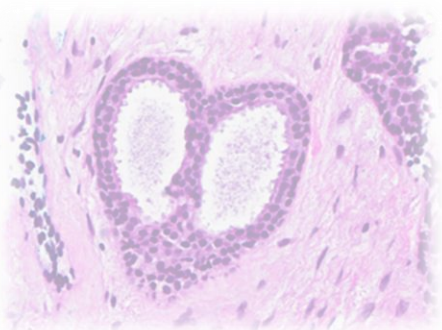
Breast Pathology Course 2019

Case 27

61 year old Chinese female.
Wedge biopsy, right breast tumour.
Previous core biopsies of the right breast tumour and right axillary lymph node were diagnosed as ‘necrotic tumour, consistent with carcinoma’ and ‘metastatic carcinoma’ respectively.

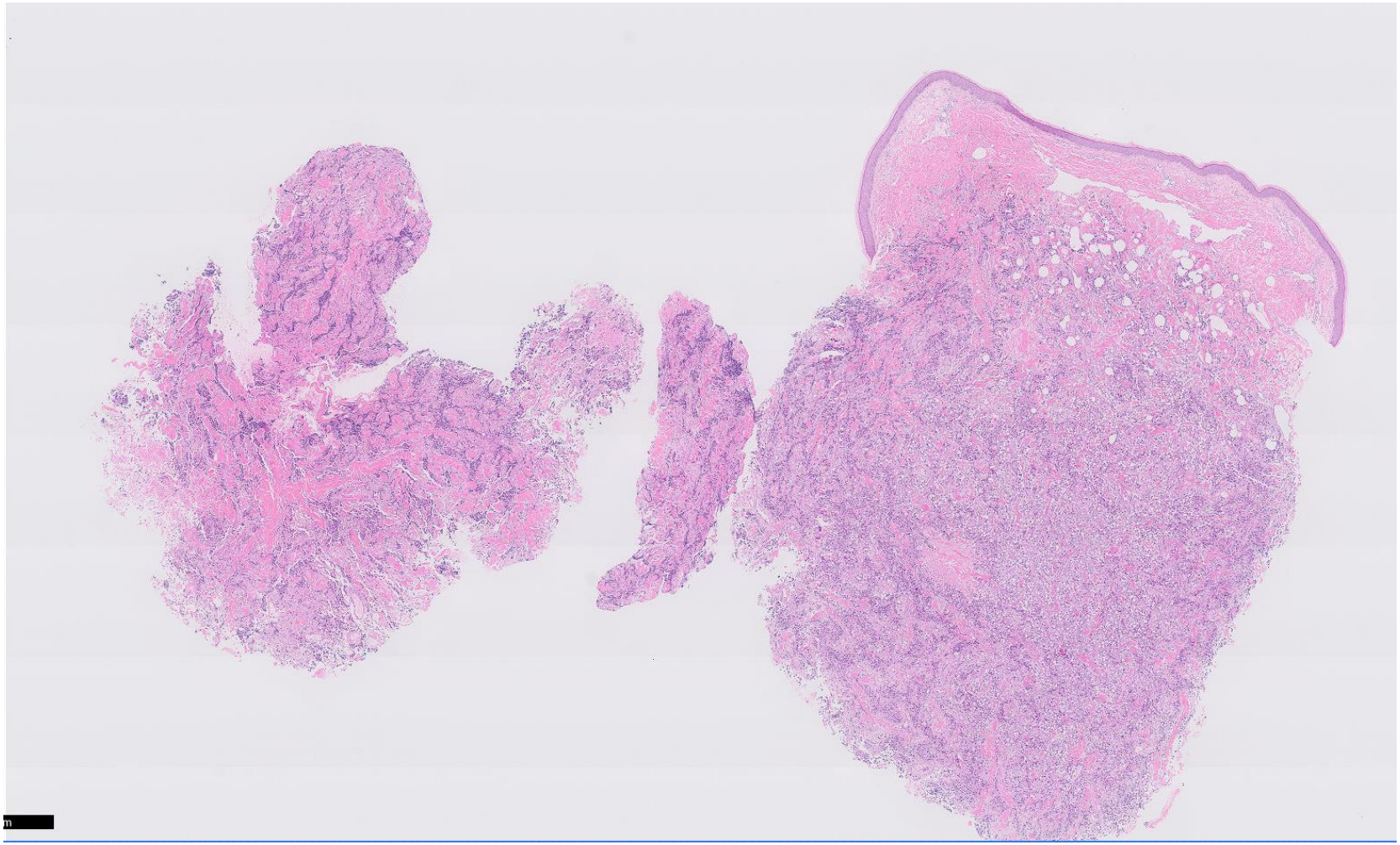


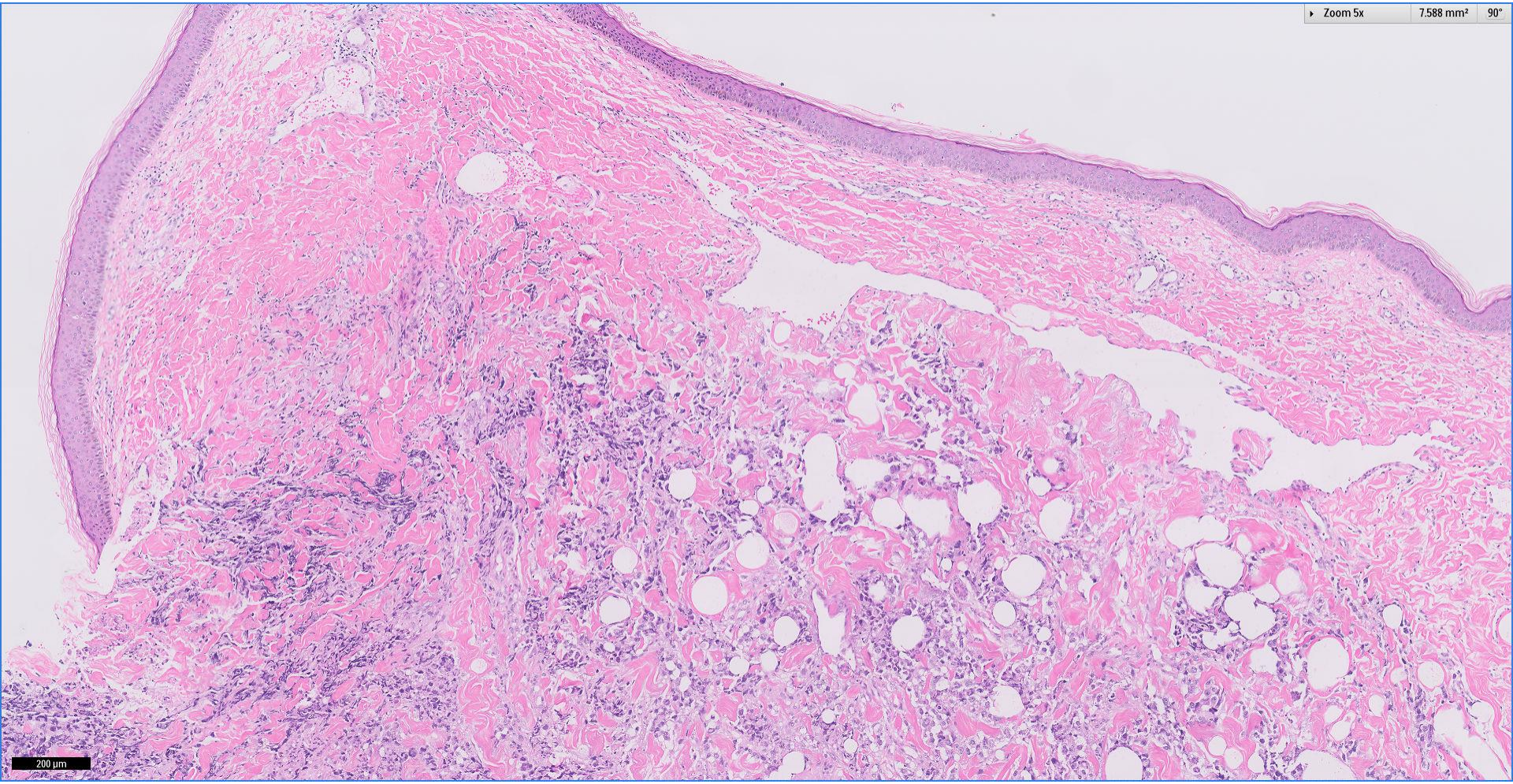



Division of Pathology
