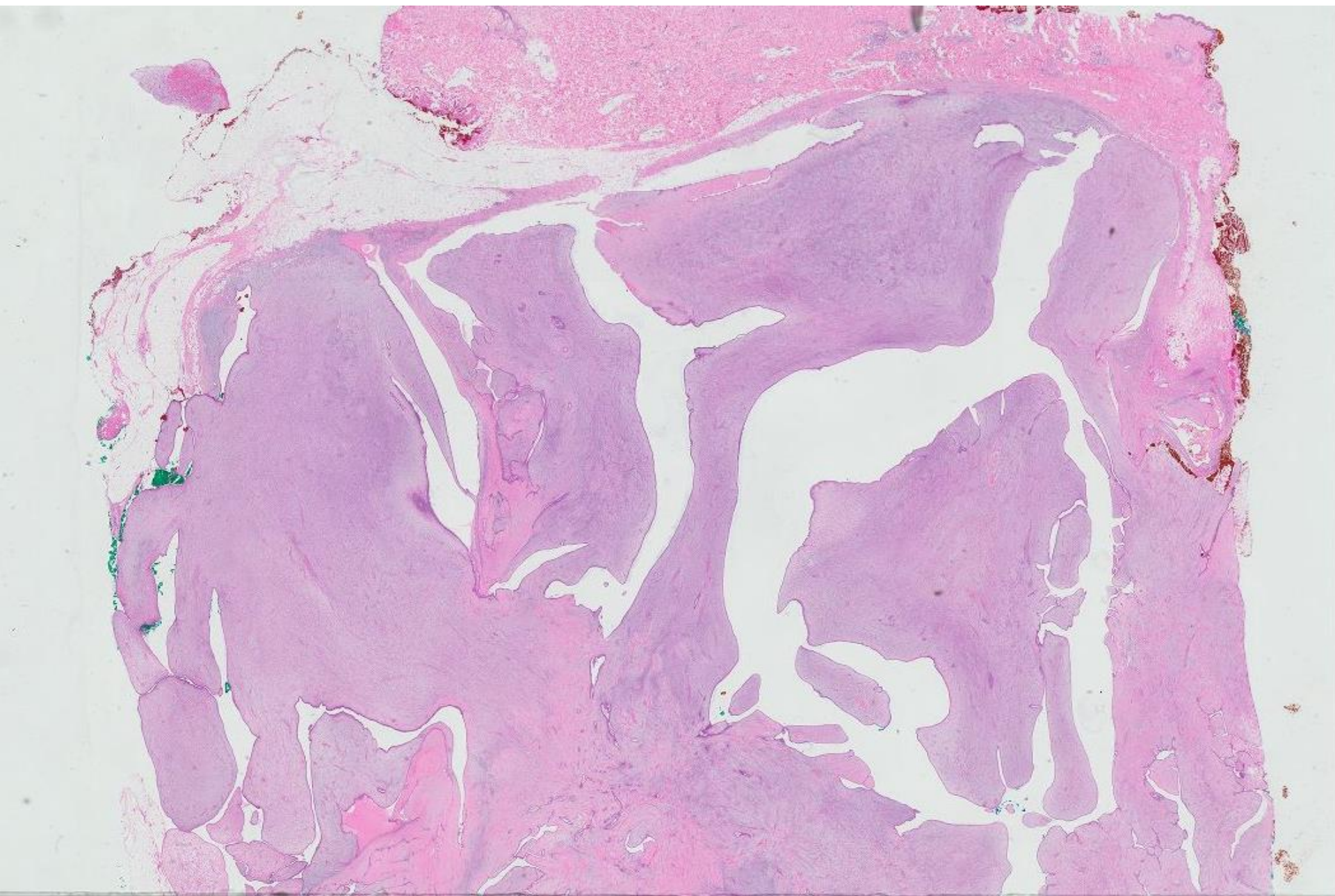


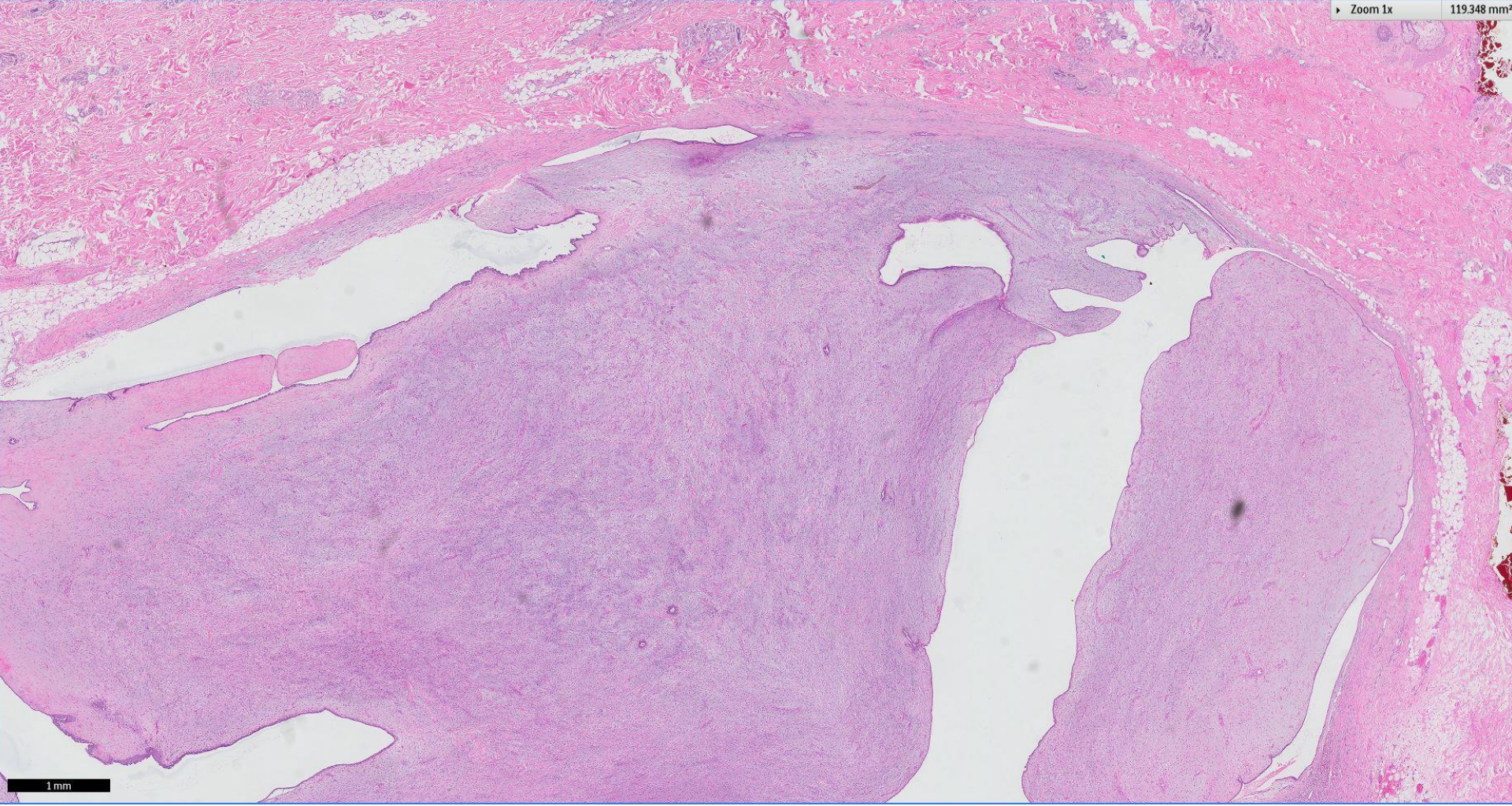
# *Case 18*

59 year old woman with a right breast mass.

Excision performed.



