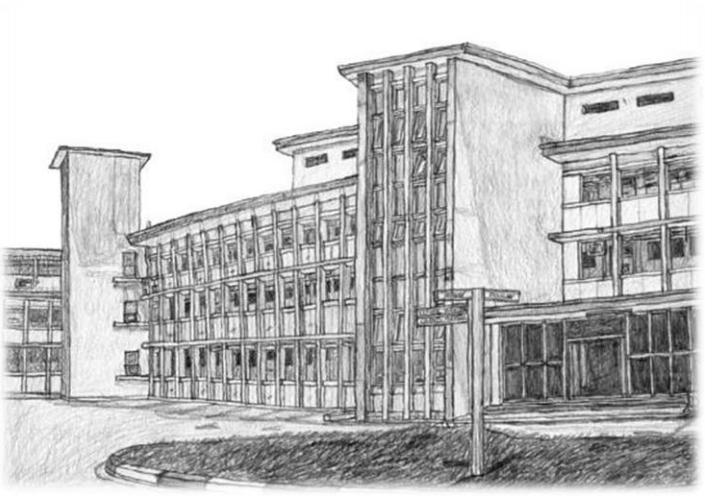
Breast Pathology Course 2018

Case 30

40 year old female.

Right breast 10 o'clock mass, excised.