Singapore General Hospital

SingHealth DukeNUS
ACADEMIC MEDICAL CENTRE
PATHOLOGY

IAP
International Academy of Pathology
Singapore Division

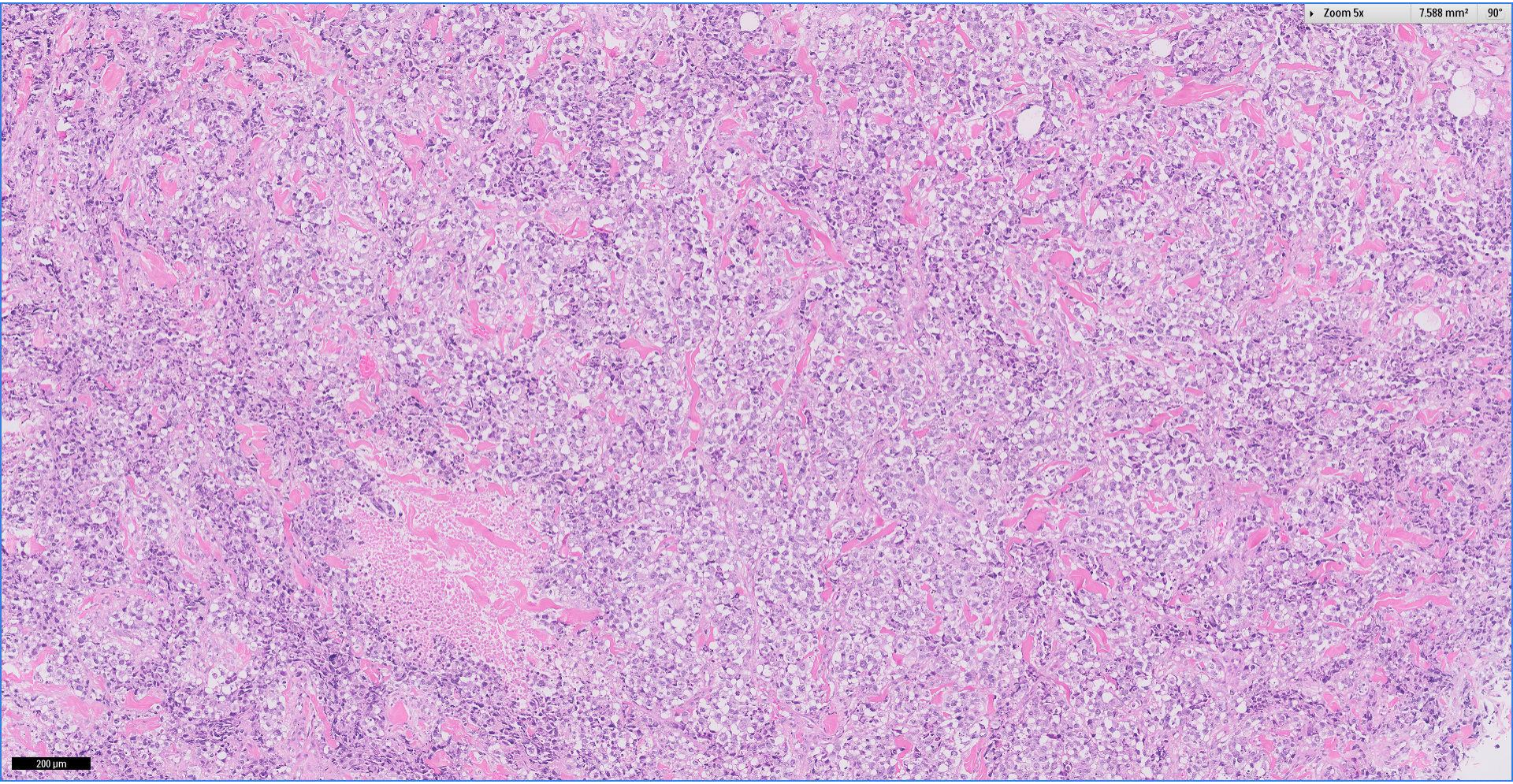




Division of Pathology
Singapore General Hospital

SingHealth DukeNUS
ACADEMIC MEDICAL CENTRE
PATHOLOGY

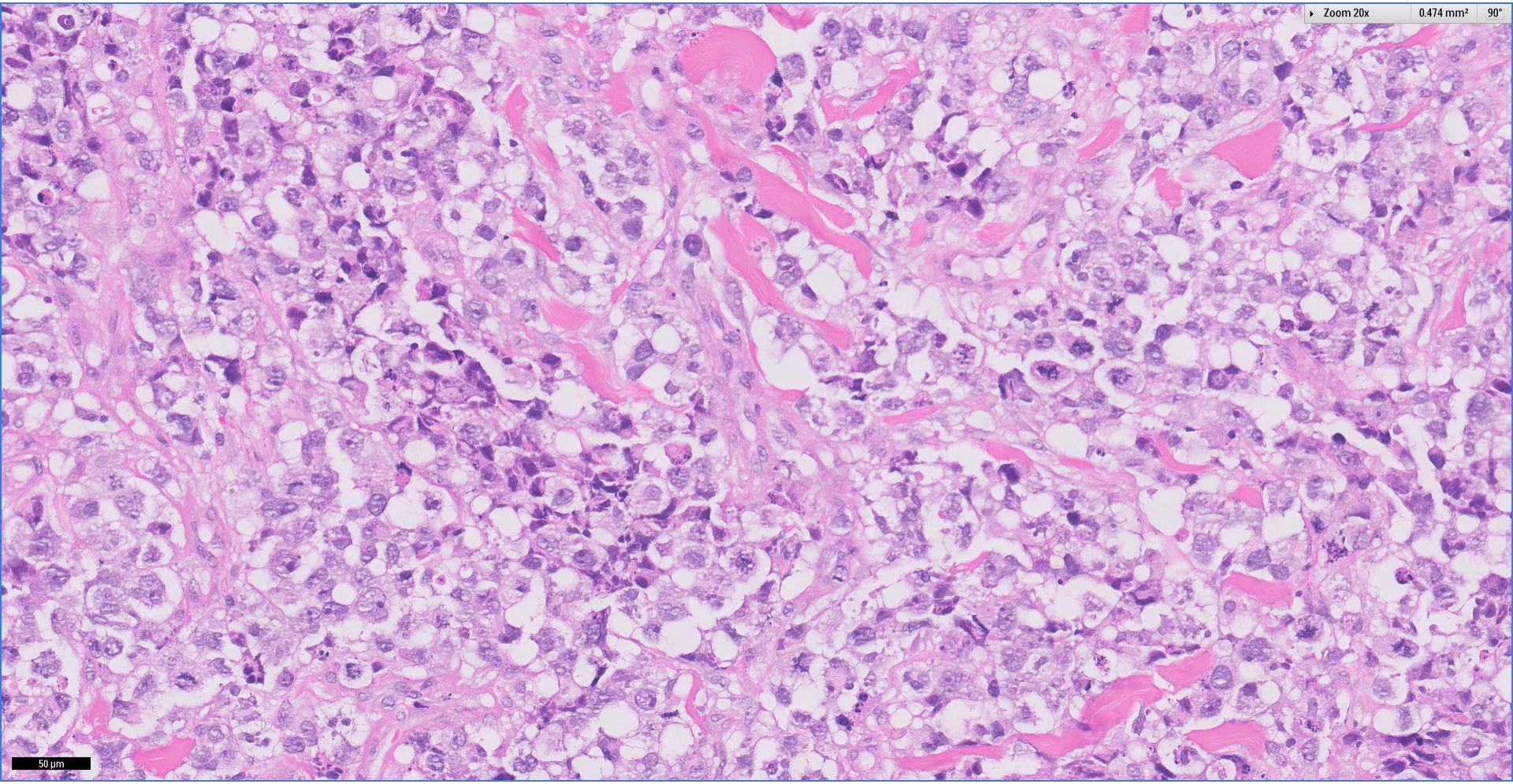
IAP
International Academy of Pathology
Singapore Division



Division of Pathology