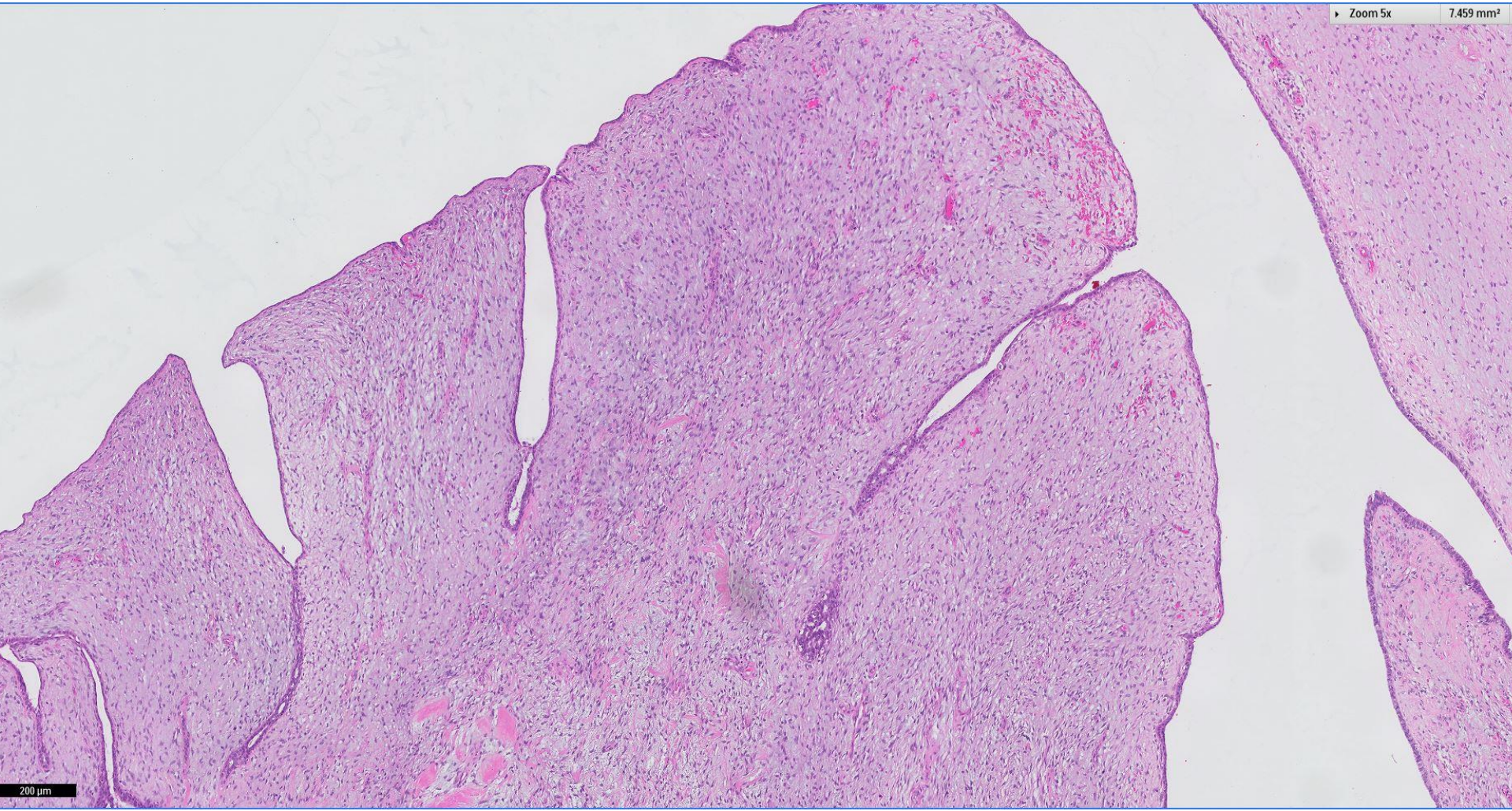




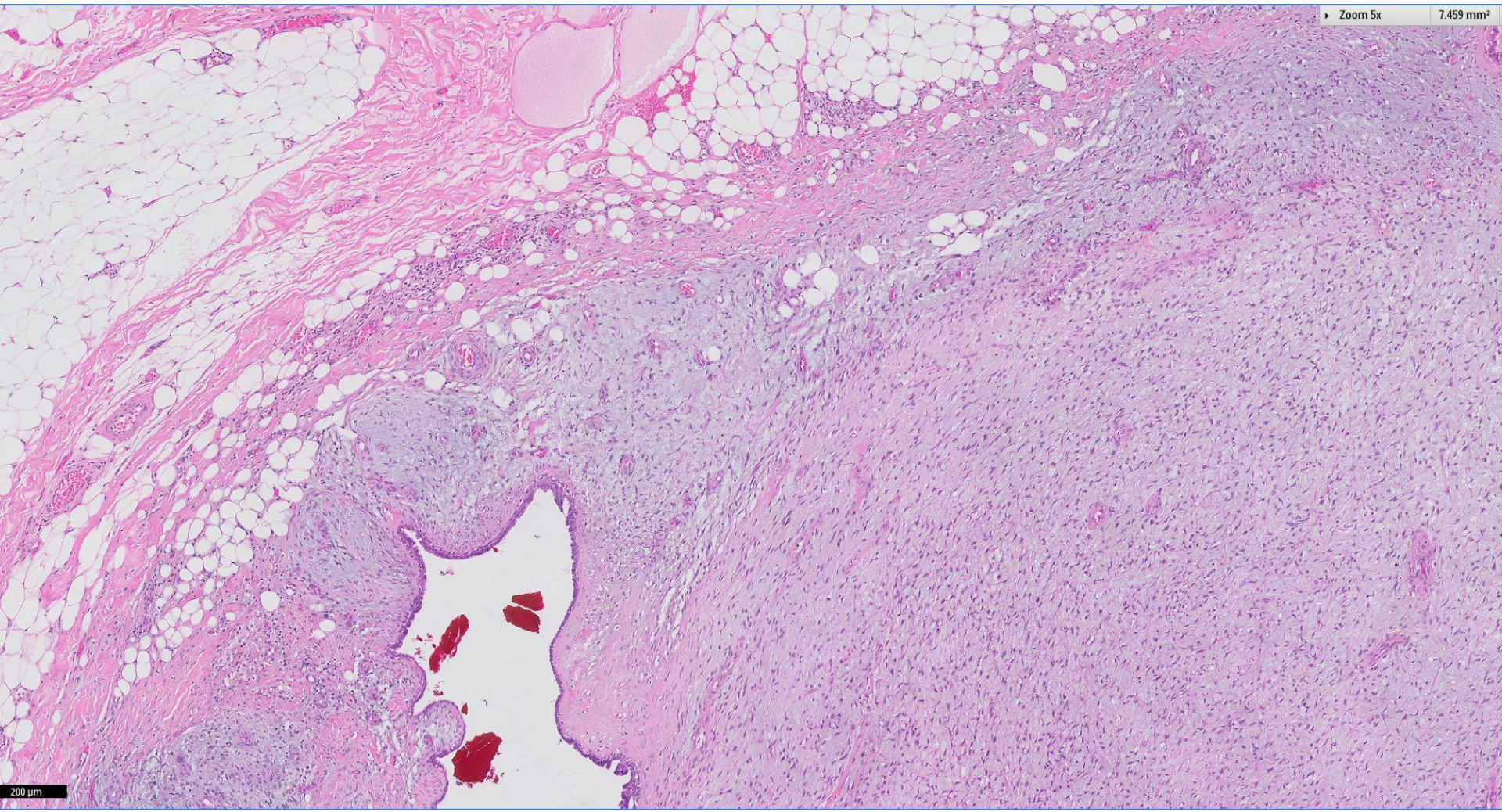
1 mm

Zoom 5x

7.459 mm<sup>2</sup>

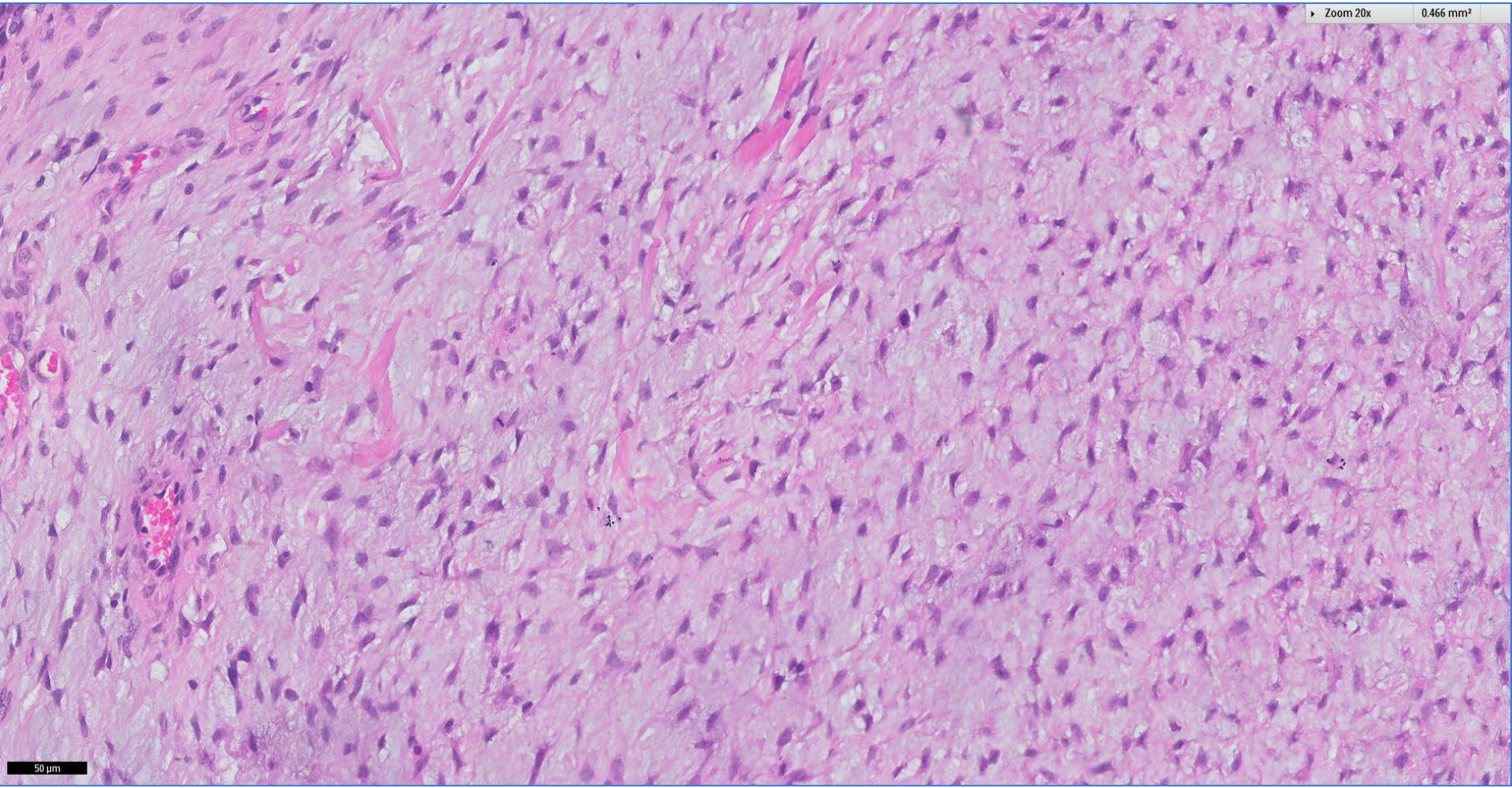


200 μm



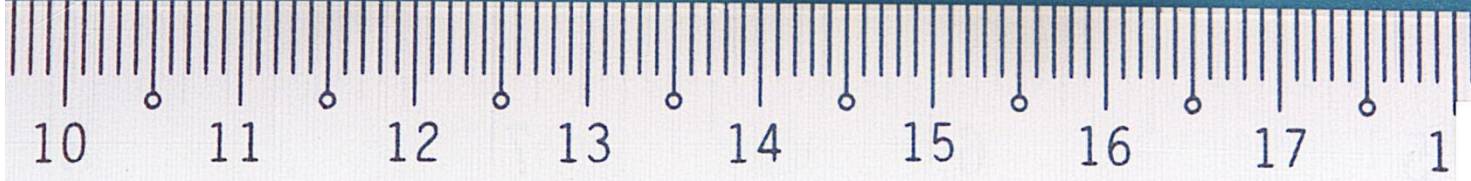
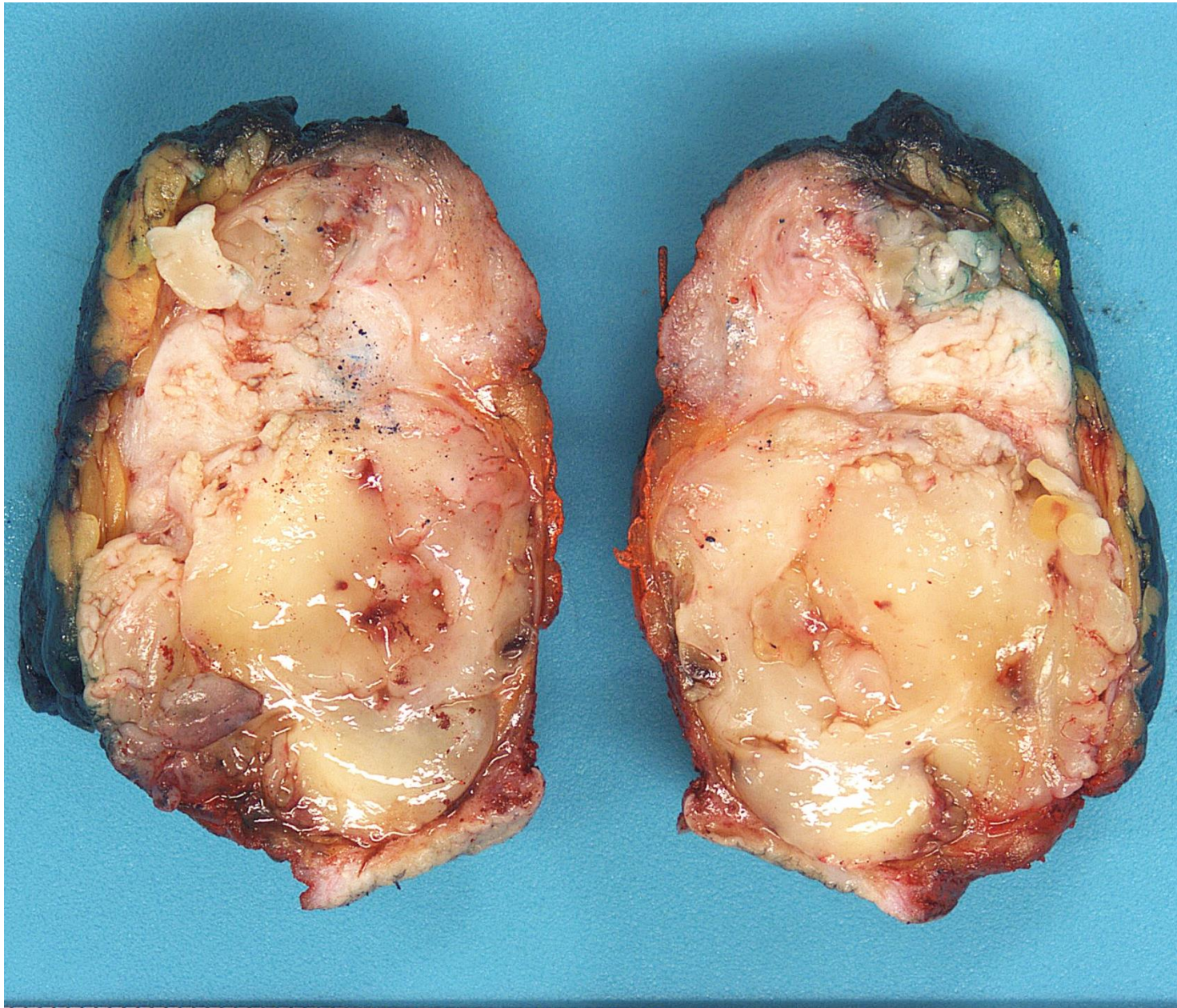
Zoom 20x