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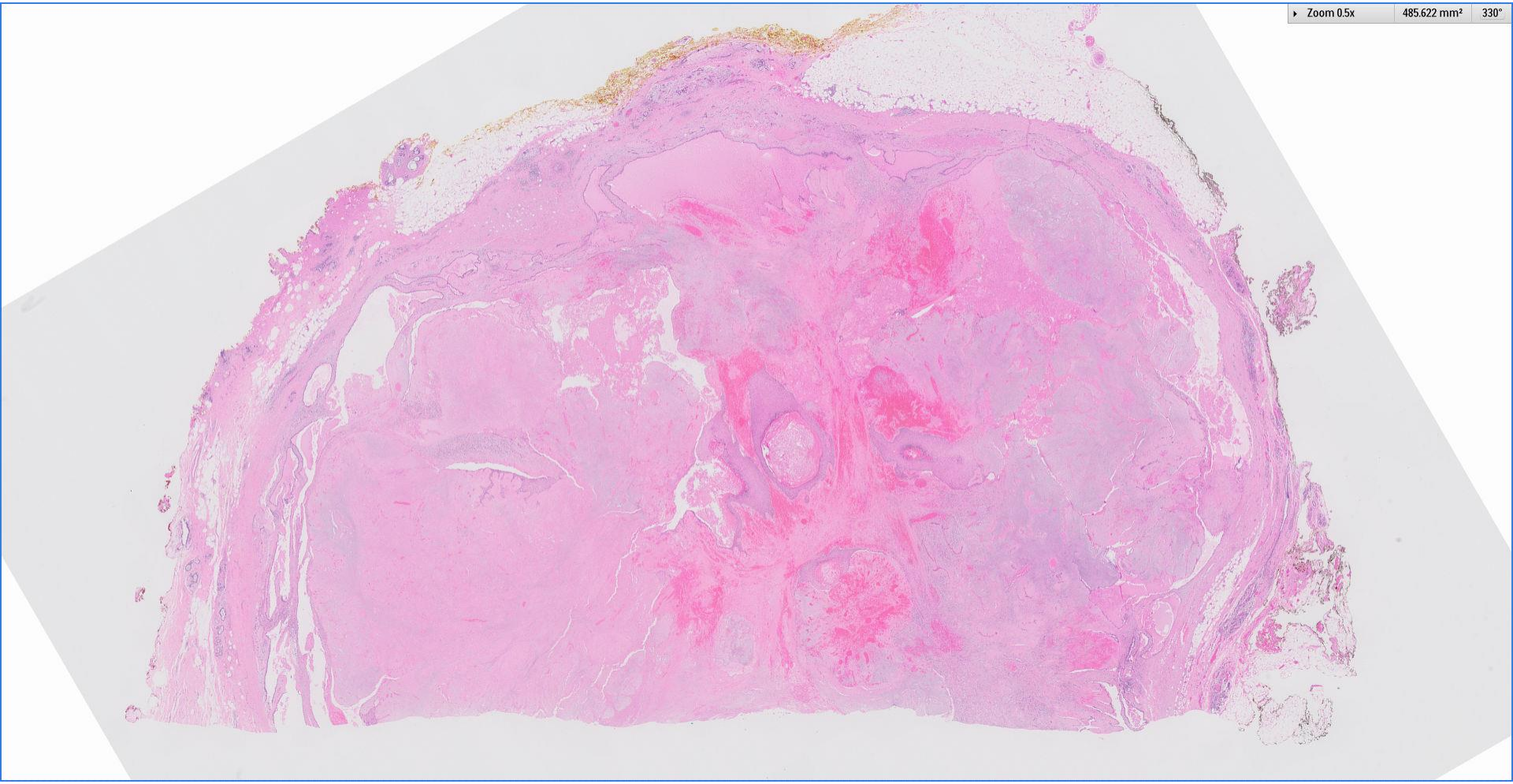
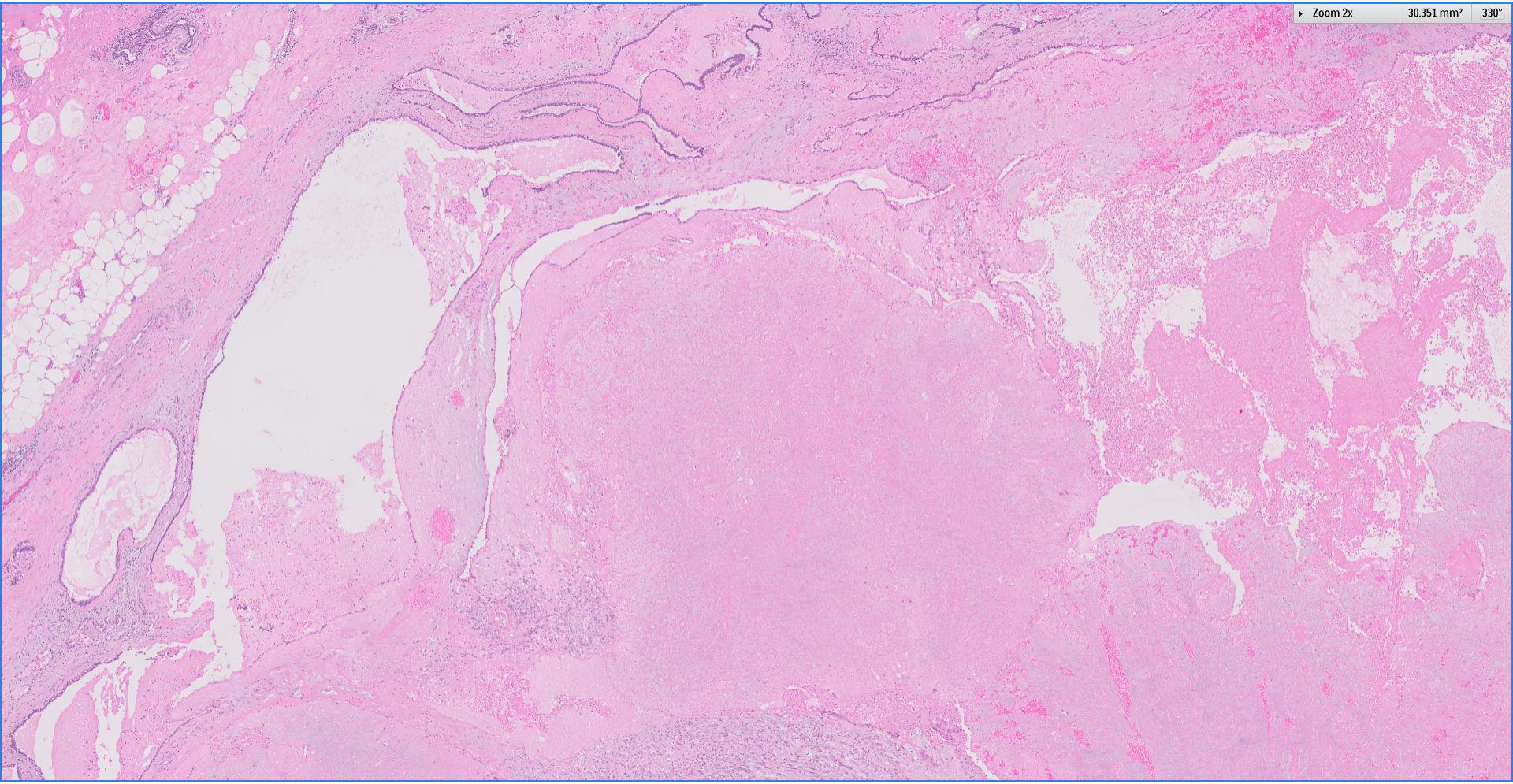