Singapore General Hospital

SingHealth DukeNUS
ACADEMIC MEDICAL CENTRE
PATHOLOGY

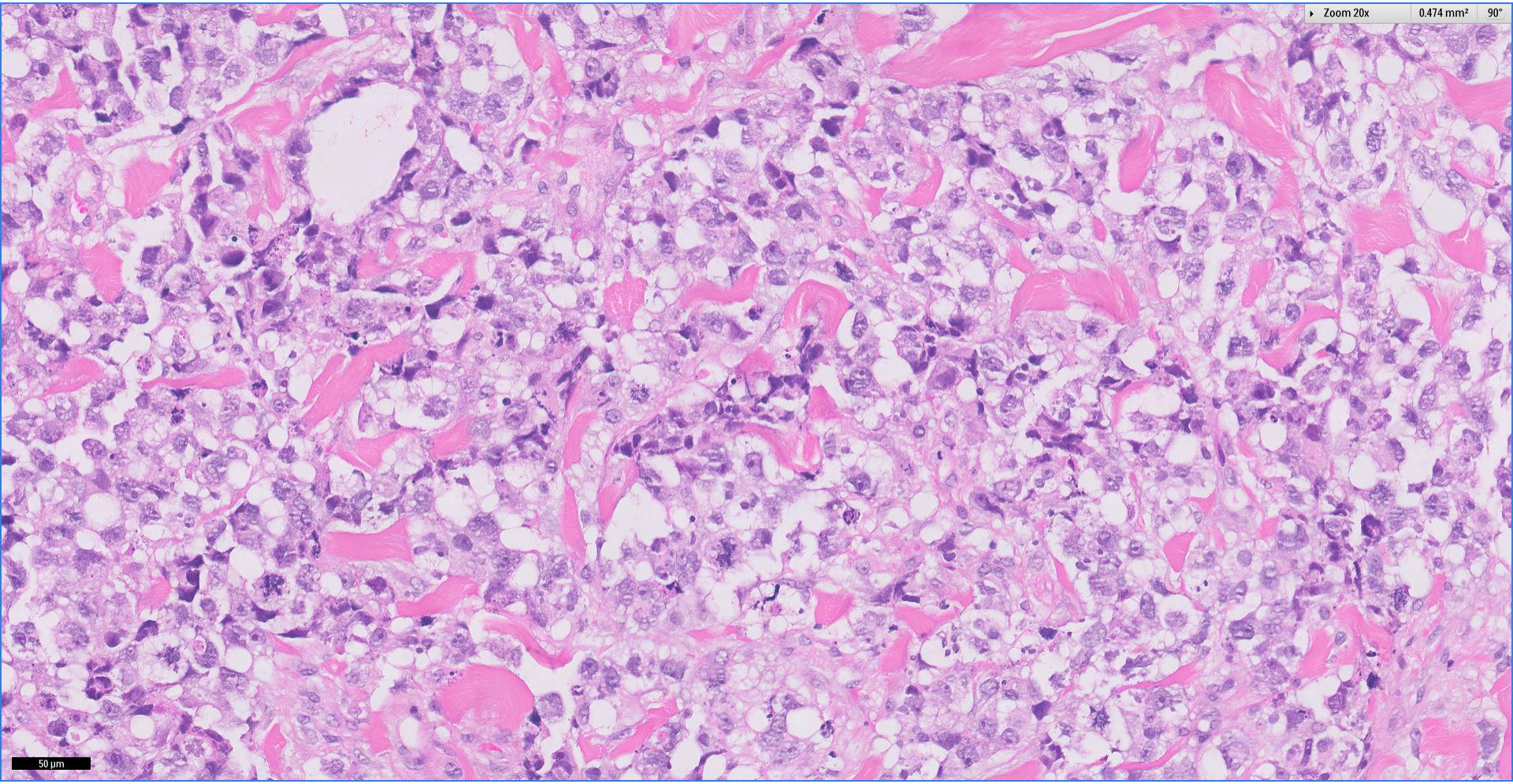
IAP
International Academy of Pathology
Singapore Division



Division of Pathology
Singapore General Hospital

SingHealth DukeNUS
ACADEMIC MEDICAL CENTRE
PATHOLOGY

IAP
International Academy of Pathology
Singapore Division



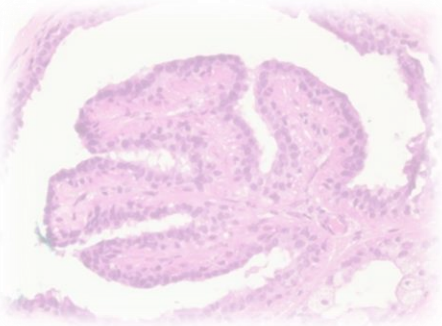
Division of Pathology
Singapore General Hospital

