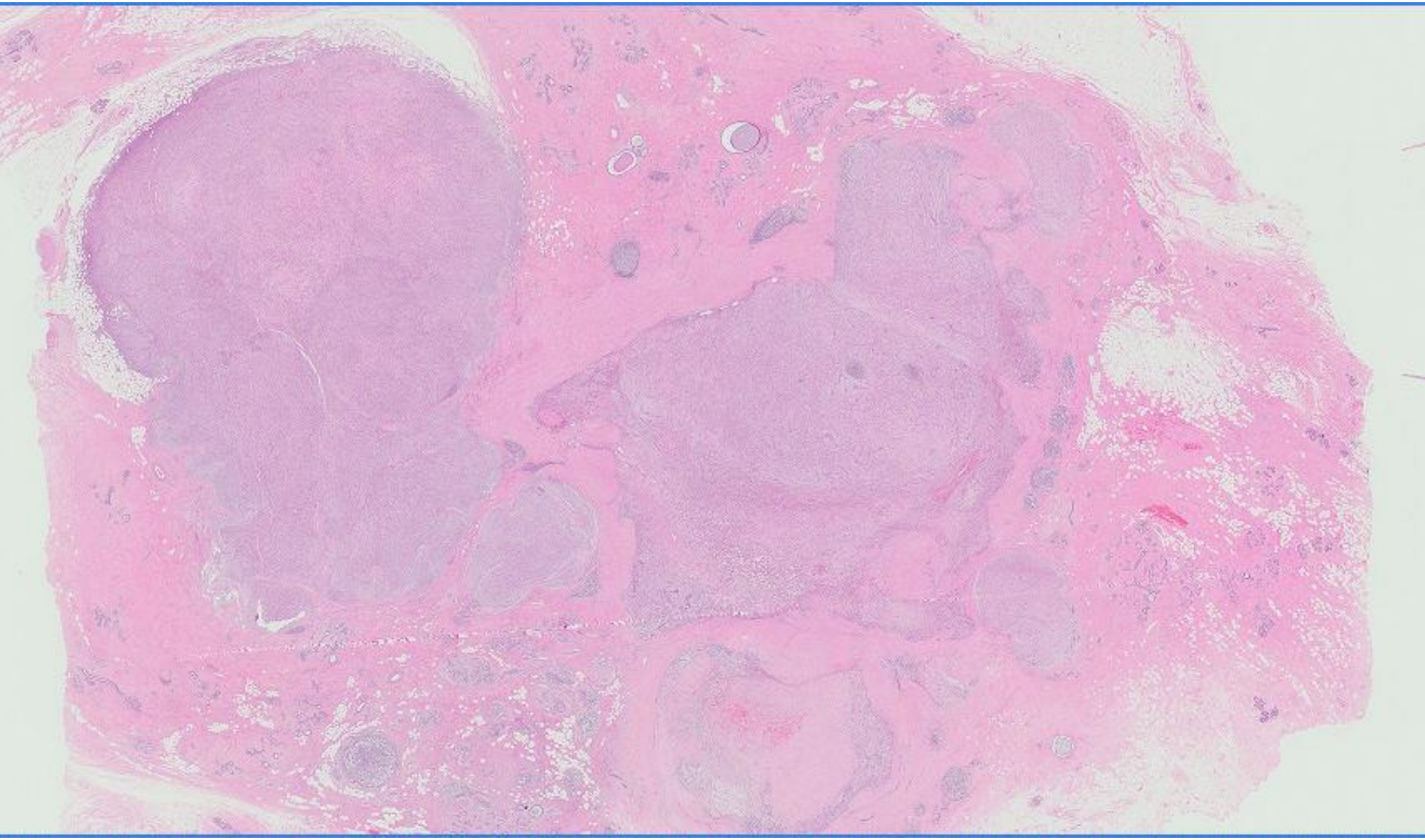
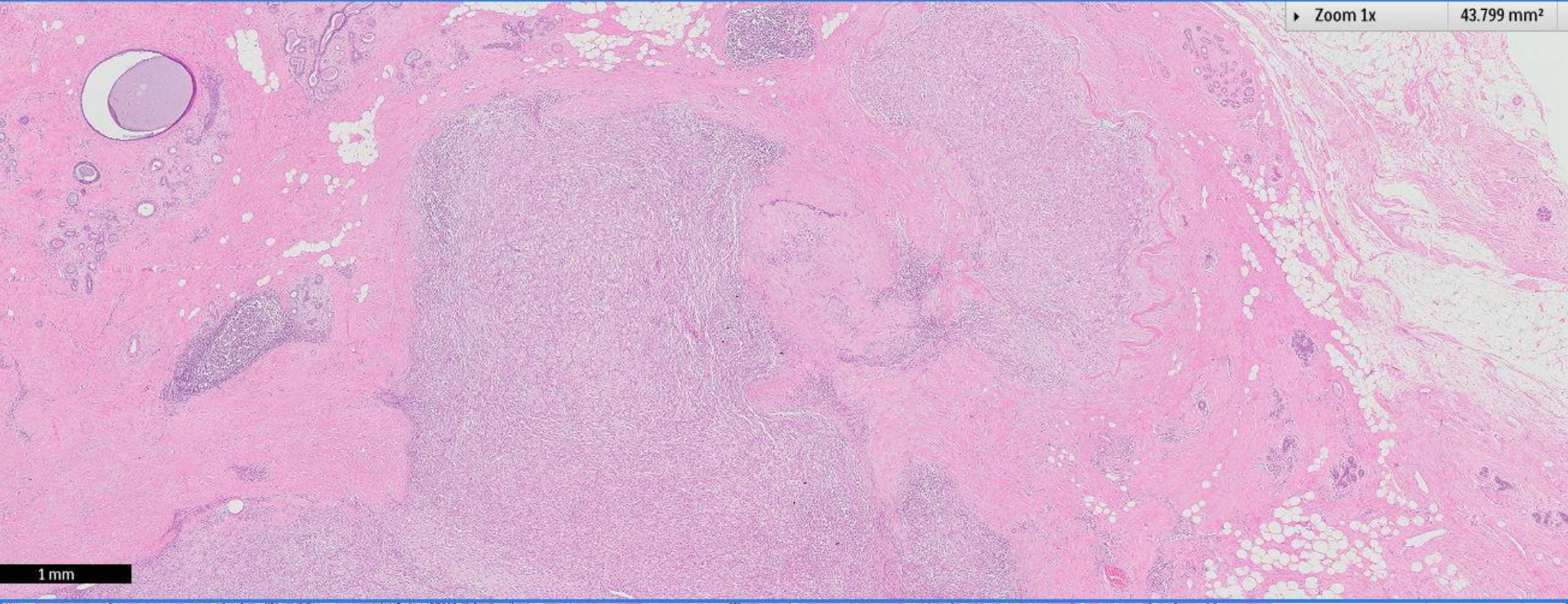