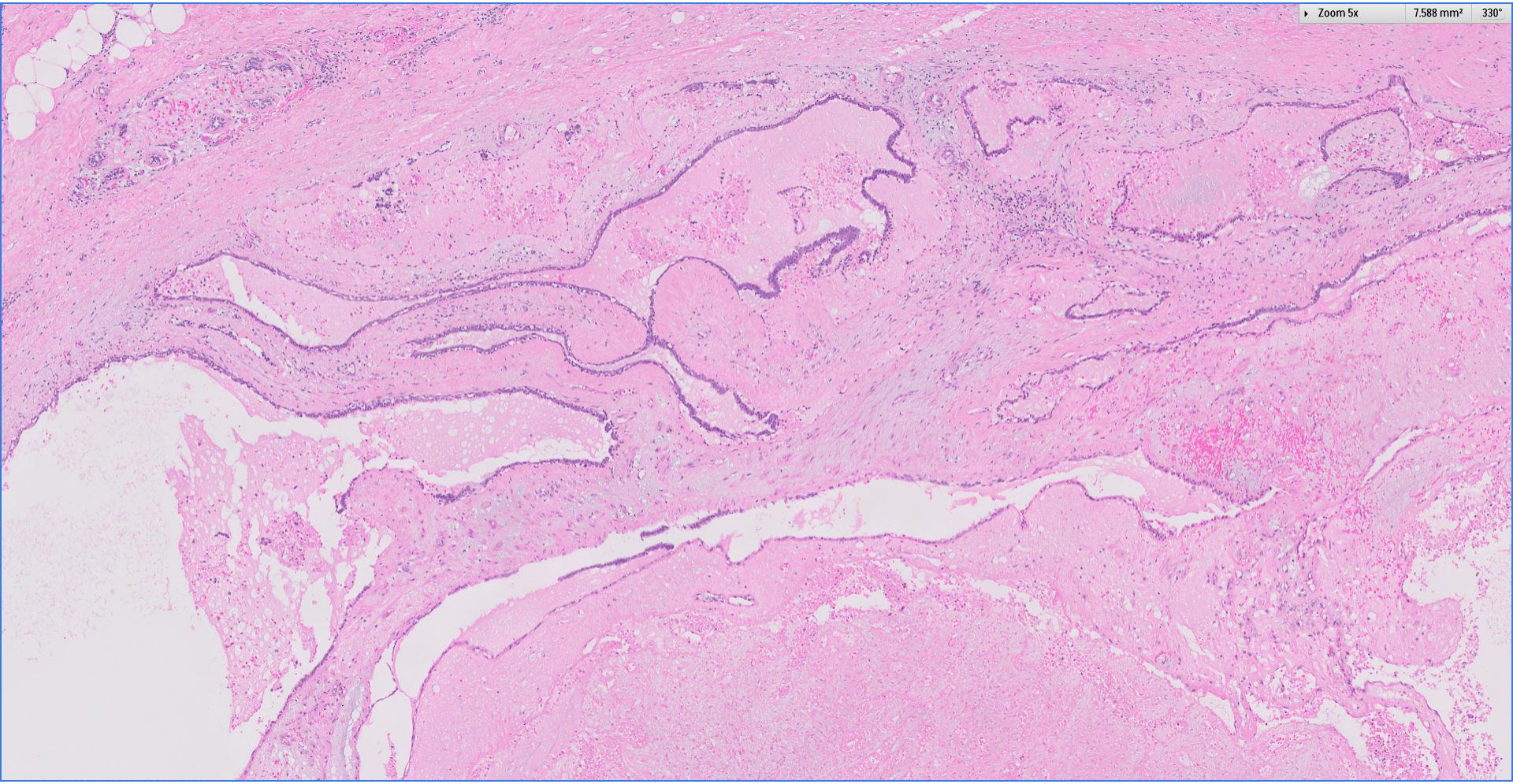
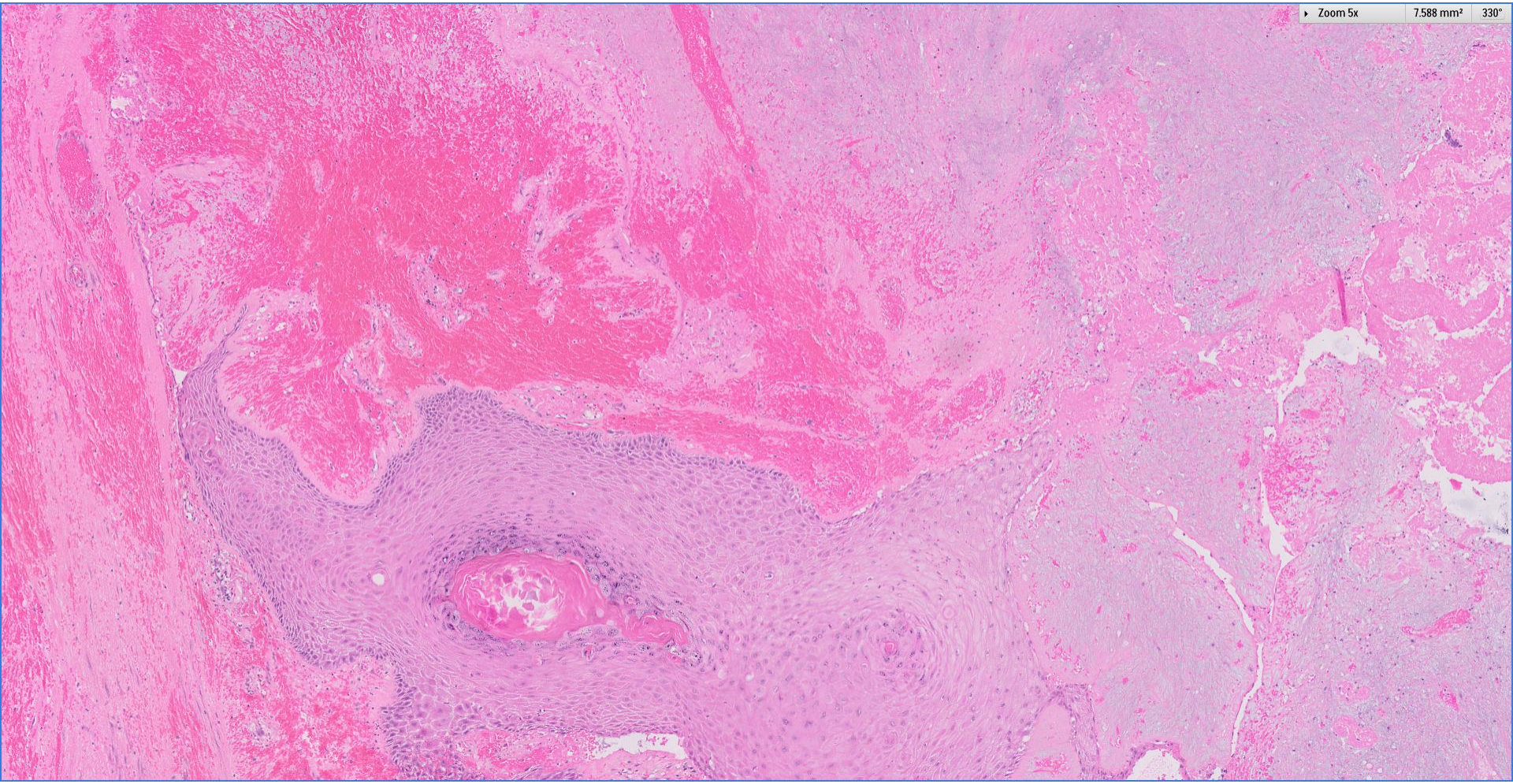
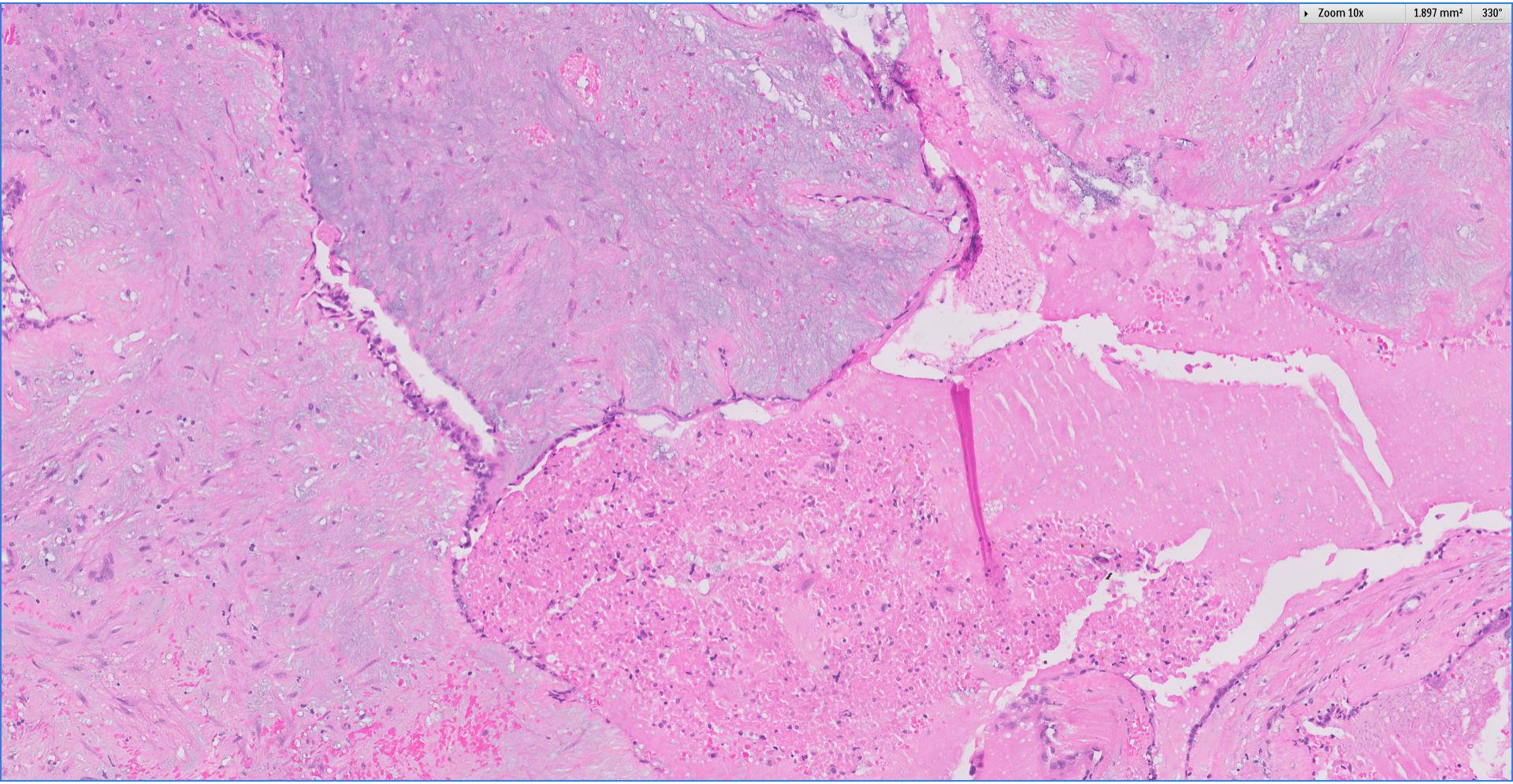