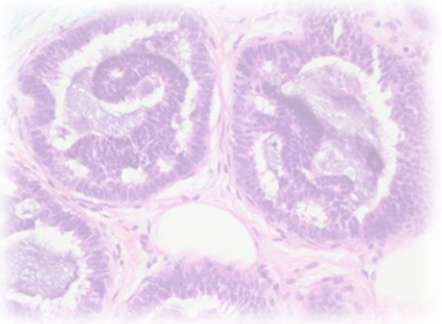
SingHealth DukeNUS
ACADEMIC MEDICAL CENTRE
PATHOLOGY

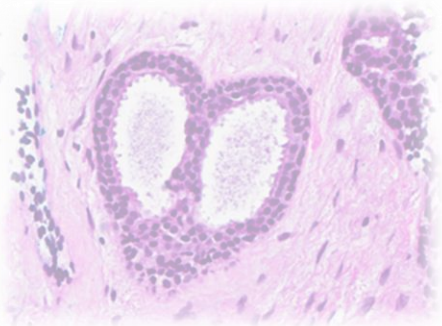
IAP
International Academy of Pathology
Singapore Division

Breast Pathology Course 2019

Additional pictures





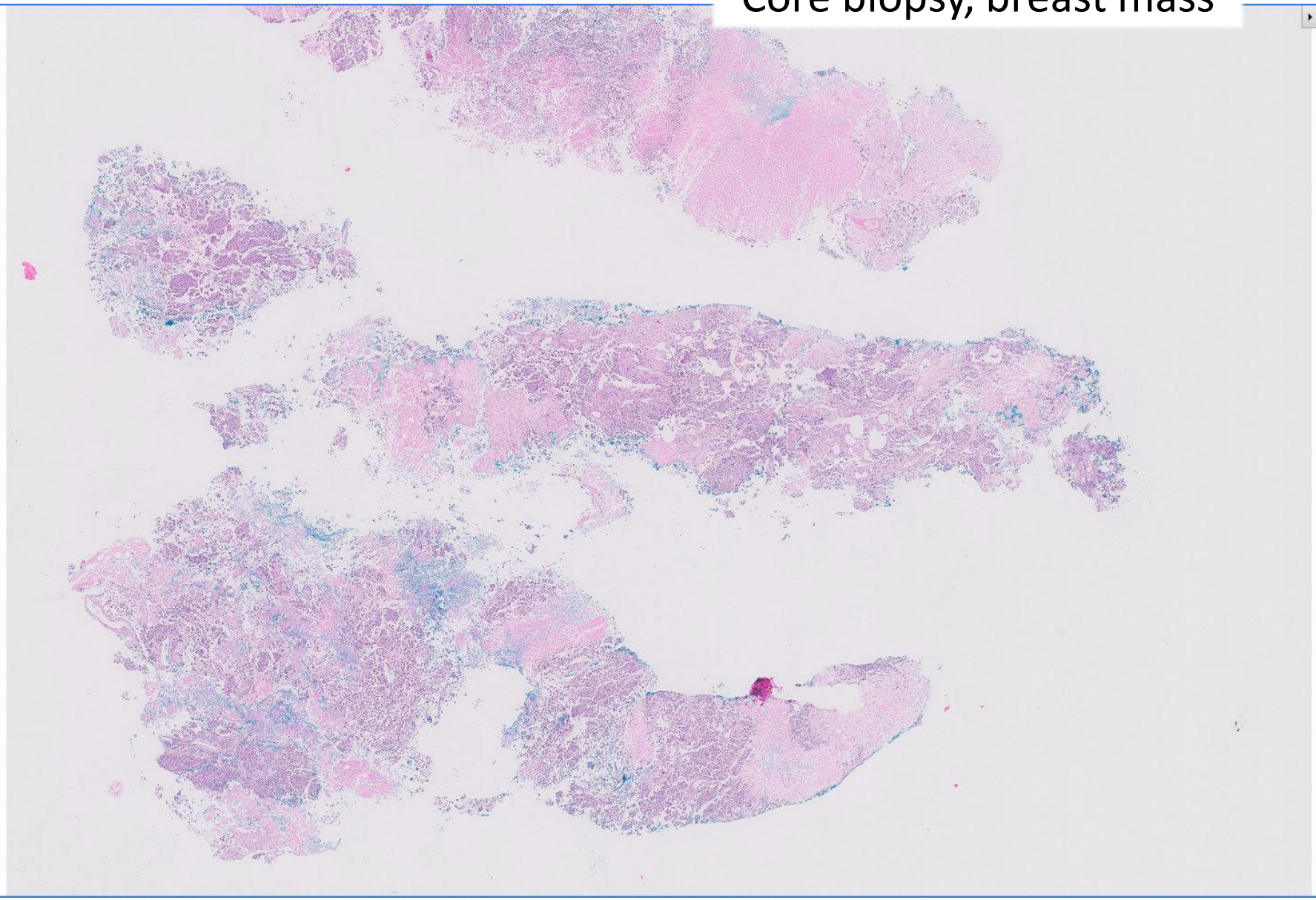


Division of Pathology
Singapore General Hospital

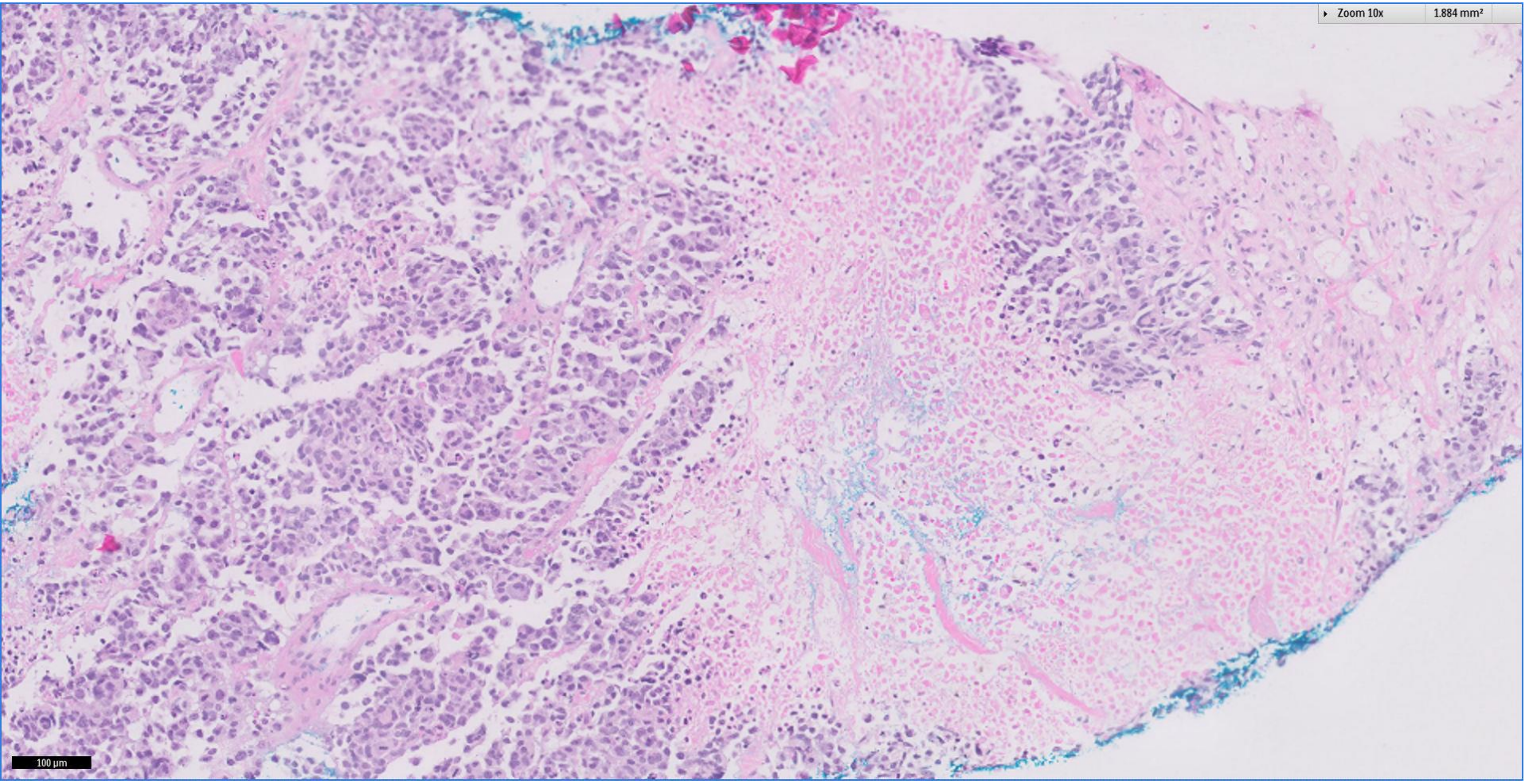
SingHealth DukeNUS ACADEMIC MEDICAL CENTRE
PATHOLOGY

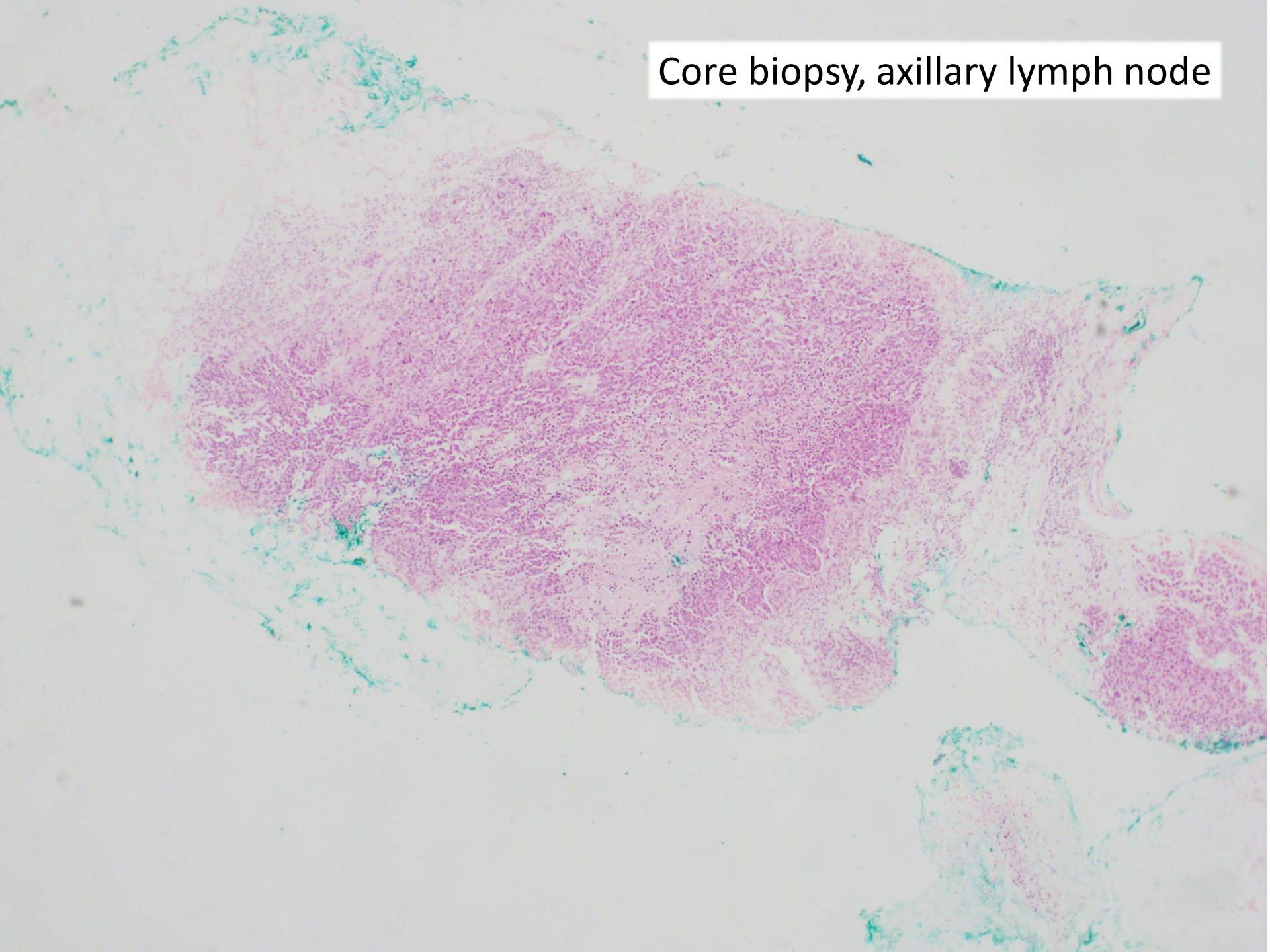
IAP
International Academy of Pathology
Singapore Division