0.466 mm<sup>2</sup>



50 μm

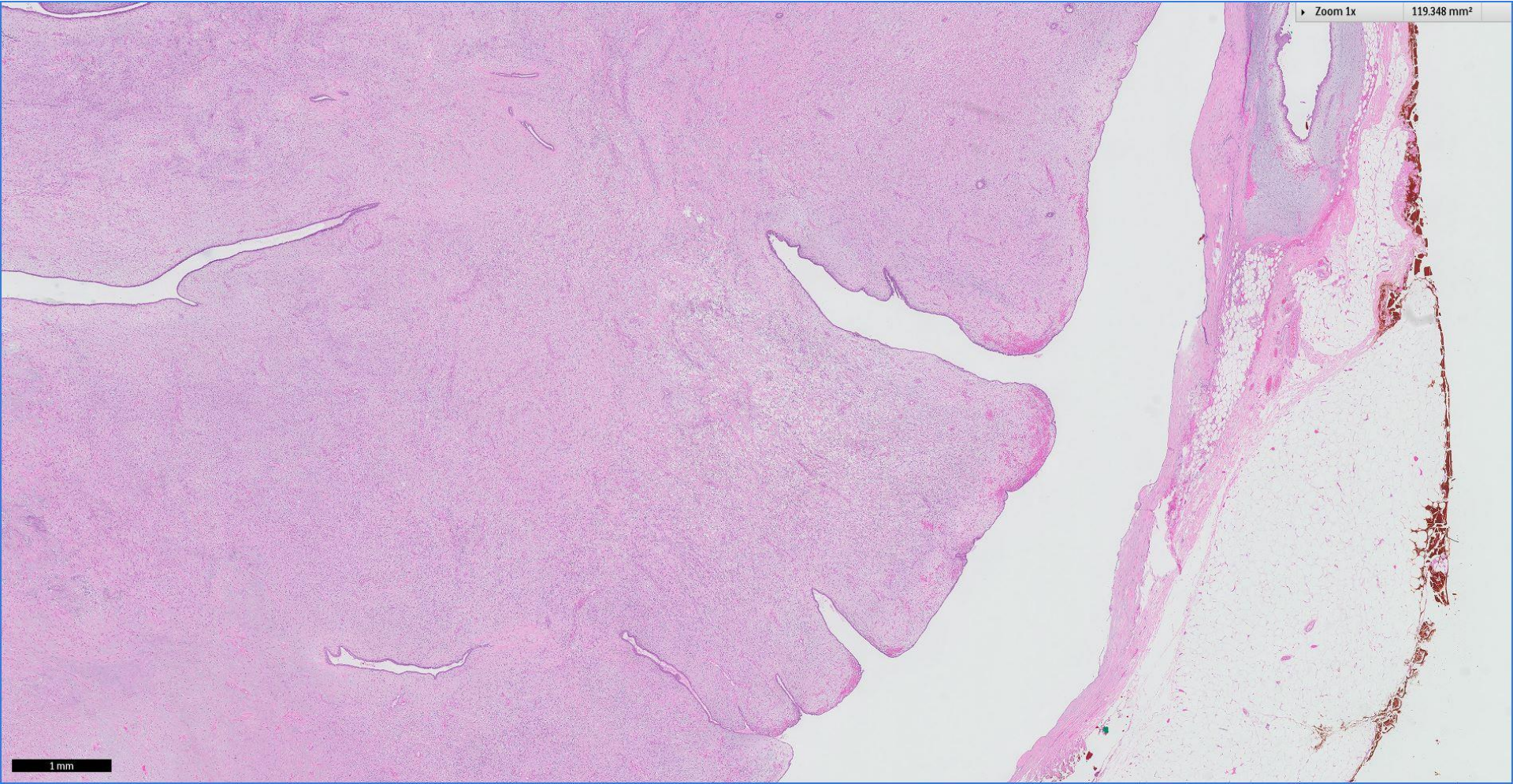






Zoom 1x

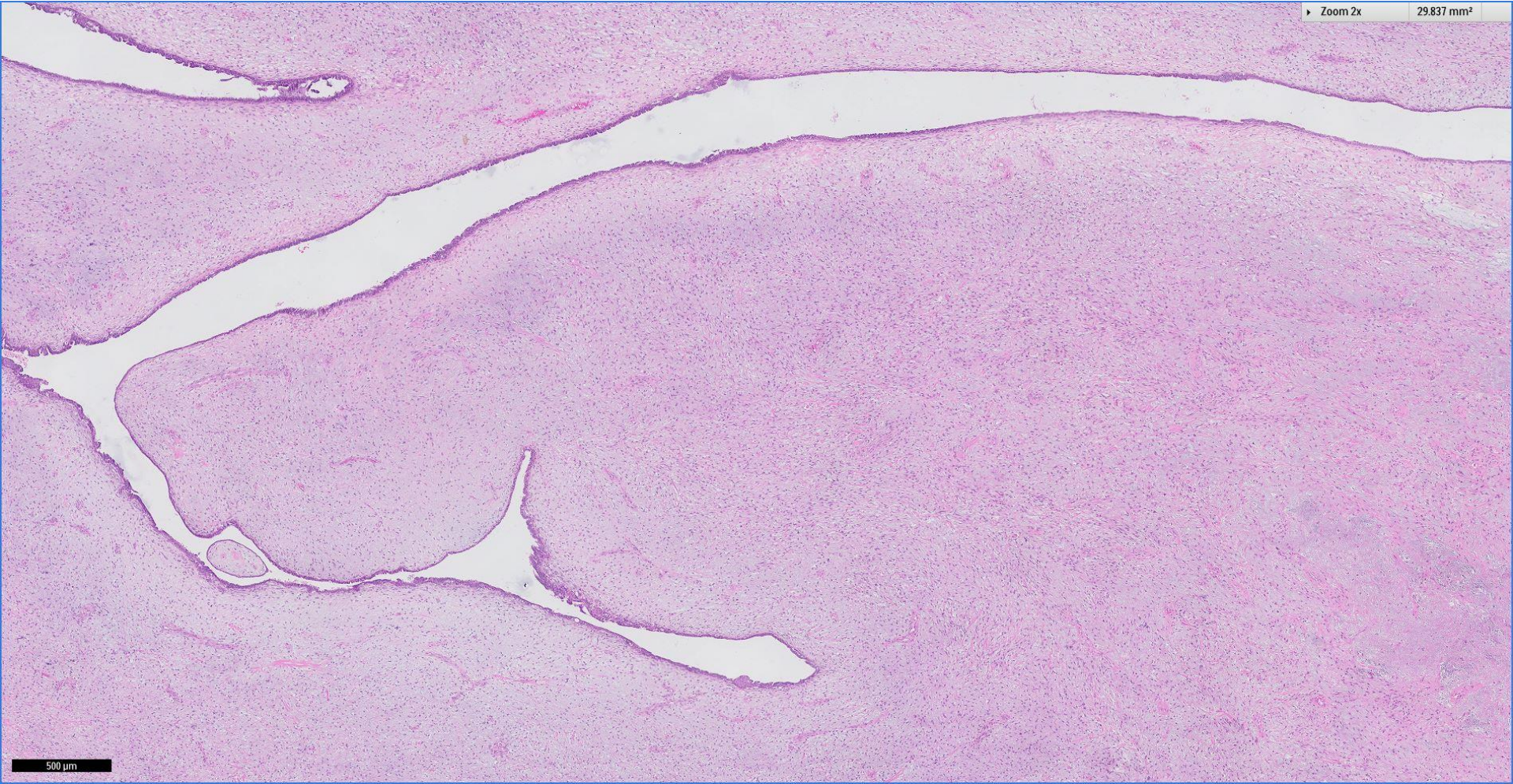
119.348 mm<sup>2</sup>



1 mm

Zoom 2x

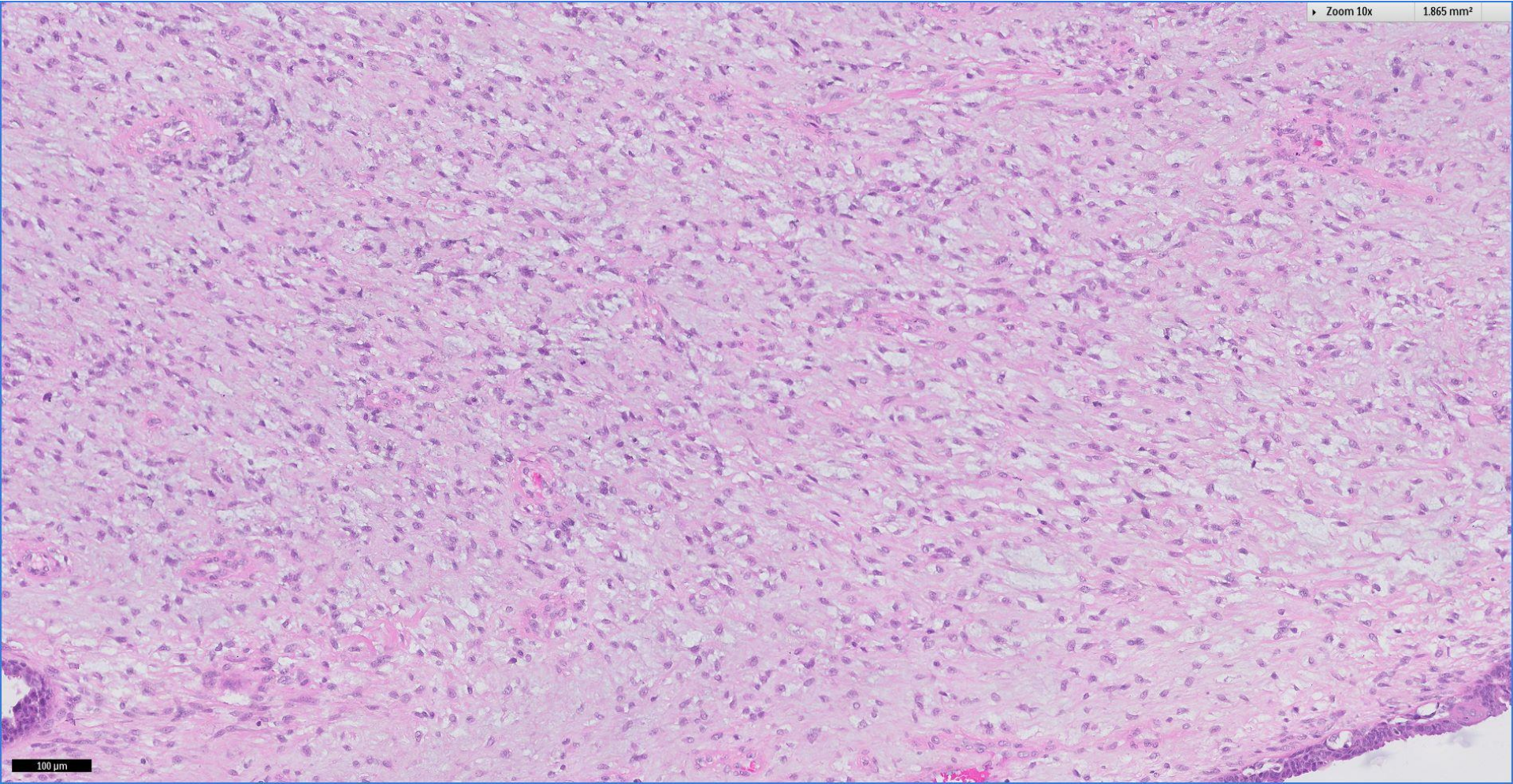
29.837 mm<sup>2</sup>



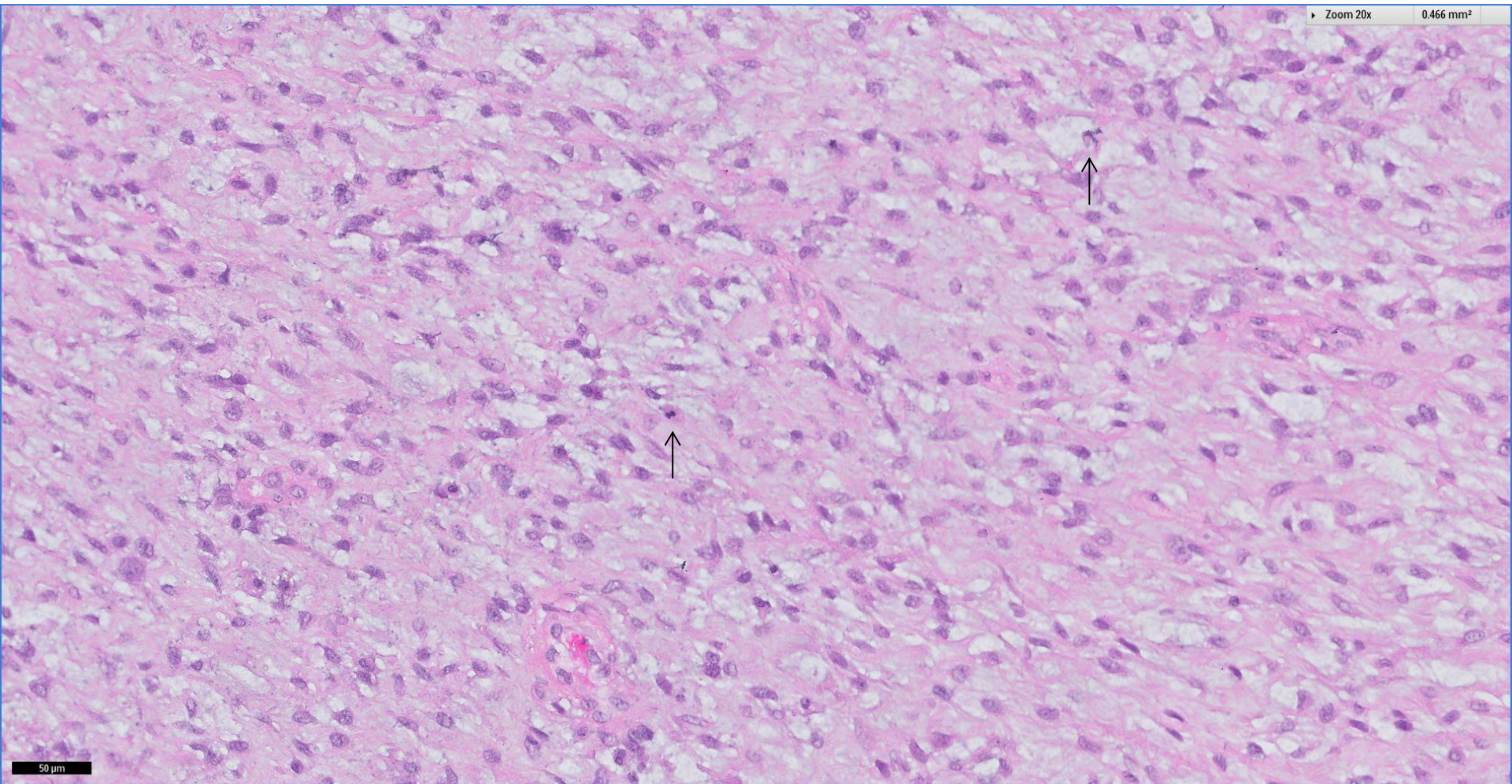
500  $\mu$ m

Zoom 10x

1.865 mm<sup>2</sup>



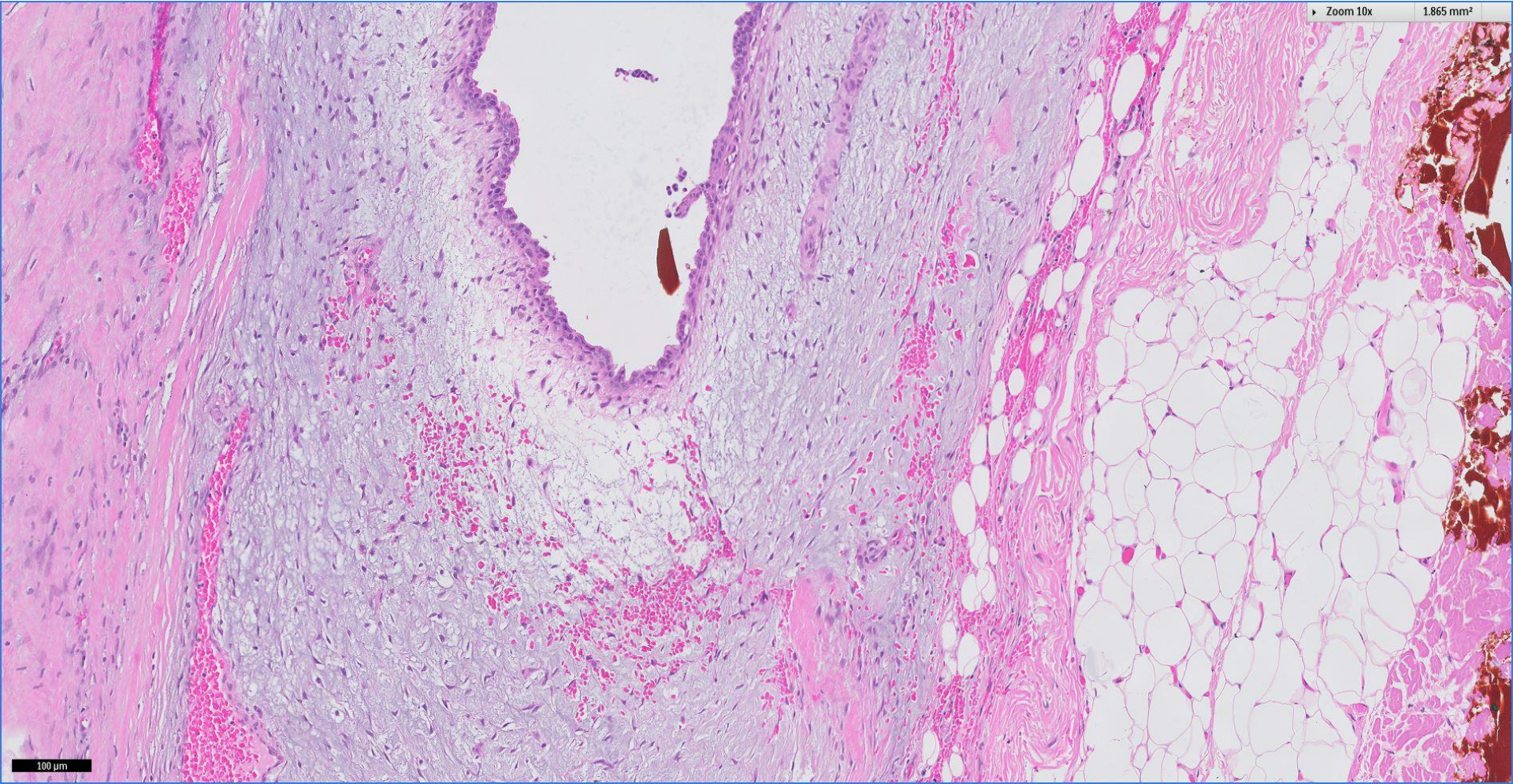
100  $\mu$ m



*Mitoses up to 11 per 10 hpf in the most mitotically active areas*

Zoom 10x

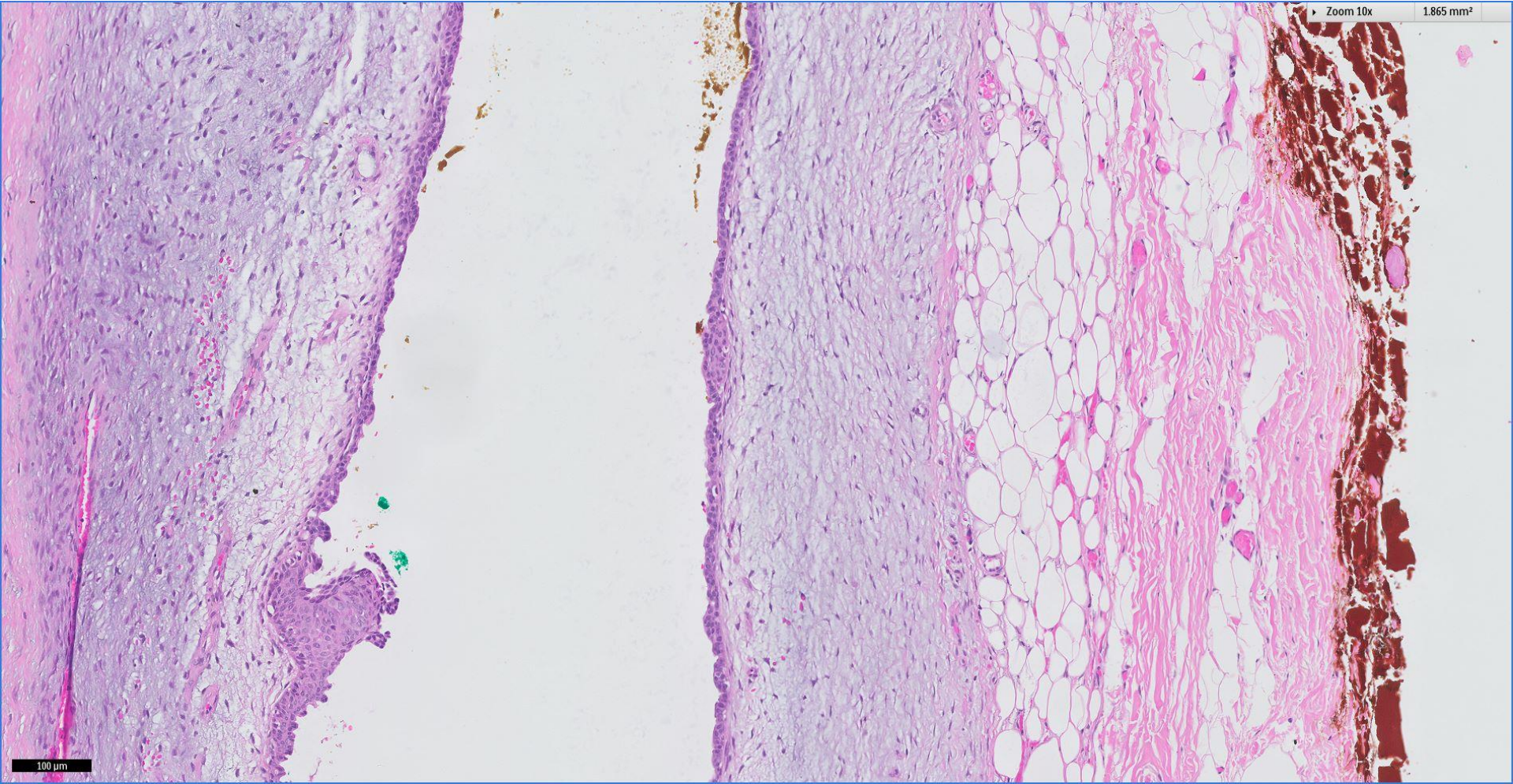
1.865 mm<sup>2</sup>



100  $\mu$ m

Zoom 10x

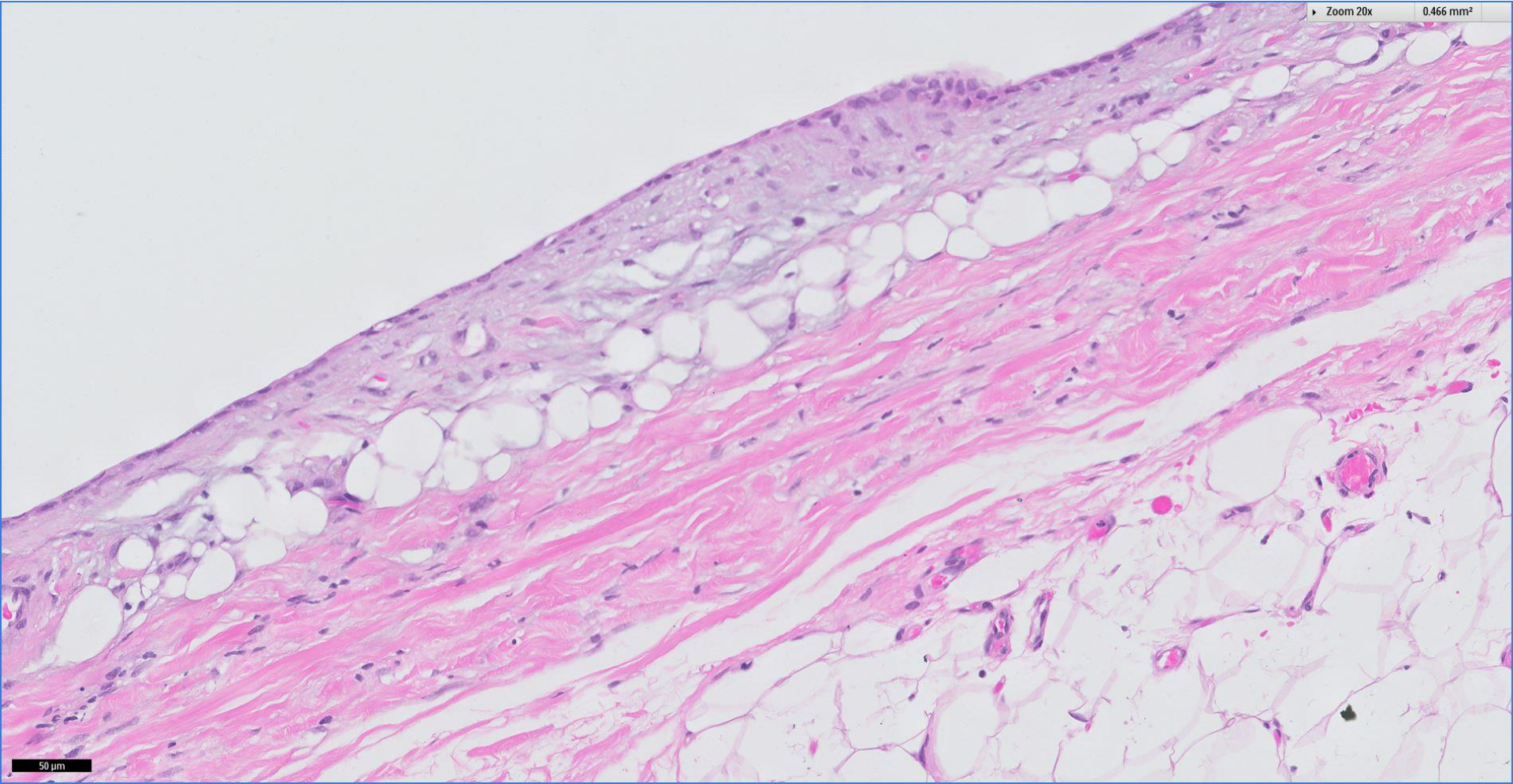
1.865 mm<sup>2</sup>



100  $\mu$ m

Zoom 20x

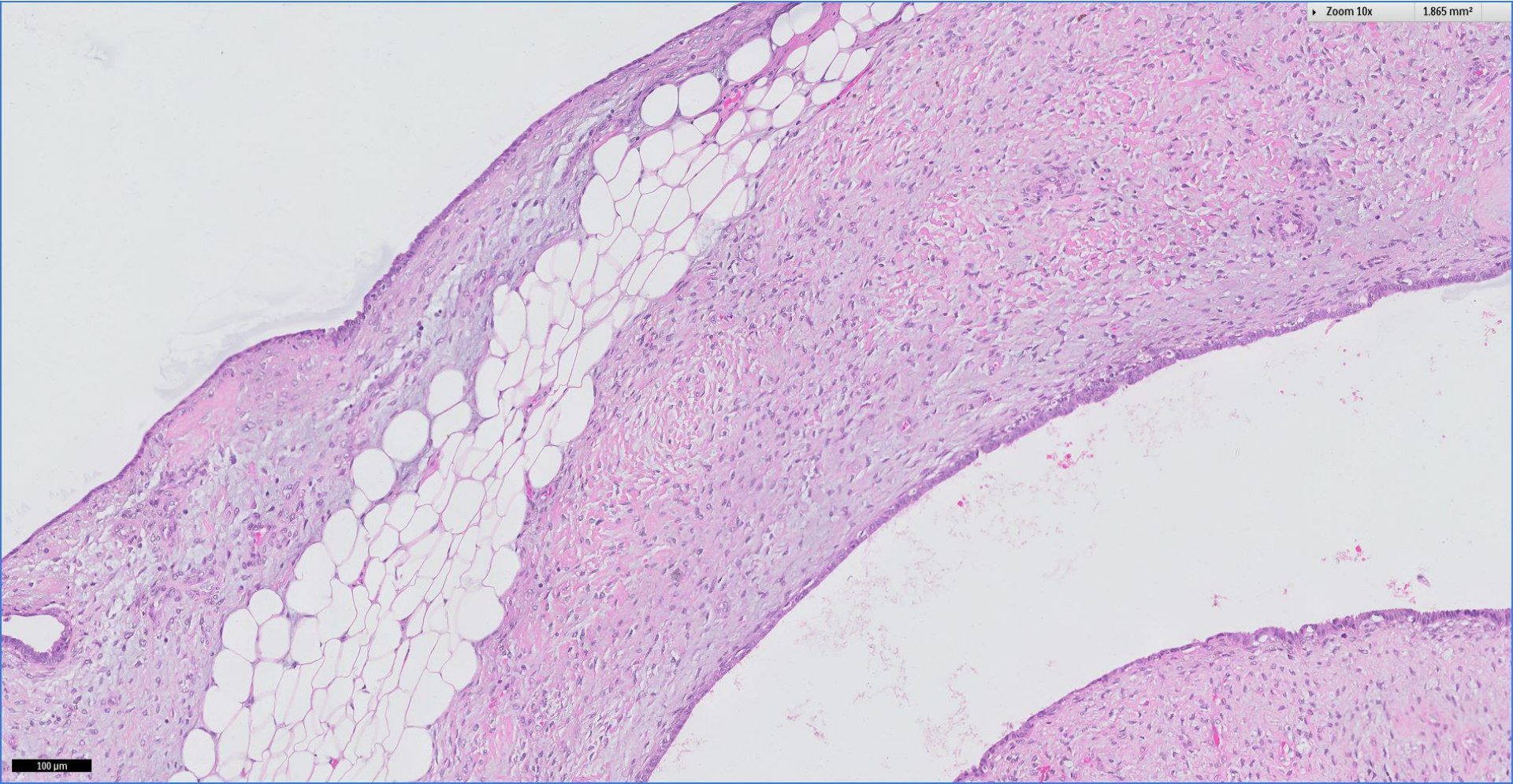
0.466 mm<sup>2</sup>



50 μm

Zoom 10x

1.865 mm<sup>2</sup>