Zoom 0.5x
485.622 mm²
330°


Zoom 2x
30.351 mm²
330°


Zoom 5x
7.588 mm²
330°


Zoom 5x
7.588 mm²
330°


Zoom 10x
1.897 mm²
330°

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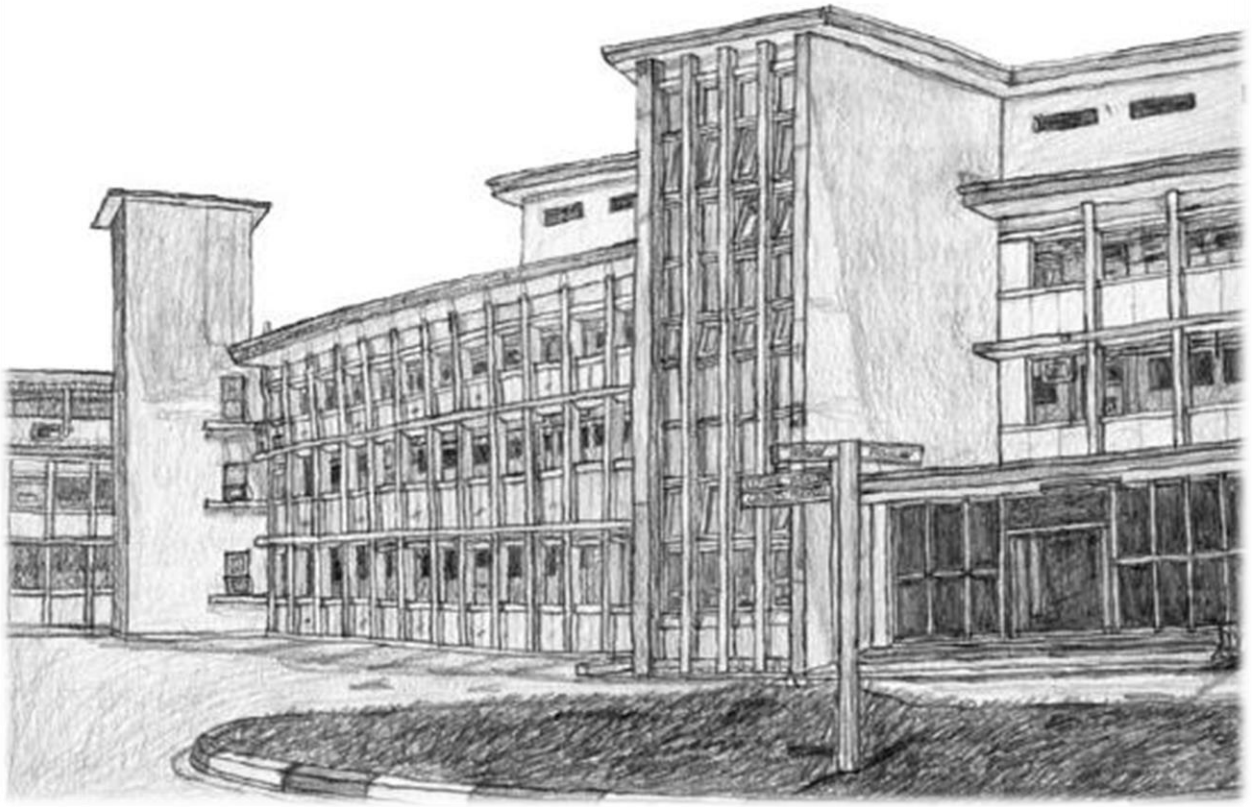

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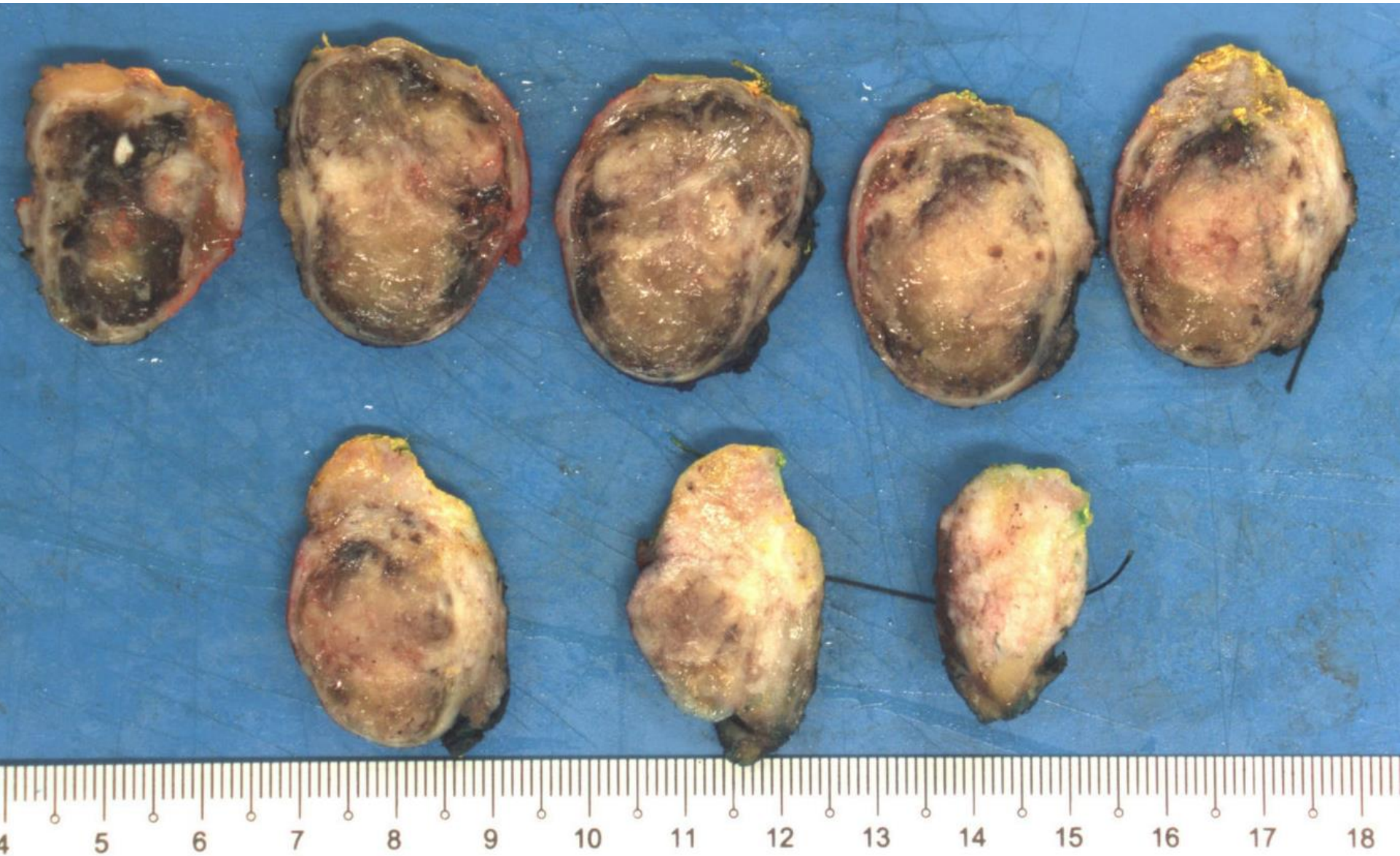
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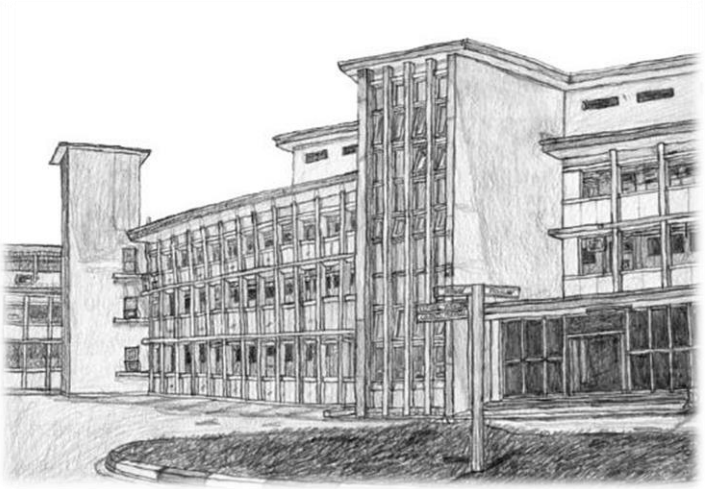
Diagnosis