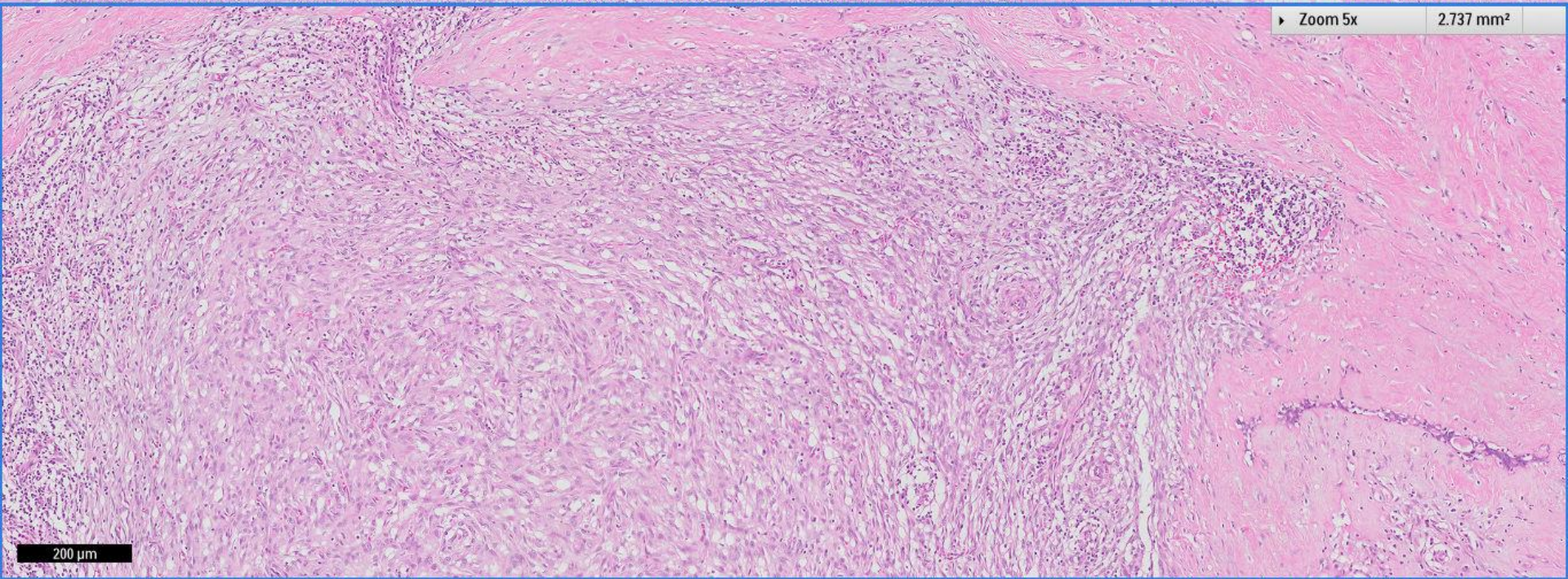
Breast Pathology Course 2016

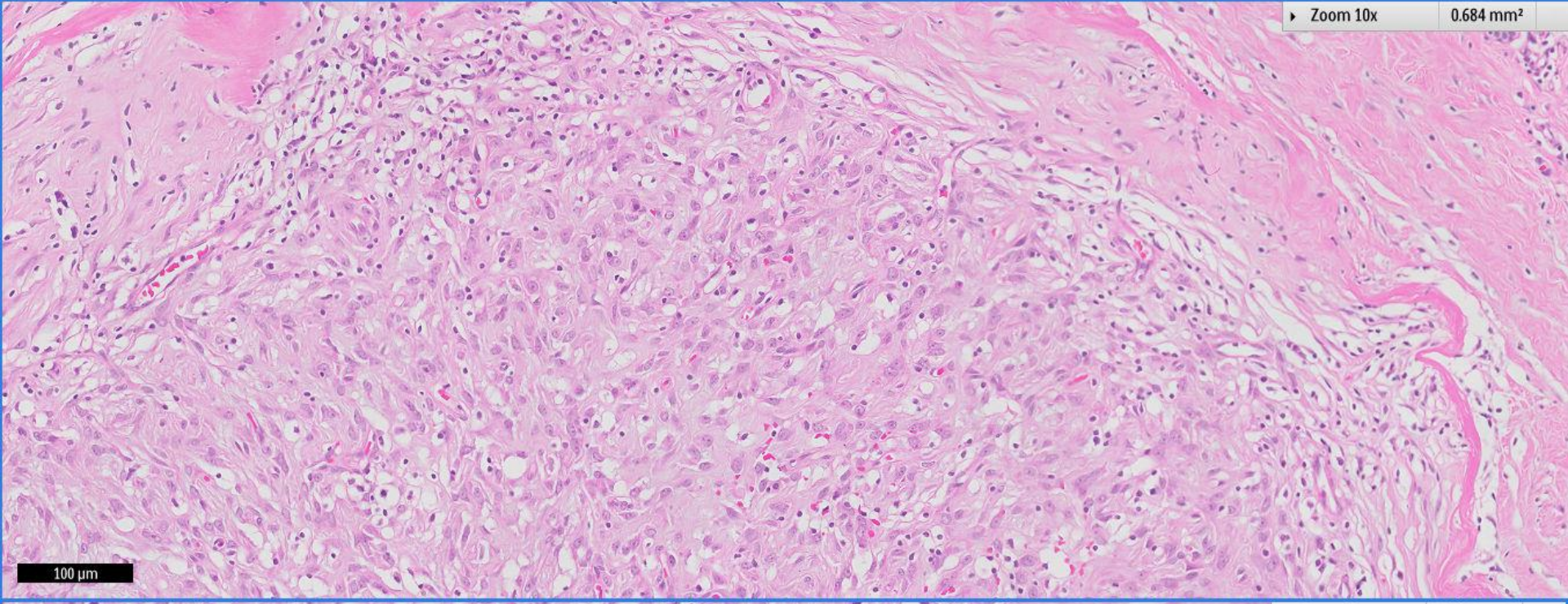