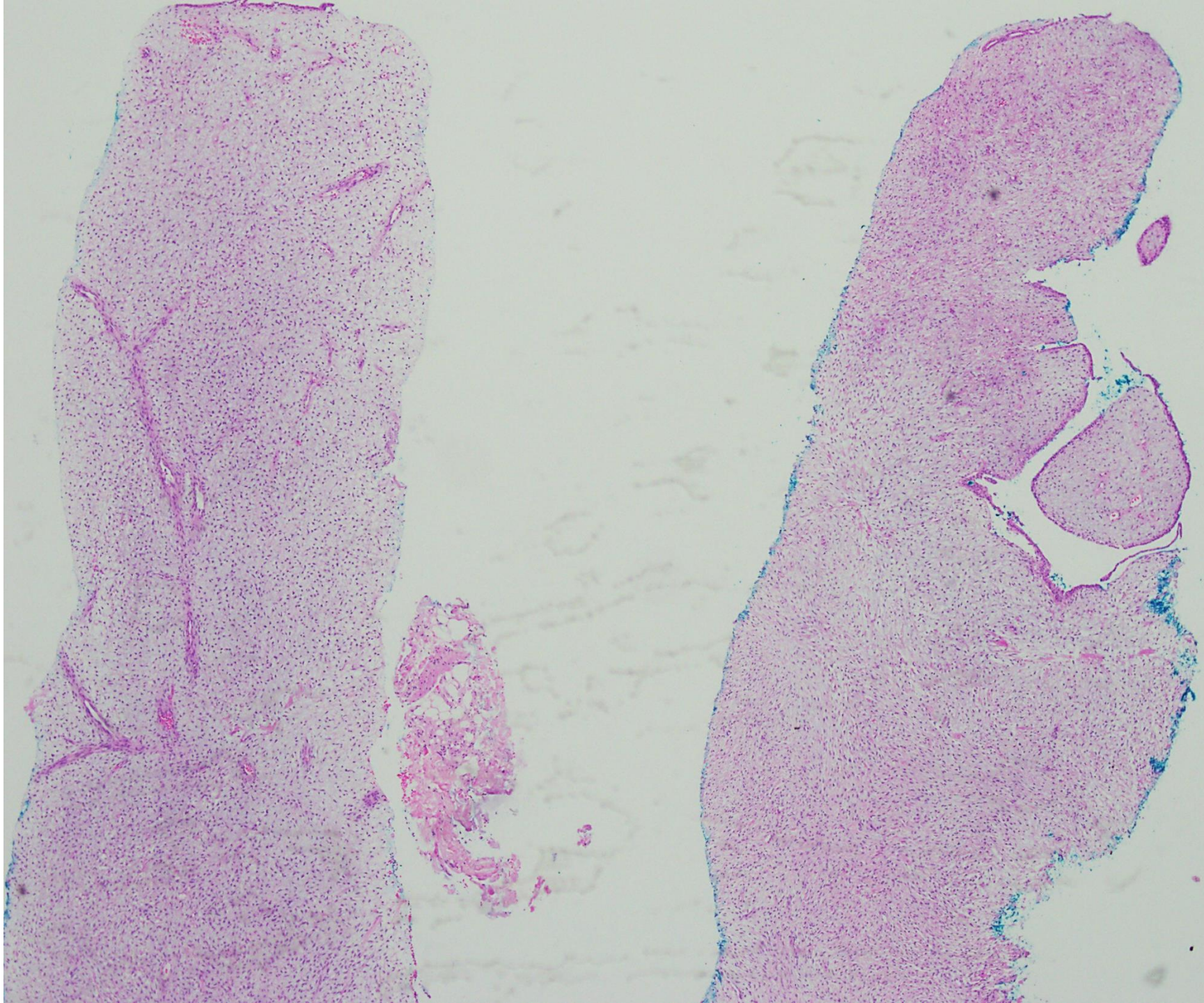


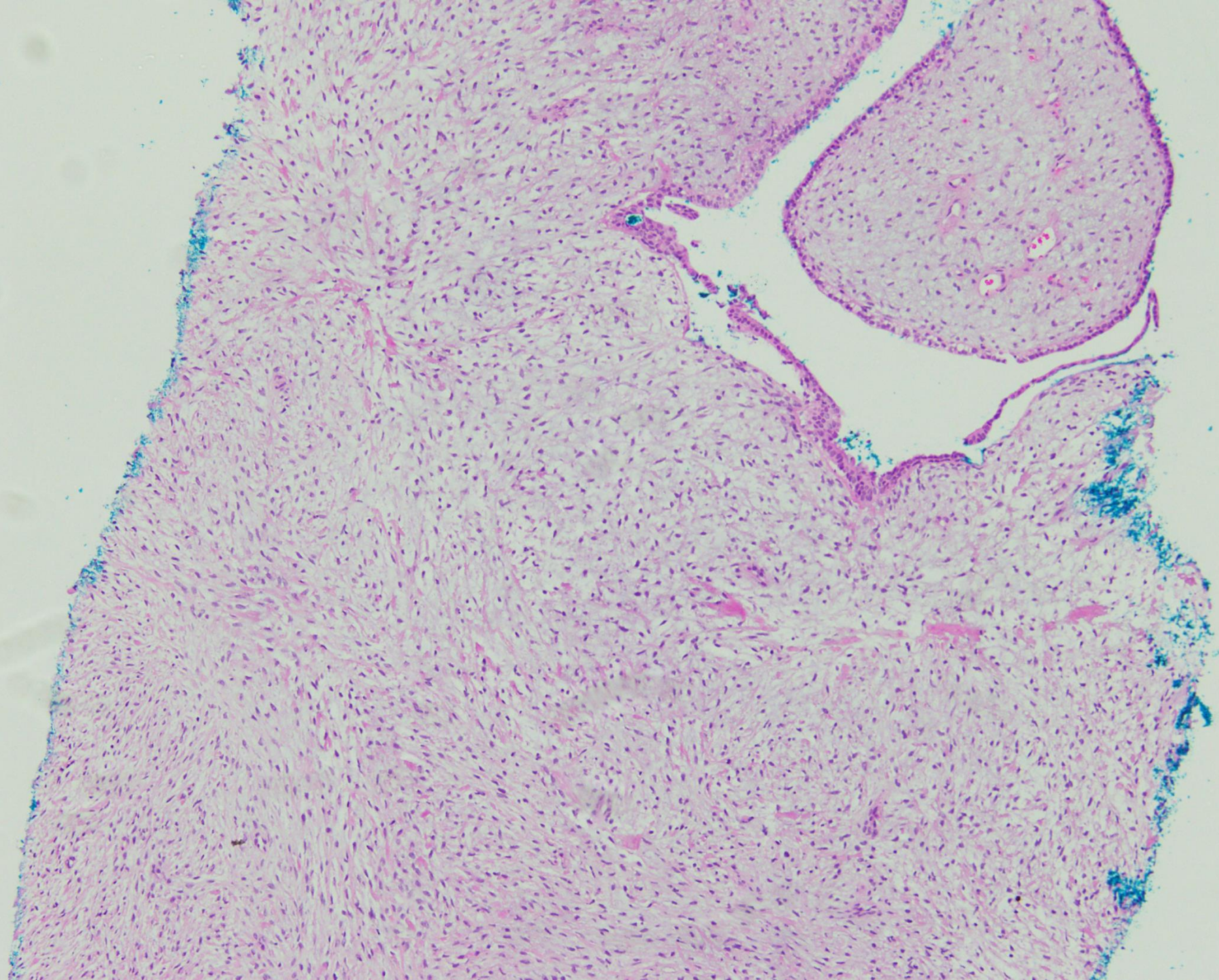
100  $\mu$ m



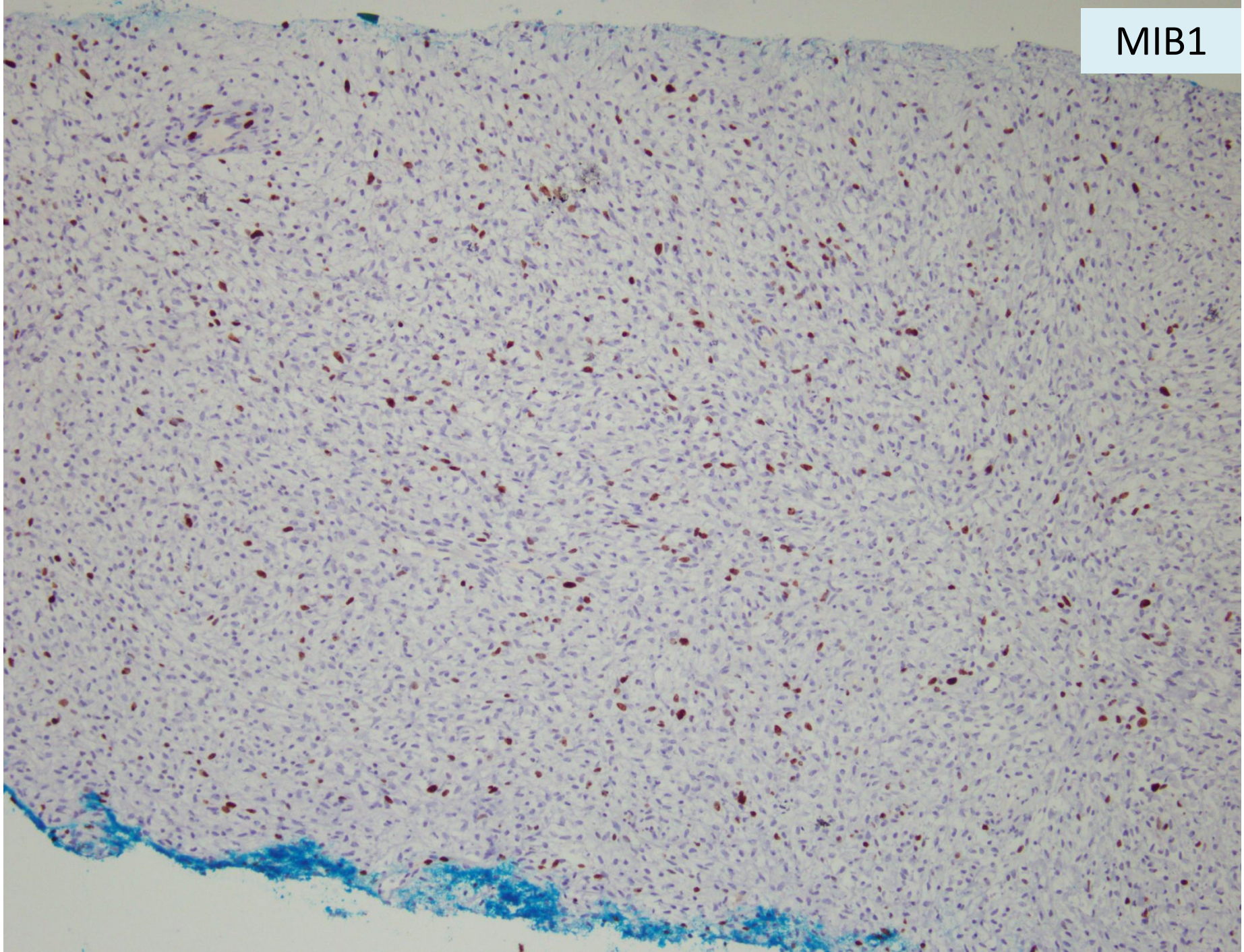
# Prior core biopsy



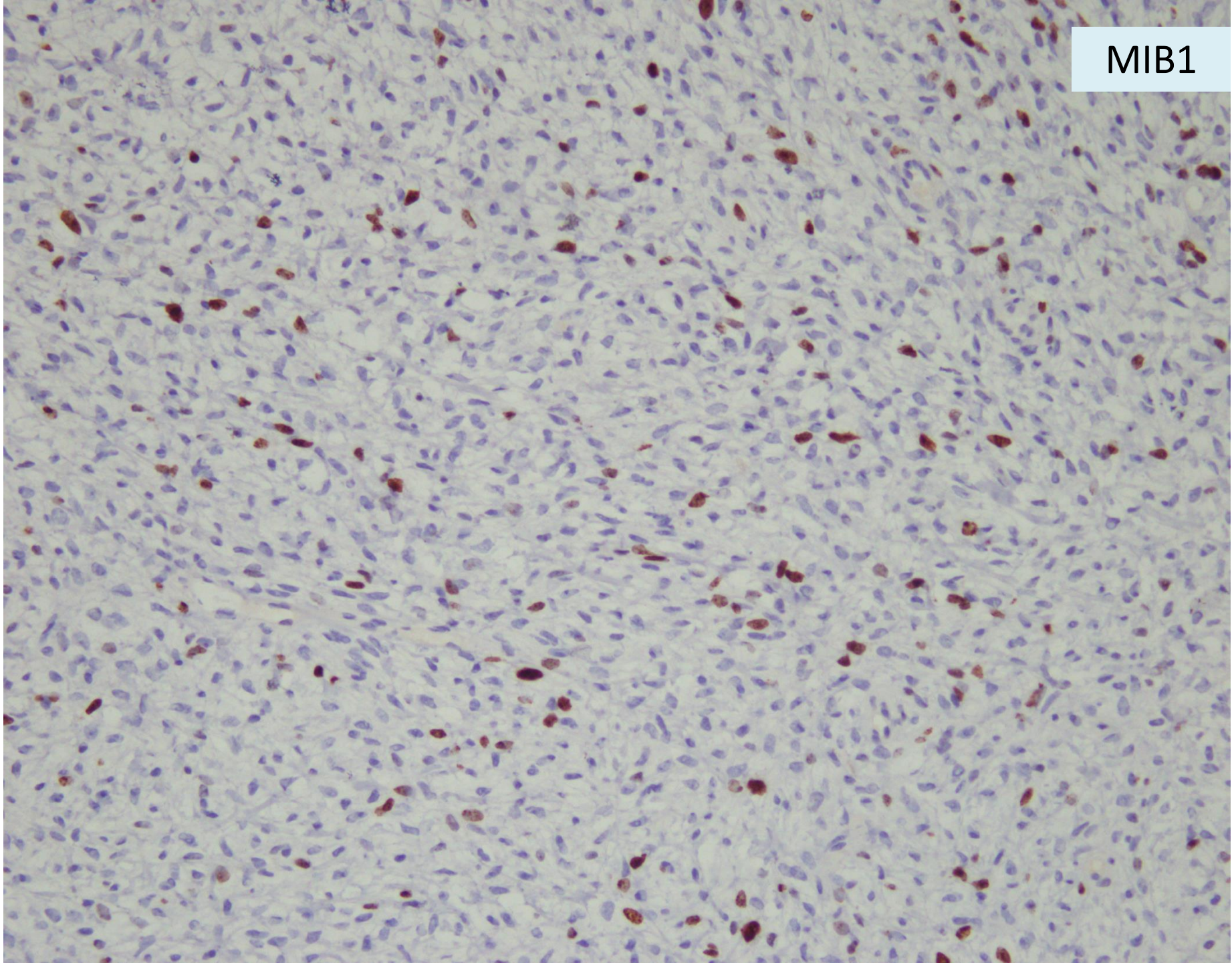




MIB1



MIB1



Right breast lump, excision:

*Borderline phyllodes tumour*



# Core biopsy diagnosis of fibroepithelial neoplasms

- Komenaka et al:
  - 57 core biopsies with fibroepithelial neoplasms.
  - Positive predictive value 83%.
  - Negative predictive value 93%.

*Arch Surg 2003;138:987-990*



# Core biopsy diagnosis of fibroepithelial neoplasms

- Jacobs et al:
  - 29 cases of fibroepithelial lesions with cellular stroma on core biopsies.
  - Histologic features, proliferation indices, p53.
  - Mildly increased stromal cellularity: FA.