Right breast 10 o'clock mass, excision ~

Benign phyllodes tumour with haemorrhagic infarction and squamous metaplasia



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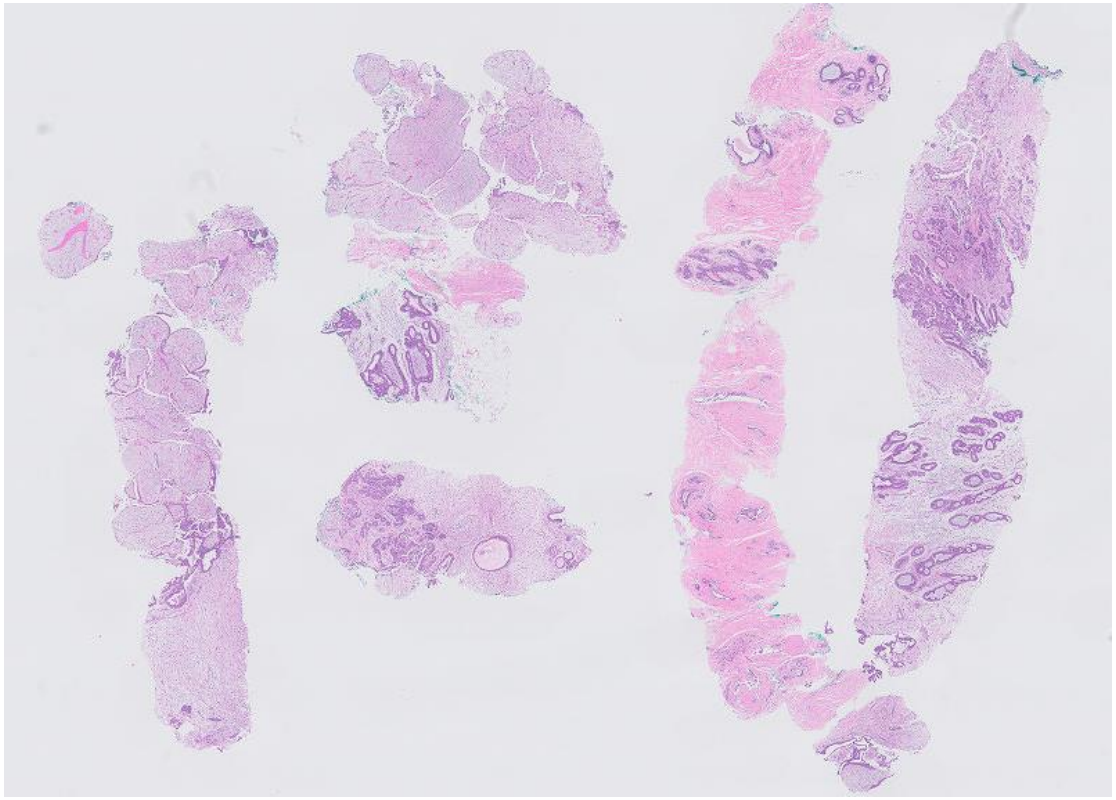
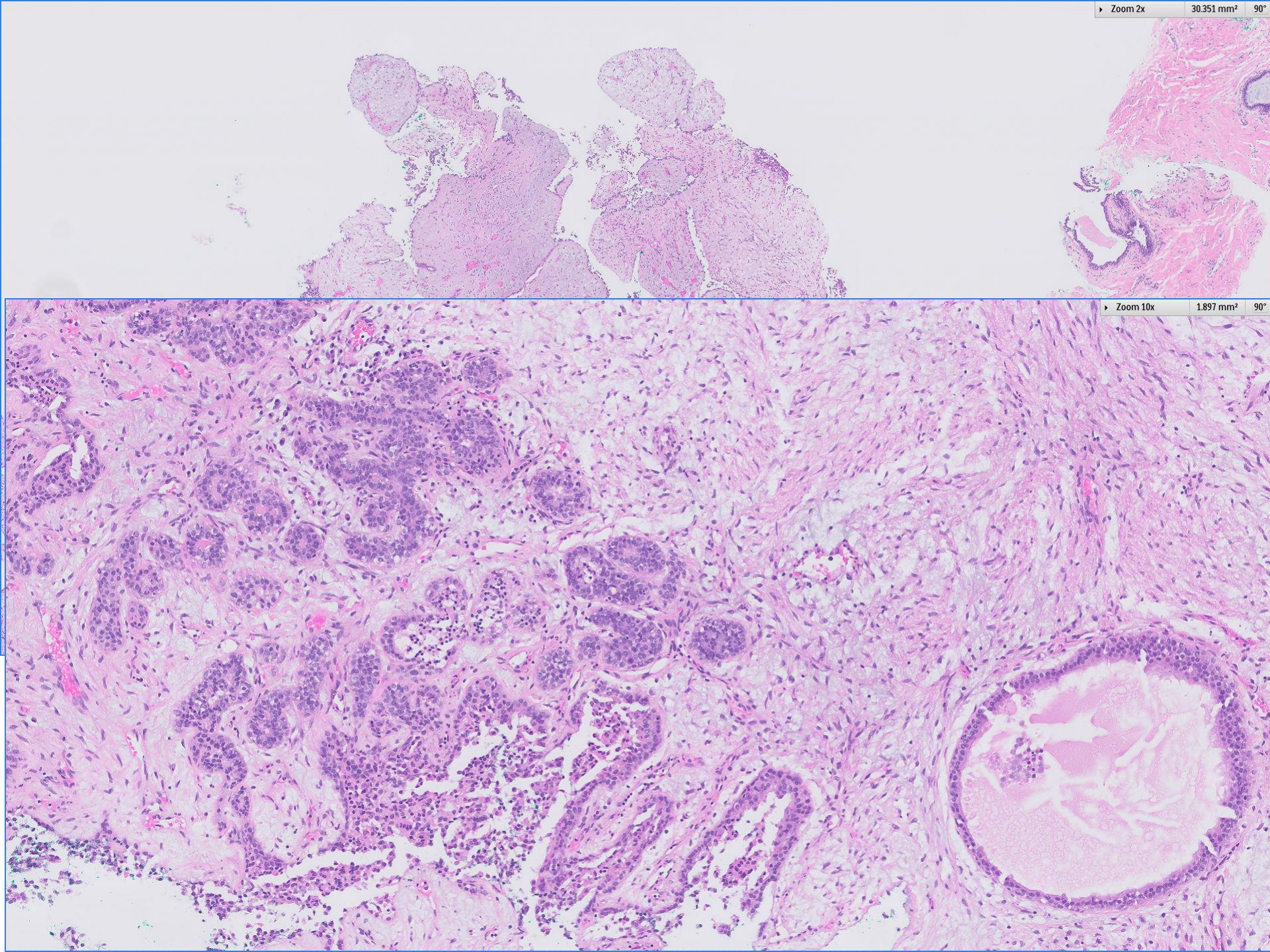
Phyllodes tumour & squamous metaplasia