Case 27

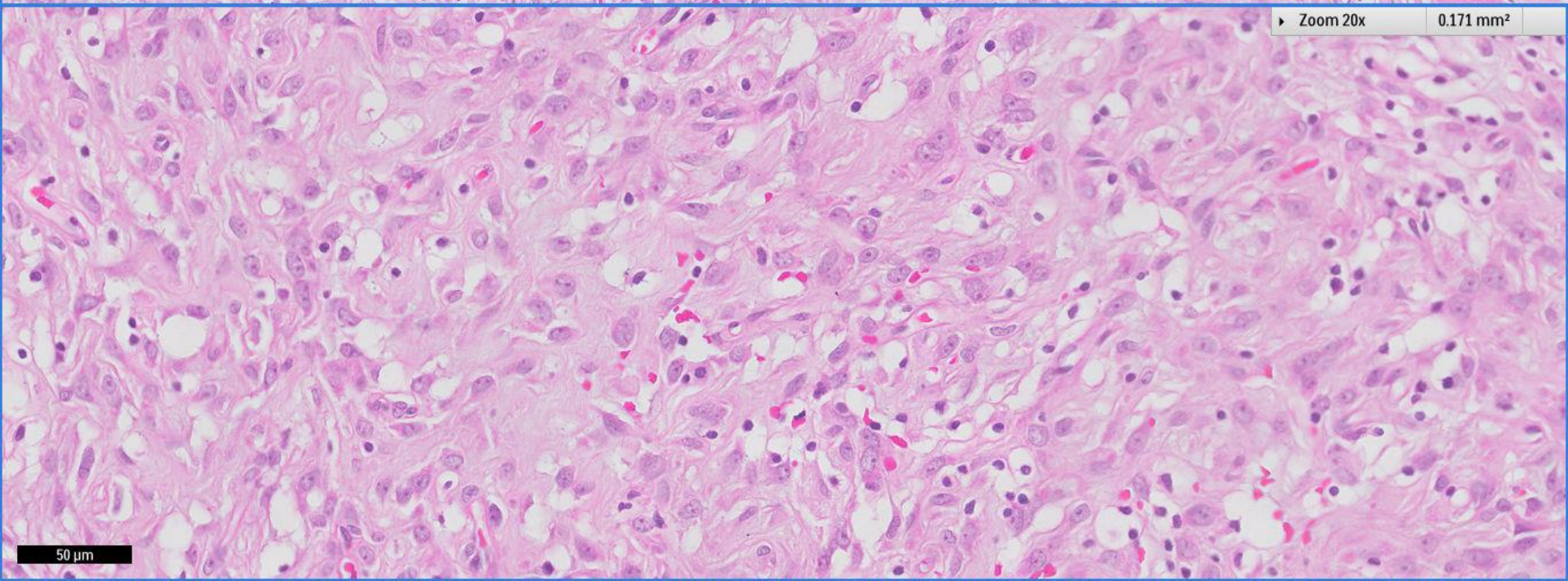
51 year old Chinese woman underwent wide excision of a left breast lump after core biopsy disclosed a malignant spindle cell tumour.