  - Markedly cellular stroma: PT.
  - Moderate stromal cellularity: mitoses.
  - Ki67 & topoisomerase II $\alpha$  indices.

*Am J Clin Pathol 2005; 124: 342-354*





# Core biopsy diagnosis of fibroepithelial neoplasms

- Lee et al:

Features useful for diagnosis of PT on core biopsies:

- Stromal cellularity increased in at least 50% of the stroma.
- Stromal overgrowth (x10 field with no epithelium).
- Fragmentation.
- Adipose tissue within the stroma.

*Histopathology 2007; 51: 336-344*



# Core biopsy diagnosis of fibroepithelial neoplasms

- Resetkova et al:

Review of 101 cellular fibroepithelial lesions on core biopsies over a 6 year period:

- Consensus management at multidisciplinary conferences.
- Of 43 excised lesions:
  - 13 benign phyllodes tumours, 23 fibroadenomas, 7 benign cellular fibroepithelial lesions.
- No predictive value of clinical, radiologic or pathologic data.
- Follow-up alone was an appropriate alternative for a subset of patients.

*Breast J 2010 Nov-Dec;16(6):573-80.*



# Core biopsy diagnosis of fibroepithelial neoplasms

- Yasir et al:

Review of 64 cellular fibroepithelial lesions on core biopsies over an 11 year period (*Jan 2002 to Dec 2012*): Excision showed 27 (42.2%) phyllodes tumours (24 benign & 3 borderline).

- ~ Mitoses per 10 high power fields
- ~ Stromal overgrowth
- ~ Fragmentation
- ~ Adipose infiltration
- ~ Heterogeneity
- ~ Subepithelial condensation
- ~ Nuclear pleomorphism

*Statistically significant*