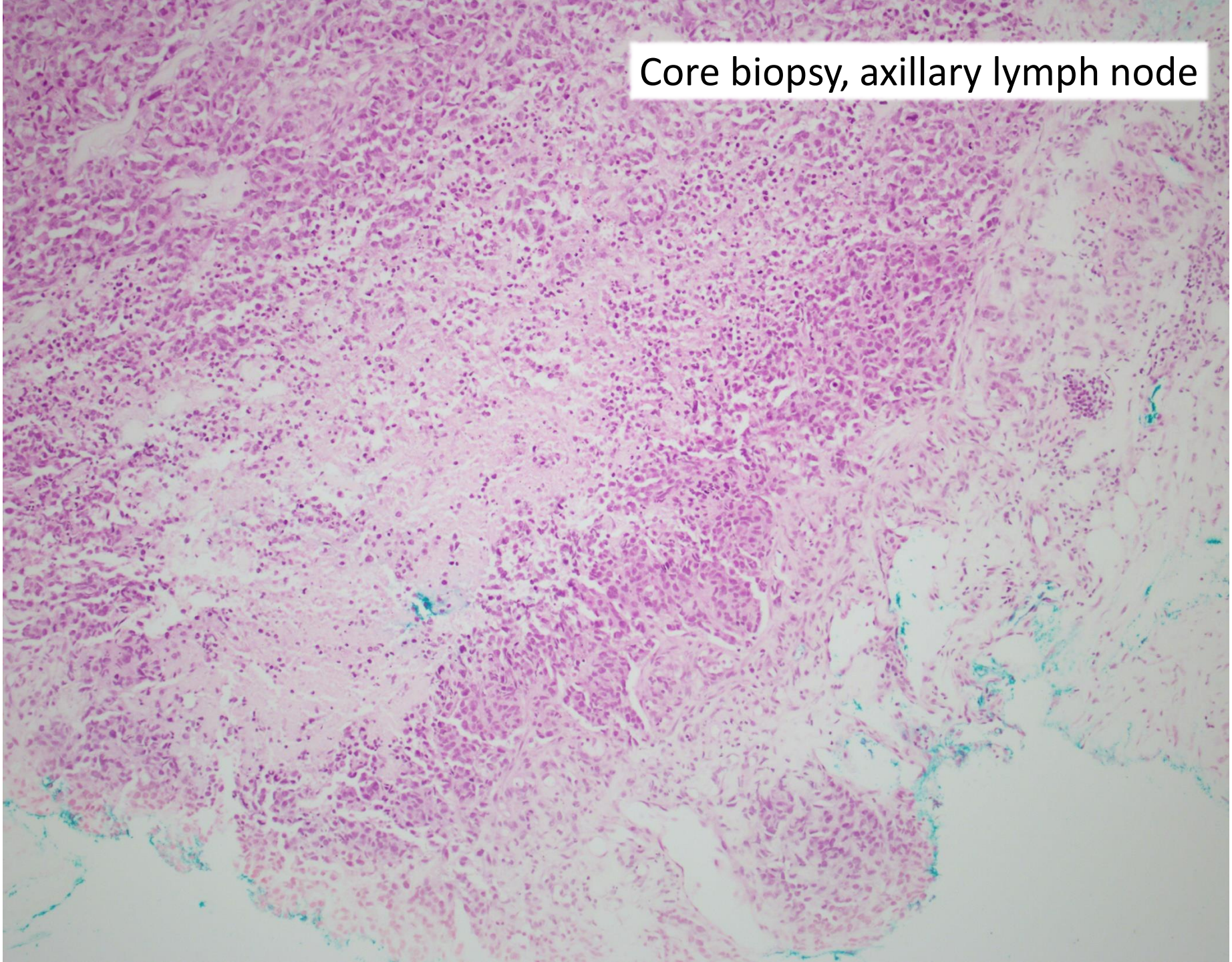
Core biopsy, breast mass



Core biopsy, breast mass



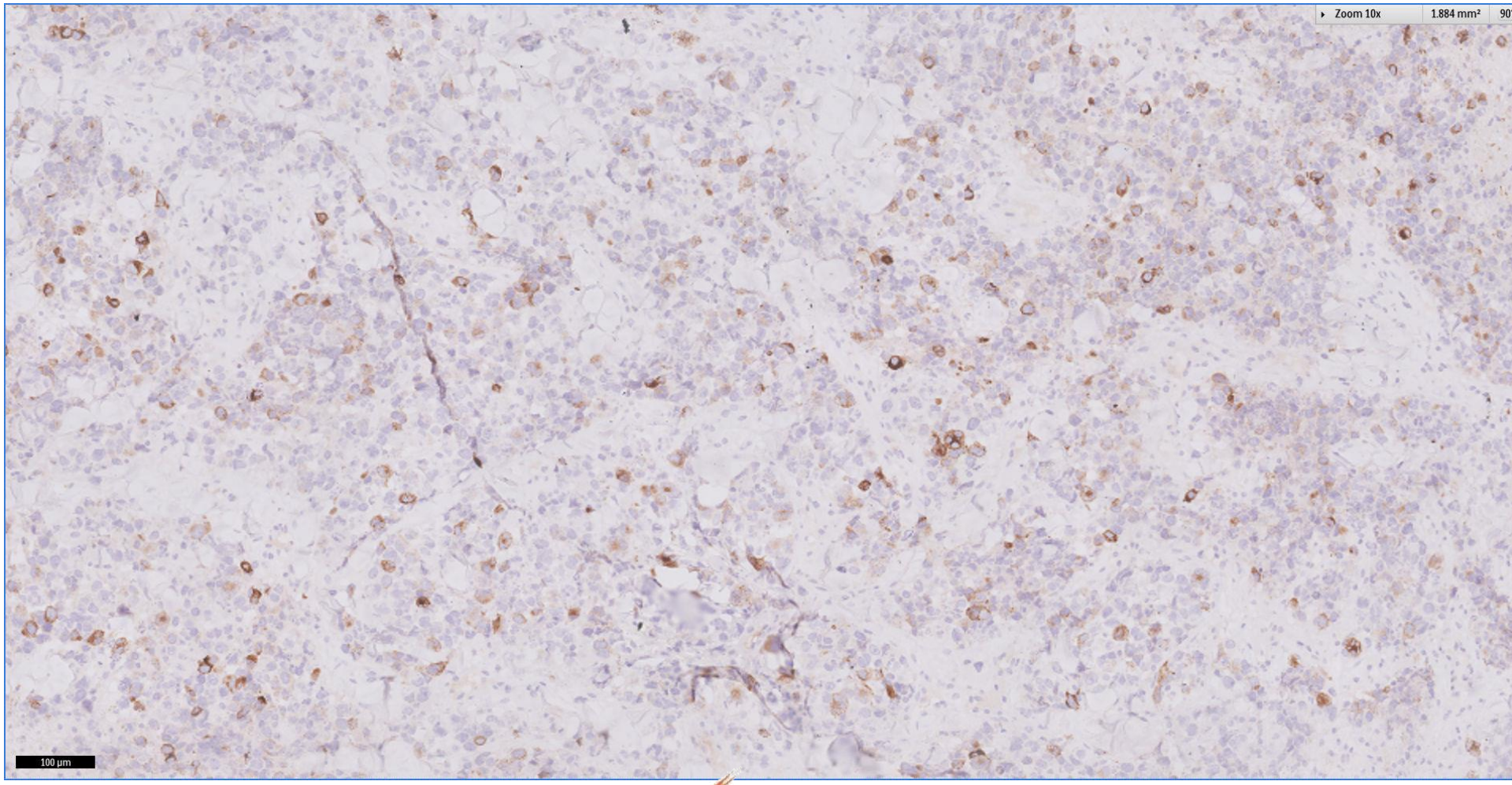

Core biopsy, axillary lymph node


Core biopsy, axillary lymph node

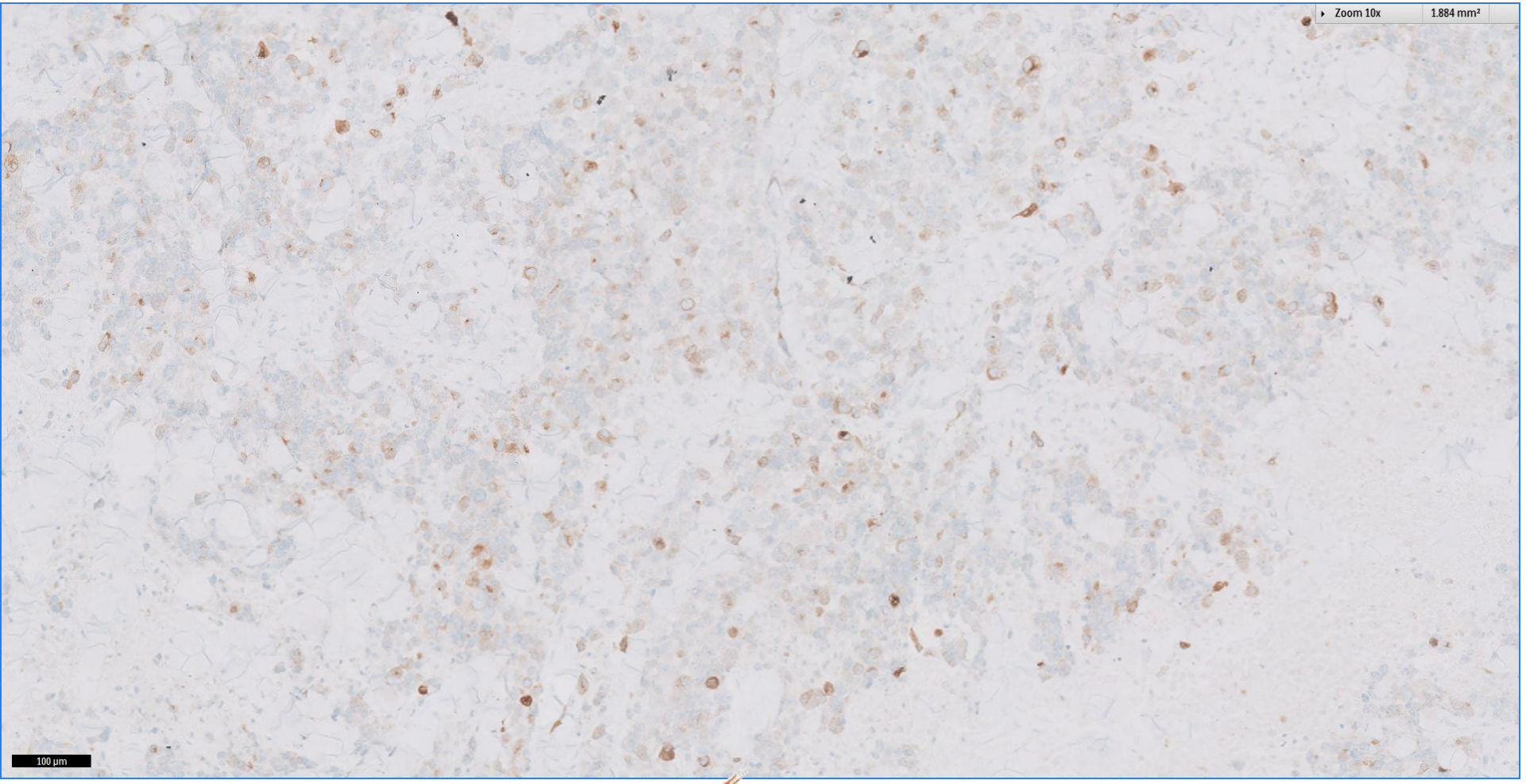
Immunohistochemistry (core biopsy)

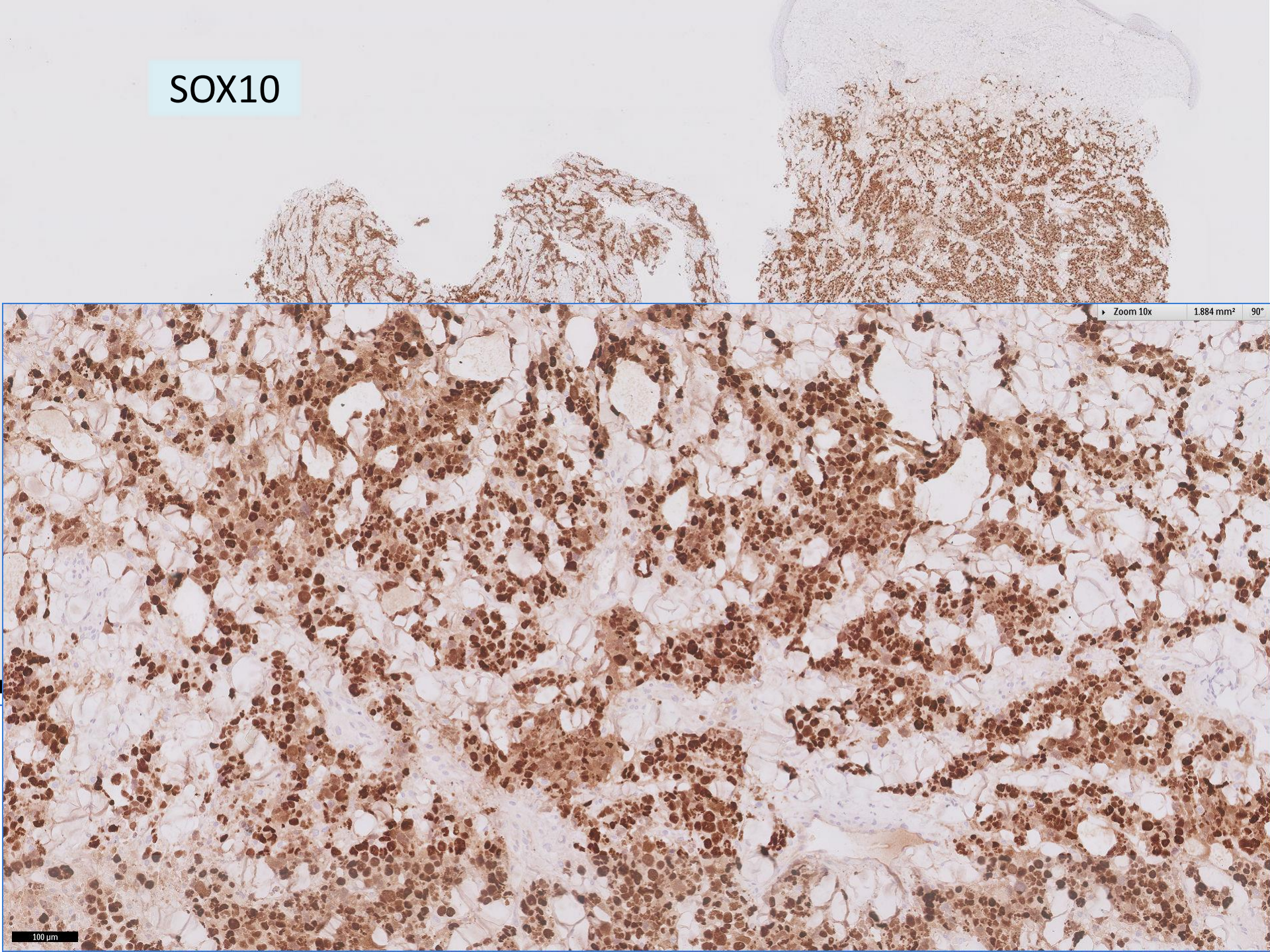
- CK7, MNF116, AE1/3, CK14, Cam5.2, BerEP4, EMA negative.
- LCA, CD3, CD20, CD138, CD163 negative.
- MUM1 patchy weak nuclear staining.
- GATA3 patchy focal weak nuclear reactivity.
- Synaptophysin negative.
- TFE3 focal nuclear staining.
- SMMS, calponin negative.
- SMA rare detached tumour cells.
- Desmin negative.
- Vimentin, SOX10 diffusely positive.
- S100 ~ weak decoration of some tumour cells with focal stronger staining of tumour cells in the metastasis.
- HMB45 stains a few detached tumour cells.
- Melan A highlights many tumour cells.