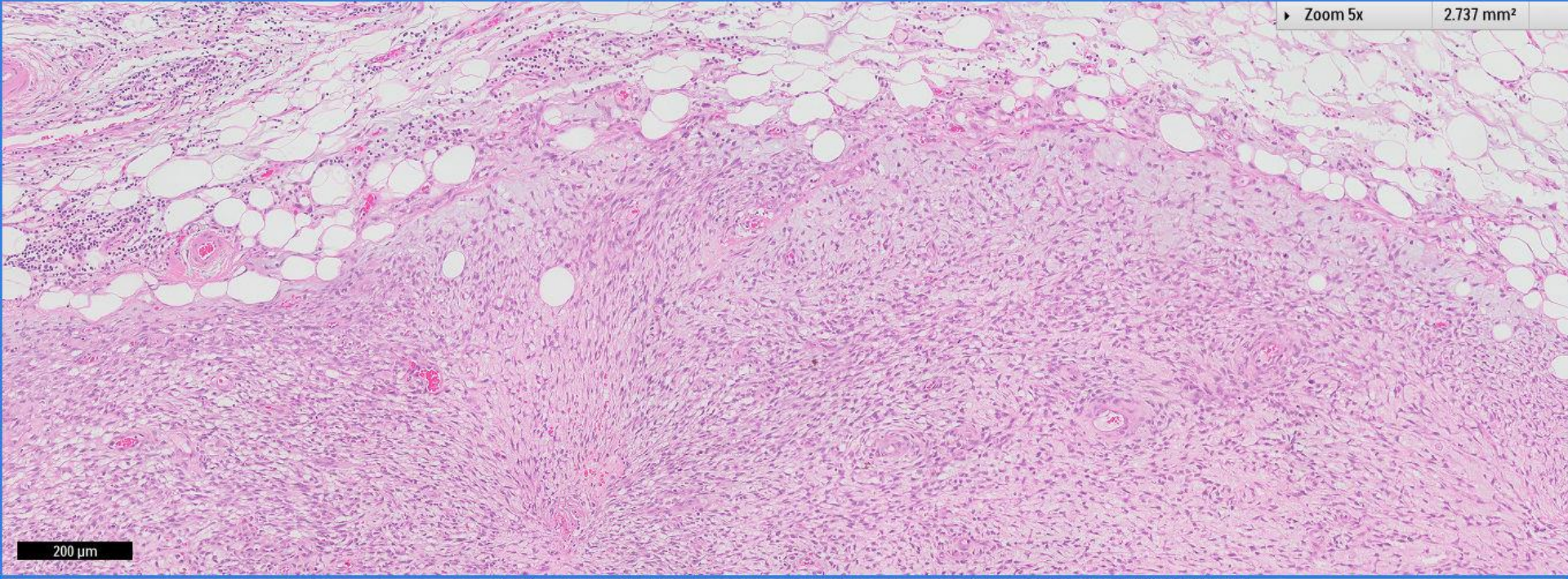


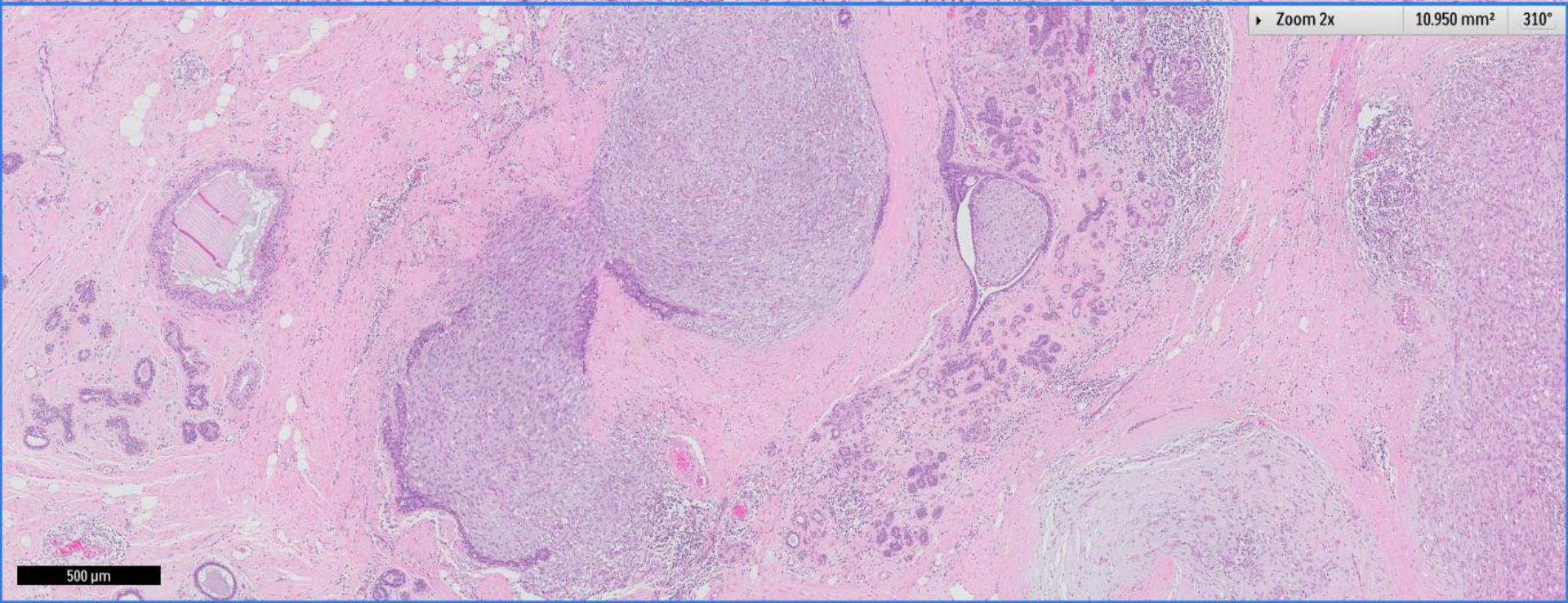