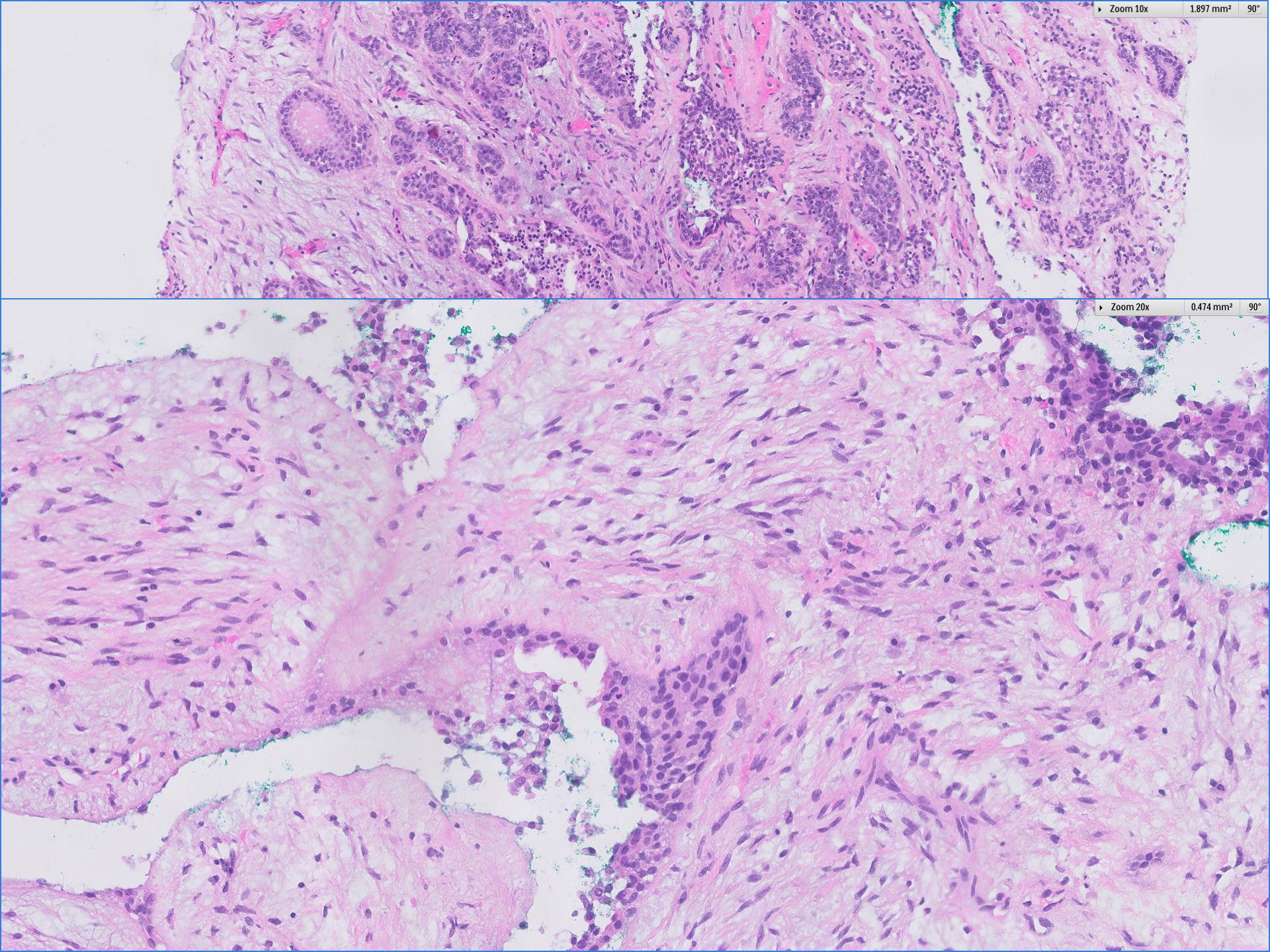
- Squamous metaplasia is sometimes encountered in the epithelial component of breast phyllodes tumours.
- Squamous cysts may be observed.
- Squamous metaplasia may also be seen around areas of infarction.