HMB45



MelanA

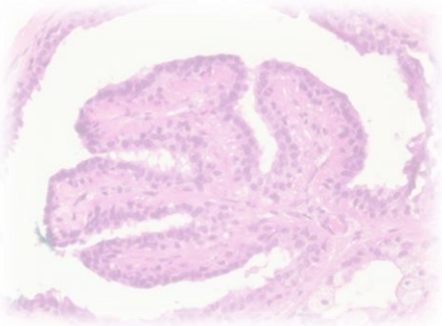


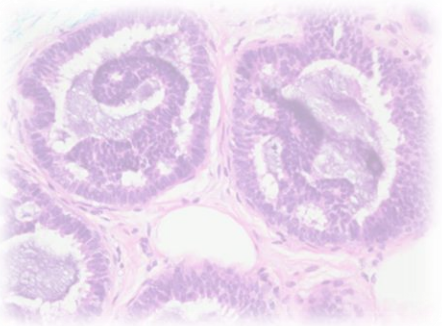

SOX10
Zoom 10x
1.884 mm²
90°
100 µm

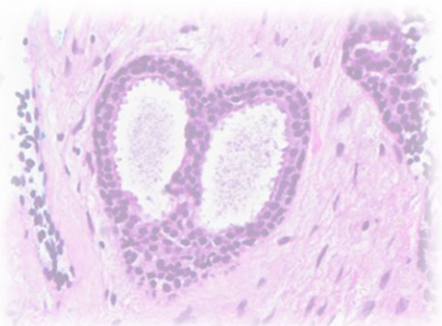
Diagnosis, case 27

- Wedge biopsy, right breast tumour:

  Poorly differentiated malignant tumour, with immunophenotypic features suggesting possible melanoma.

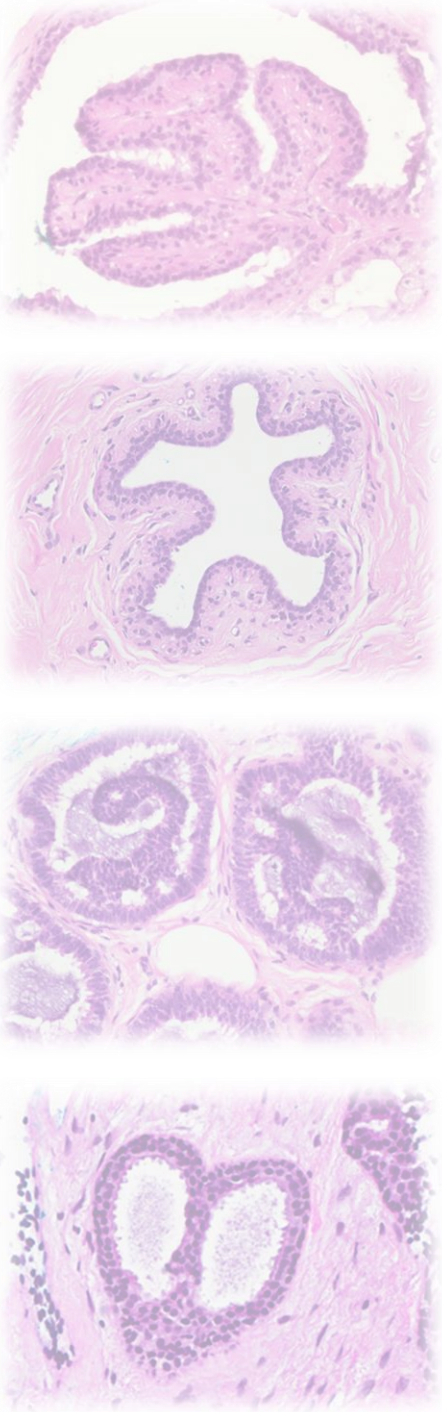






Breast Pathology Course 2019

- BRAF (exon 15) and KIT (exons 9, 11, 13 and 17) mutational analyses NOT DETECTED.



- Most melanotic tumours of the breast represent metastases from melanomas originating in extramammary sites.
- Primary melanomas may arise anywhere in the skin of the breast, but an origin in the nipple–areola complex is extremely rare.
- The differential diagnosis of melanoma arising in the nipple–areola region must include Paget disease, the cells of which may occasionally contain melanin pigment.

Invasive breast carcinoma with melanotic pattern

WHO 2019

- A few case reports have described exceptional tumours of the mammary parenchyma that appear to represent combinations of ductal carcinoma and melanoma, and in some of these cases there appeared to be a transition from one cell type to the other.
- A genetic analysis of one such case showed loss of heterozygosity at the same chromosomal loci in all the components of the tumour, suggesting an origin from the same neoplastic clone.
- The mere presence of melanin in breast cancer cells should not be construed as evidence of melanocytic differentiation, because pigmentation of carcinoma cells with melanin can occur when breast cancers invade the skin and involve the dermoepidermal junction.
- In one study, focal expression of melan-A was found in 18% of breast cancers.
- The presence and extent of melan-A expression showed a statistically significant association with a reduction in tumour cell differentiation but not with tumour type, size, lymph node metastasis, hormone receptor status, or HER2 expression.
- The expression of melanocytic markers in breast tissue also appears to be related to lineage infidelity.
- In addition, care must be taken to distinguish tumours showing melanocytic differentiation from breast carcinomas with prominent cytoplasmic deposition of lipofuscin.

Breast Pathology Course 2019

Thank You

Division of Pathology
Singapore General Hospital

SingHealth DukeNUS
ACADEMIC MEDICAL CENTRE
PATHOLOGY

IAP
International Academy of Pathology
Singapore Division