Zoom 1x
43.799 mm²
1 mm


Zoom 5x
2.737 mm²
200 µm

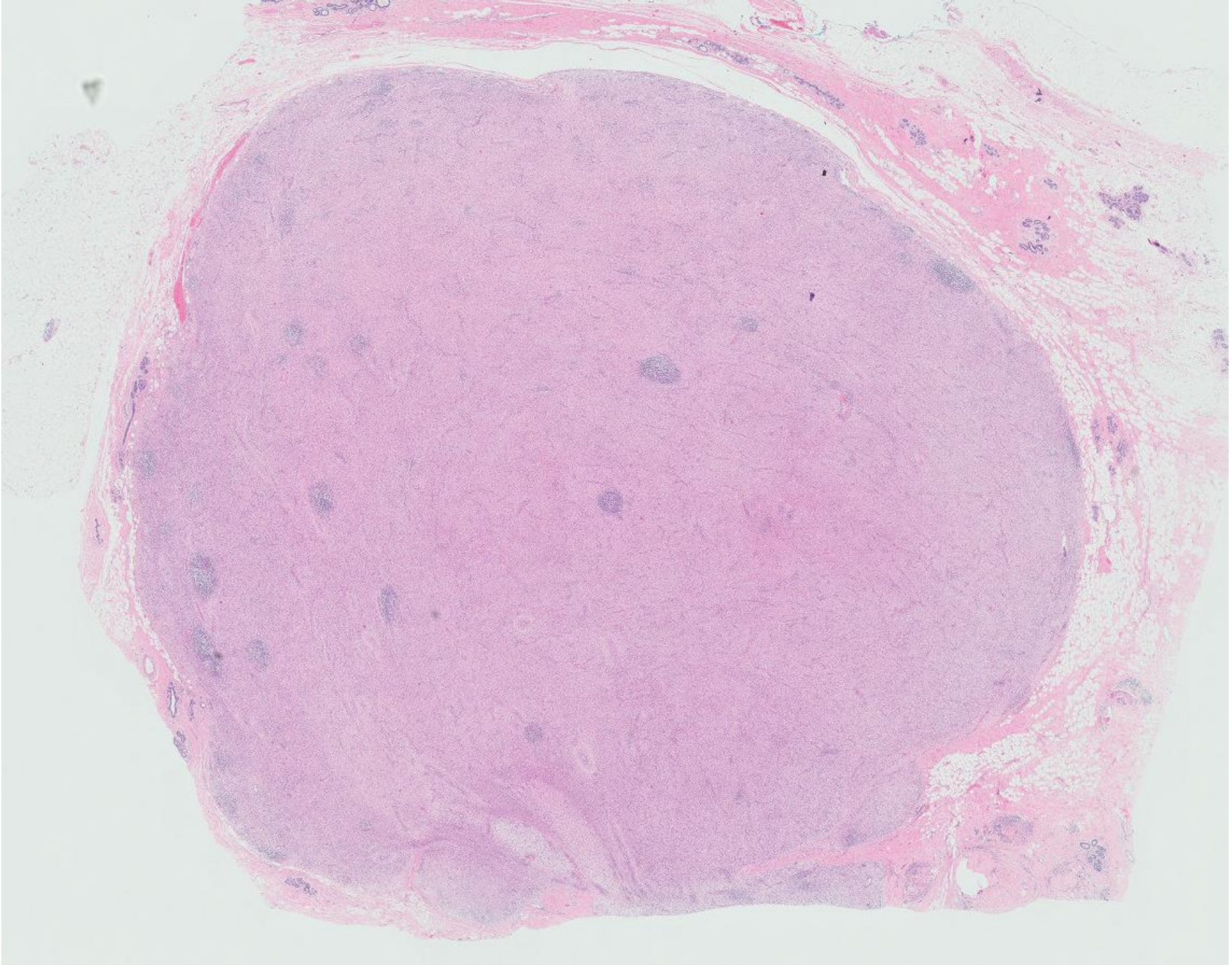