Previous core biopsy

- 7 weeks previously.
- Diagnosed as ‘mildly cellular fibroepithelial lesion’



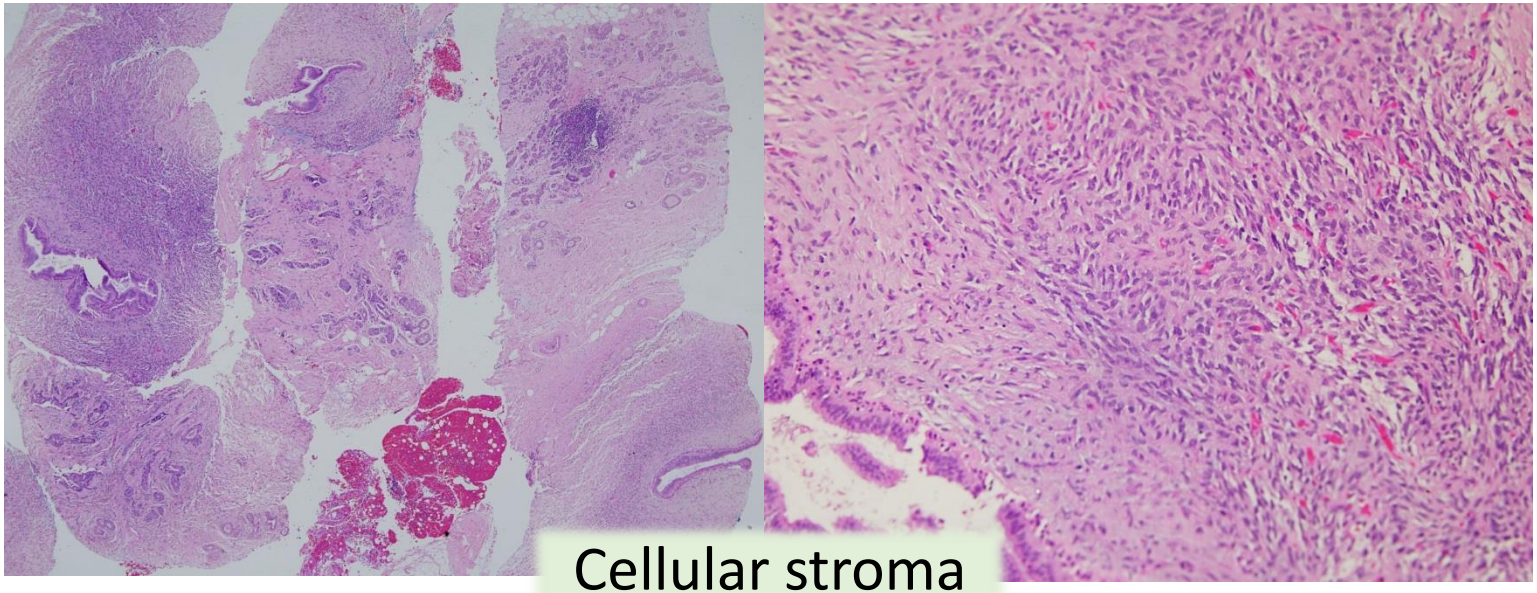

Zoom 2x
30.351 mm²
90°
Zoom 10x
1.897 mm²
90°


Zoom 10x
1.897 mm²
90°
Zoom 20x
0.474 mm²
90°

Additional breast lumps

- Right breast 1230 ~ core biopsy diagnosed fibroadenoma.
- Left breast 1000 ~ core biopsy diagnosed fibroadenoma.

Core biopsy diagnosis of ***cellular*** fibroepithelial neoplasms: ***fibroadenoma or phyllodes?***



Cellular stroma

Core biopsy diagnosis of ***cellular fibroepithelial lesions*** – prediction of phyllodes tumour

Author	Reference	Key findings predicting phyllodes tumour
Jacobs et al	*Am J Clin Pathol 2005; 124: 342-354*	Marked stromal cellularity, mitoses in moderate stromal cellularity, Ki67 & topoisomerase IIα indices
Lee et al	*Histopathology 2007; 51: 336-344*	Stromal cellularity ≥ 50% stroma, stromal overgrowth, fragmentation, adipose within stroma
Resetkova et al	*Breast J 2010; 16:573-80.*	No predictive value of clinical, radiologic or pathologic data Suggested follow-up alone for a patient subset
Jara-Lazaro et al	*Histopathology 2010; 57: 220-232*	Marked stromal cellularity/atypia, stromal overgrowth, mitoses ≥ 2 per 10 hpf, ill-defined lesional borders, Ki67 & topoisomerase IIα indices ≥ 5%, reduced CD34 staining
Yasir et al	*Am J Clin Pathol 2014; 142: 362-369*	Mitoses, stromal overgrowth, fragmentation, adipose infiltration, heterogeneity, subepithelial condensation, nuclear pleomorphism

Tan *et al. Breast Cancer Research* (2016) 18:31
DOI 10.1186/s13058-016-0692-6

Breast Cancer Research

RESEARCH ARTICLE Open Access

A five-gene reverse transcription-PCR assay for pre-operative classification of breast fibroepithelial lesions

Wai Jin Tan[1], Igor Cima[1], Yukti Choudhury[1], Xiaona Wei[1], Jeffrey Chun Tatt Lim[2], Aye Aye Thike[2], Min-Han Tan[1] and Puay Hoon Tan[2,3*]

Methods: We profiled the transcriptome of a training set of 48 formalin-fixed, paraffin-embedded fibroadenomas and phyllodes tumors and further designed 43 quantitative polymerase chain reaction (qPCR) assays to verify differentially expressed genes. Using machine learning to build predictive regression models, we selected a five-gene transcript set (*ABCA8*, *APOD*, *CCL19*, *FN1*, and *PRAME*) to discriminate between fibroadenomas and phyllodes tumors. We validated our assay in an independent cohort of 230 core biopsies obtained pre-operatively.

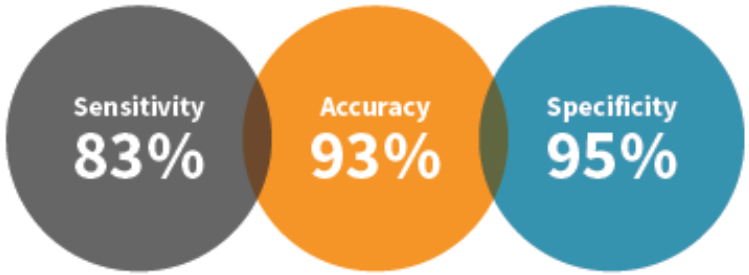
Results: Overall, the assay accurately classified 92.6 % of the samples (AUC = 0.948, 95 % CI 0.913–0.983, $p = 2.51E-19$), with a sensitivity of 82.9 % and specificity of 94.7 %.

FibroPhyllo™ Tissue Test

The performance of the FibroPhyllo™ Tissue Test in pre-operative classification of breast fibroepithelial lesions was validated in a cohort study of 230 core biopsies with at least 2 years of follow-up[5].