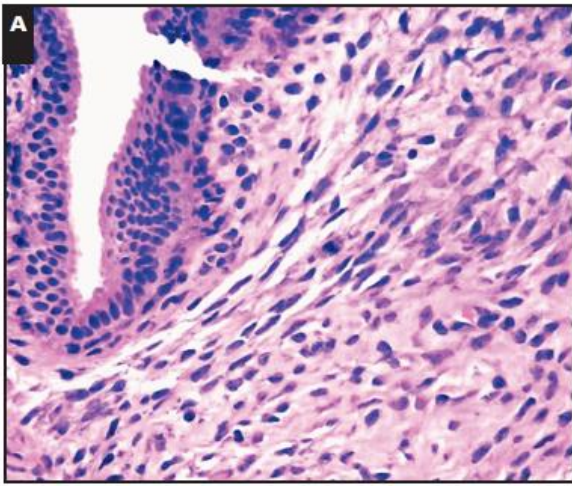
*Average number of histologic features was 3.9 in phyllodes tumour and 1.4 in cellular FA*

*Average number of mitoses was 3 per 10 hpf for phyllodes tumour and 0.8 for cellular FA*

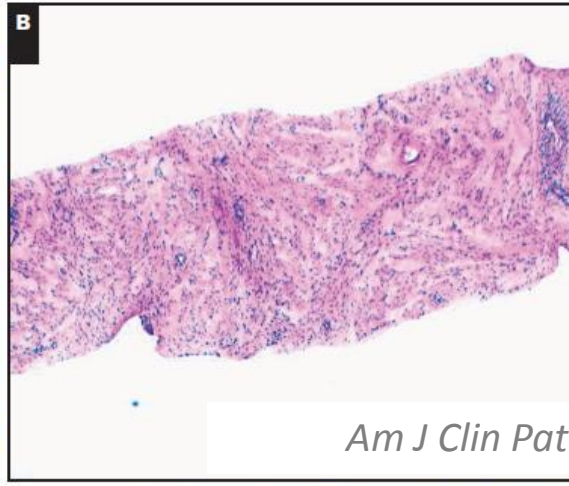
*Am J Clin Pathol 2014; 142: 362-369.*



Mitoses

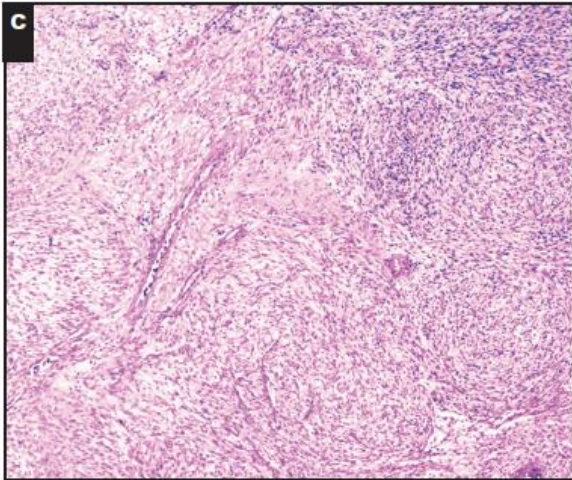


Overgrowth

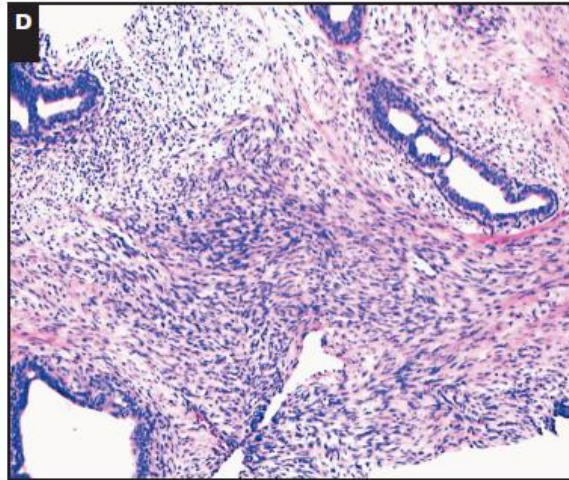


*Am J Clin Pathol 2014; 142: 362-369*

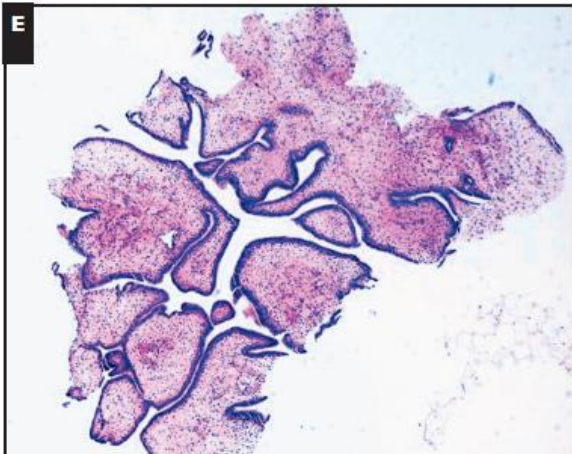
Overgrowth



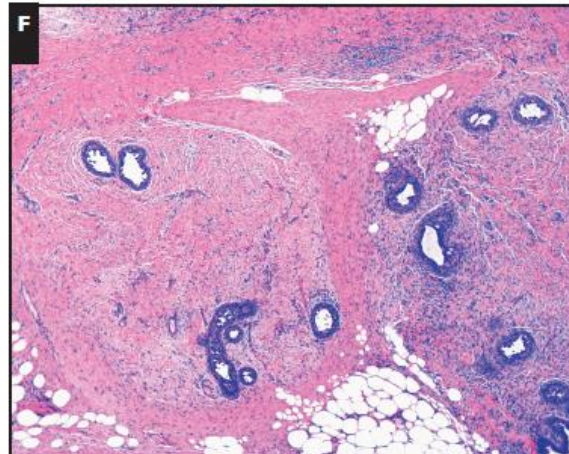
Stromal hypercellularity



Stromal fragmentation



Adipose infiltration



# Core biopsy diagnosis of fibroepithelial neoplasms

- Jara-Lazaro et al:

Features exclusively predicting PT on core biopsies:

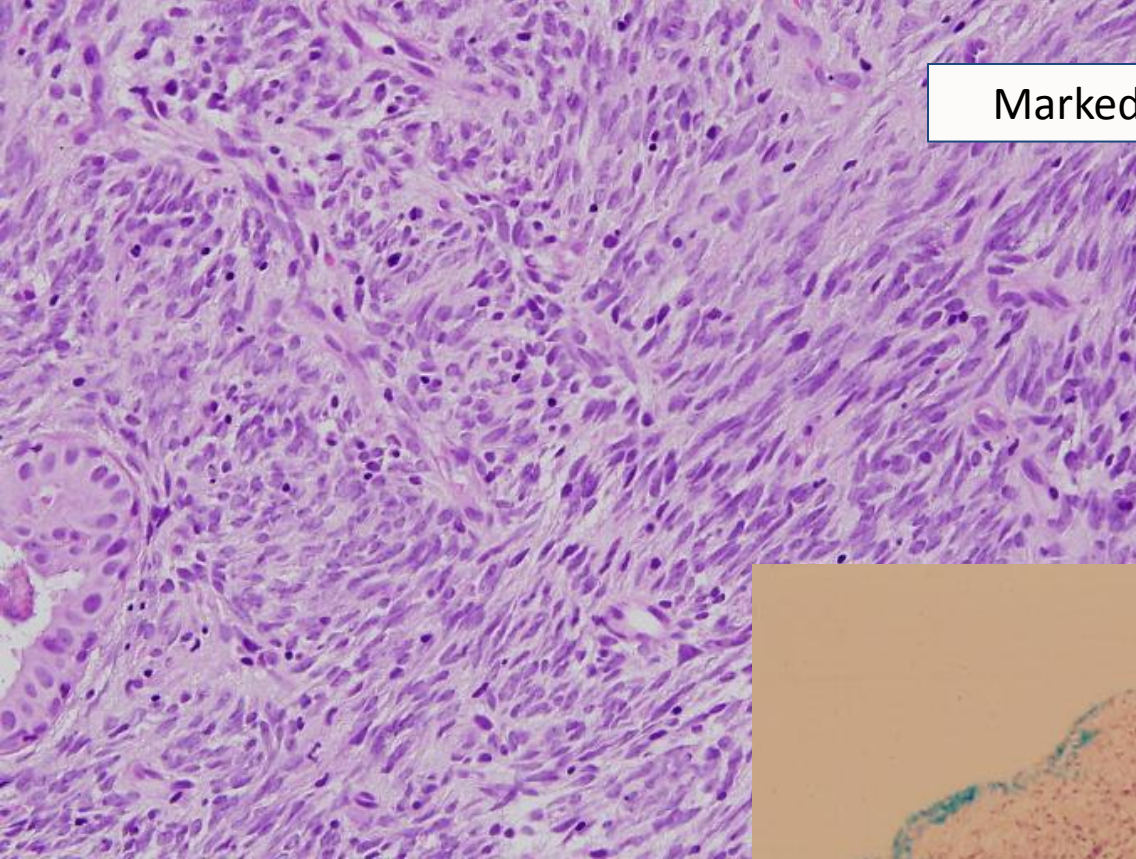
- Marked stromal cellularity.
- Marked stromal nuclear atypia.
- Stromal overgrowth.
- Mitoses  $\geq 2$  per 10 hpf.
- Ill-defined lesional borders.

Immunohistochemical markers:

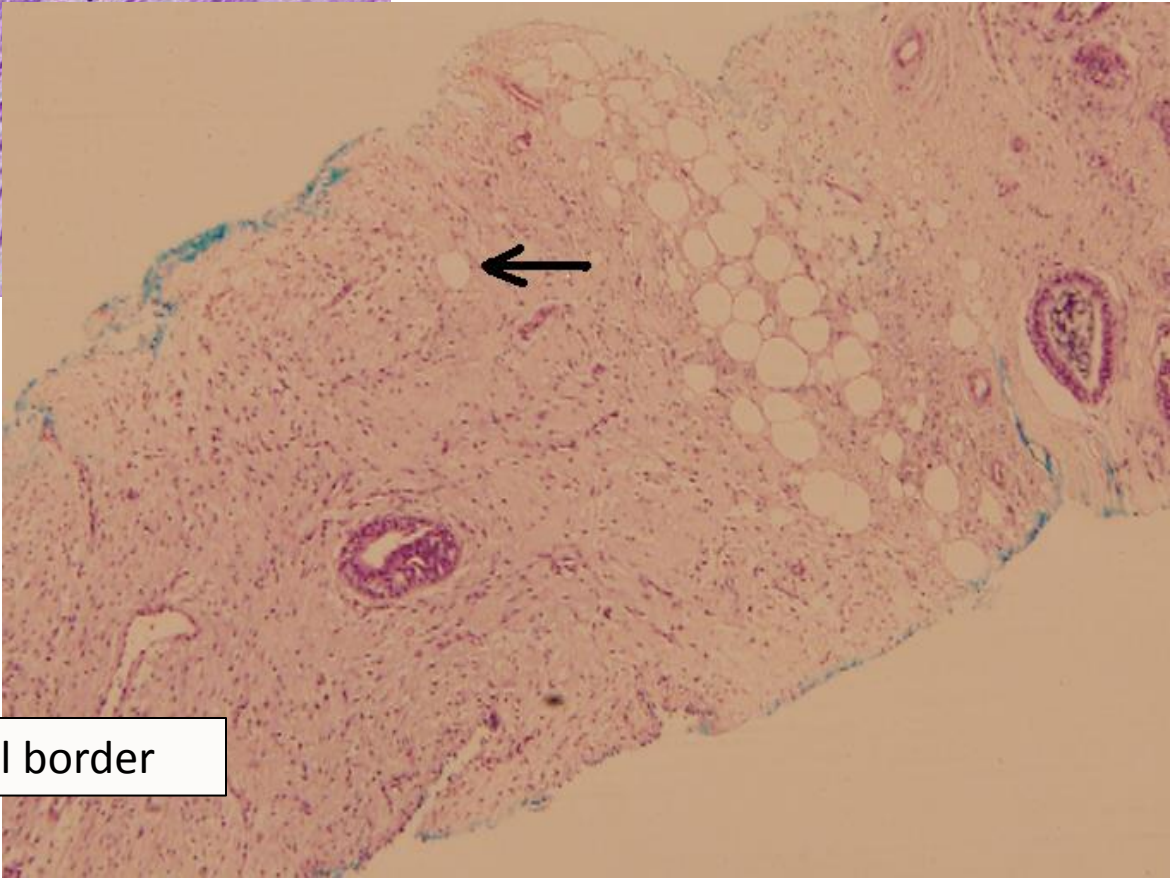
- Ki67  $\geq 5\%$ .
- Topoisomerase II $\alpha$   $\geq 5\%$ .
- Reduced or patchy CD34 staining.

*Histopathology 2010; 57: 220-232*



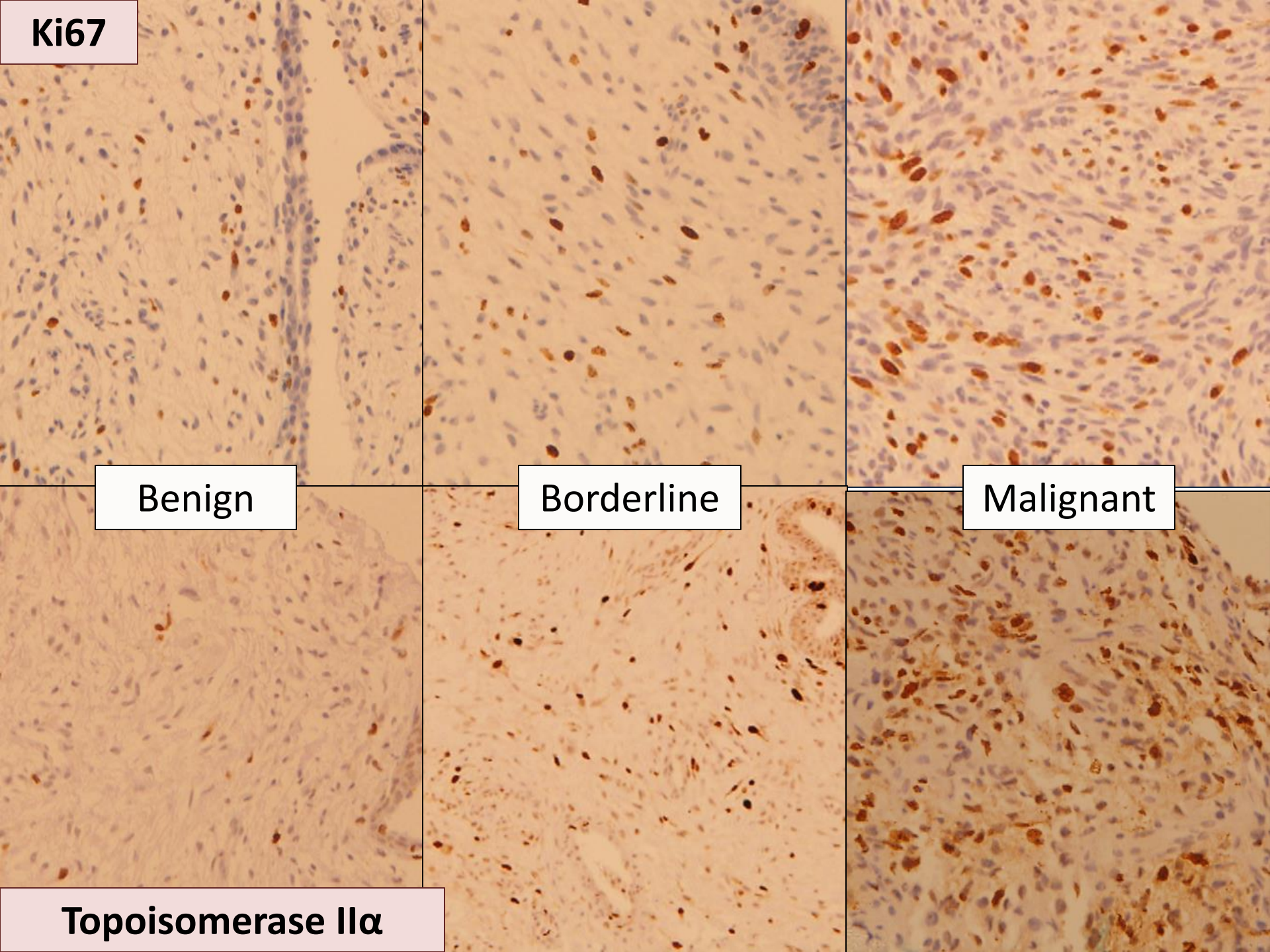


Marked stromal cellularity



Ill defined lesional border

**Ki67**



**Benign**

**Borderline**

**Malignant**

**Topoisomerase II $\alpha$**

# Biological markers

- Proliferative activity.
- Microvessel density.
- CD34.
- CD10.
- Endothelins.
- p53.
- CD117 (c-kit).
- Glycosaminoglycans.
- VEGF
- HoxB13
- etc

*Not yet primetime!*





# Practical points

- Core biopsies of fibroepithelial neoplasms:
  - Benign, consistent with FA ~ may leave alone.
  - Benign, favouring or unable to rule out phyllodes tumour ~ excise.
  - Benign, 2 cm or larger ~ consider excision (*institutional practice*).
  - Benign, but patient experiences rapid tumour growth ~ excise.
  - Malignant ~ resection.



 Breast  
Pathology  
Course 2014