Zoom 10x
0.684 mm²
100 µm

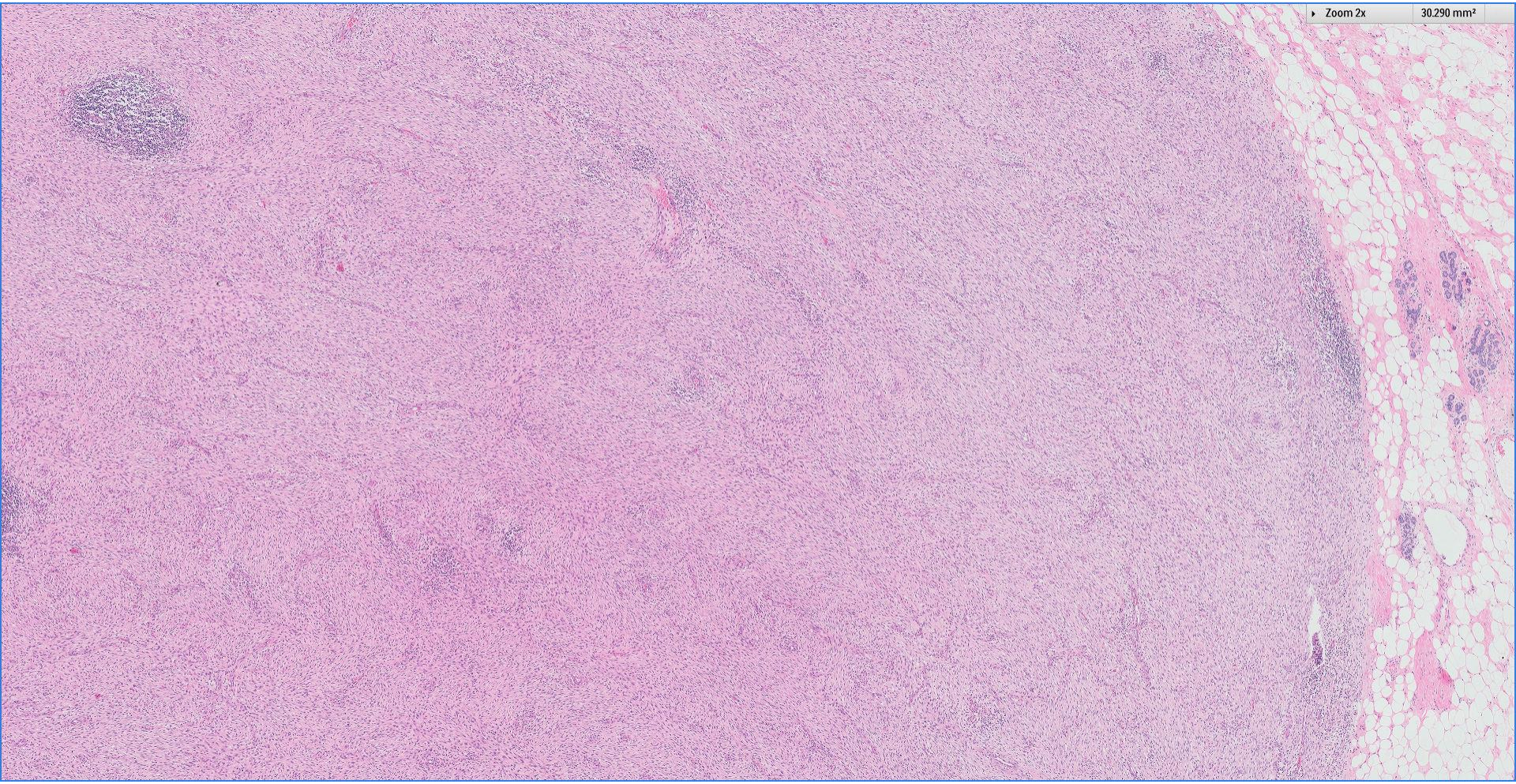

Zoom 20x