LUCENCE DIAGNOSTICS

TEST PERFORMANCE



TEST REQUIREMENTS

1) FFPE Tissues - Core / Excisional Biopsies
   - Minimum 50 microns equivalent (e.g. 10 slides of 5 micron-thickness or 5 slides of 10 micron-thickness)
   - Slides uncharged and uncoated

2) Matched H&E slide with tumor region marked out

3) Matched histology report of tissue biopsy

4) Tissue curls are not be accepted

TURNAROUND TIME

7 days

Call our sales hotline: **+65 6592 5102** or email: **enquiry@lucencedx.com**

LUCENCE DIAGNOSTICS

Lucence Genetics Clinic
6 Napier Road, #04-03, Gleneagles Medical Centre
Singapore 258499 Tel: +65 6592 5102 Fax: +65 6725 0590

Lucence Service Laboratory
211 Henderson Road, #04-01/02 Henderson Industrial Park
Singapore 159552 Tel: +65 6909 0390 Fax: +65 6725 0590

* The breast pathology team does not have any commercial or financial association with this test

Core biopsies of fibroepithelial neoplasms ~ an approach

- Benign, consistent with FA ~ may leave alone.
- Benign, favouring or unable to rule out phyllodes tumour ~ excise.
- Benign, 2 cm or larger ~ consider excision.
- Benign, but patient experiences rapid tumour growth ~ excise.
- Malignant ~ resection.

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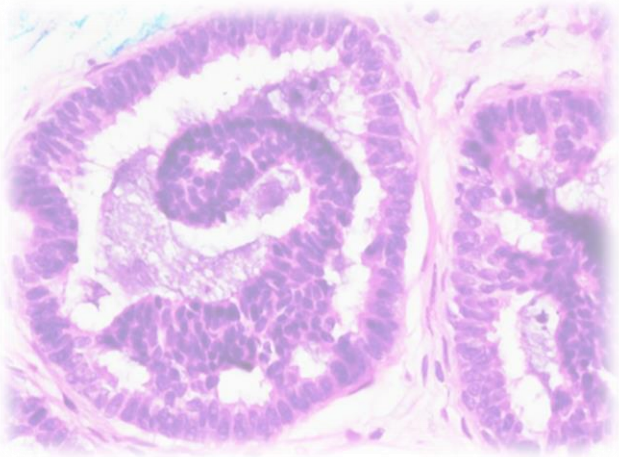
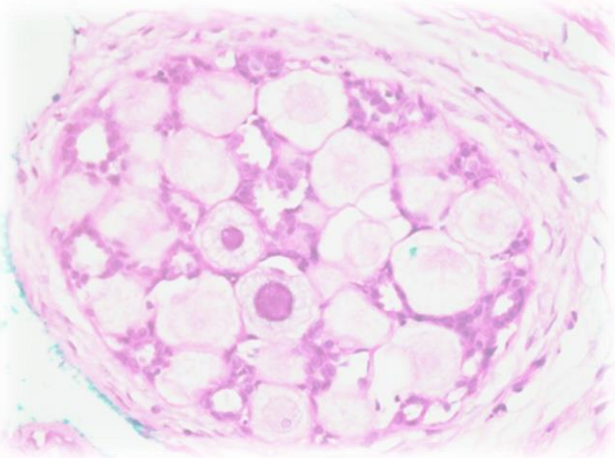
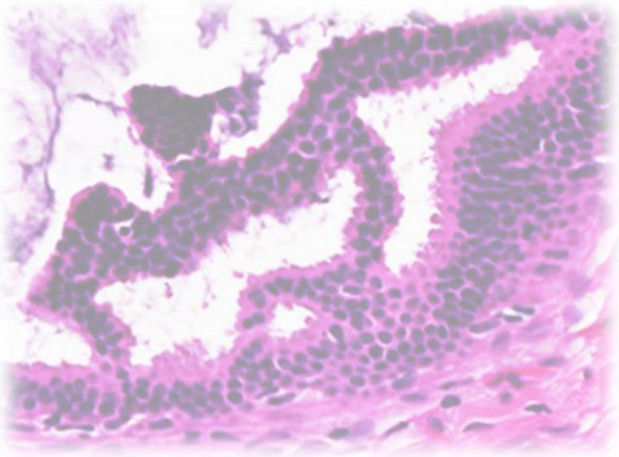
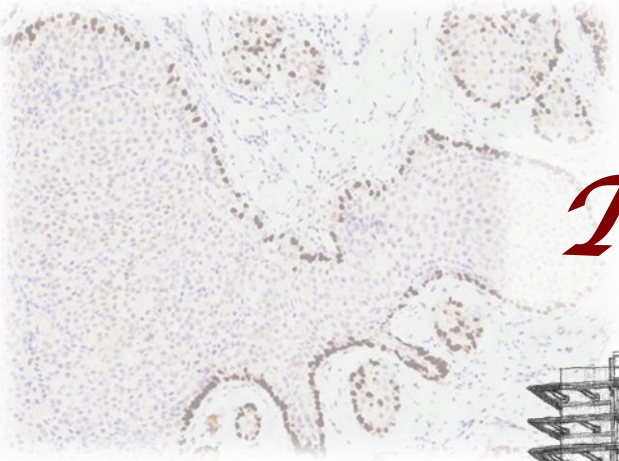
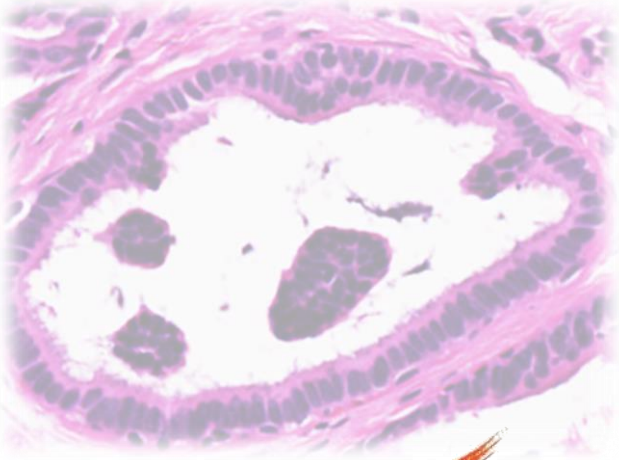
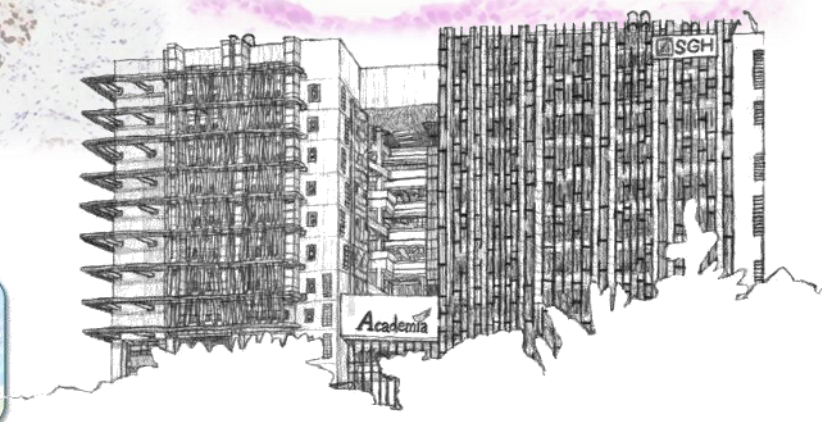







Thank you!



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