0.171 mm²
50 µm

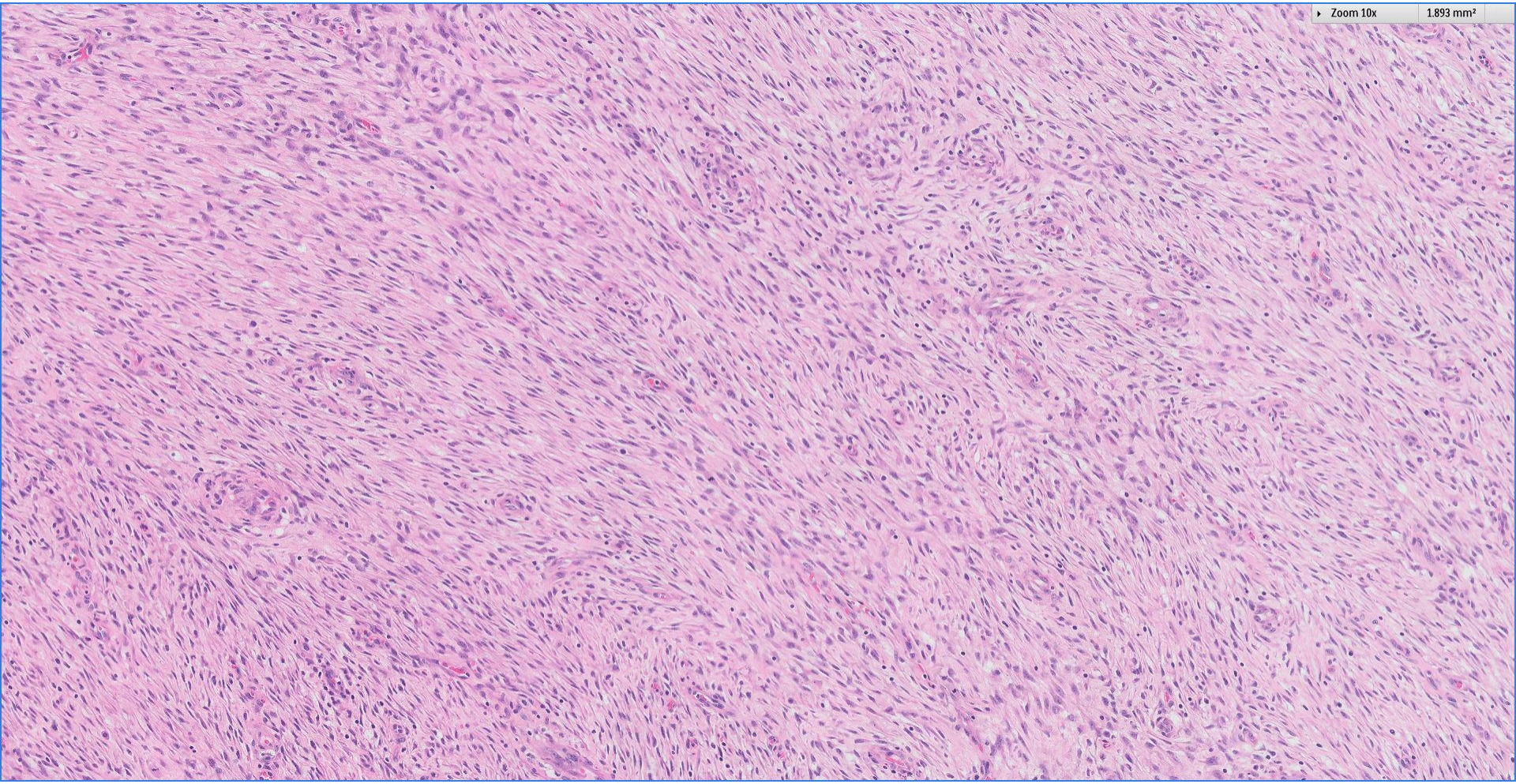

Zoom 5x
2.737 mm²
200 µm

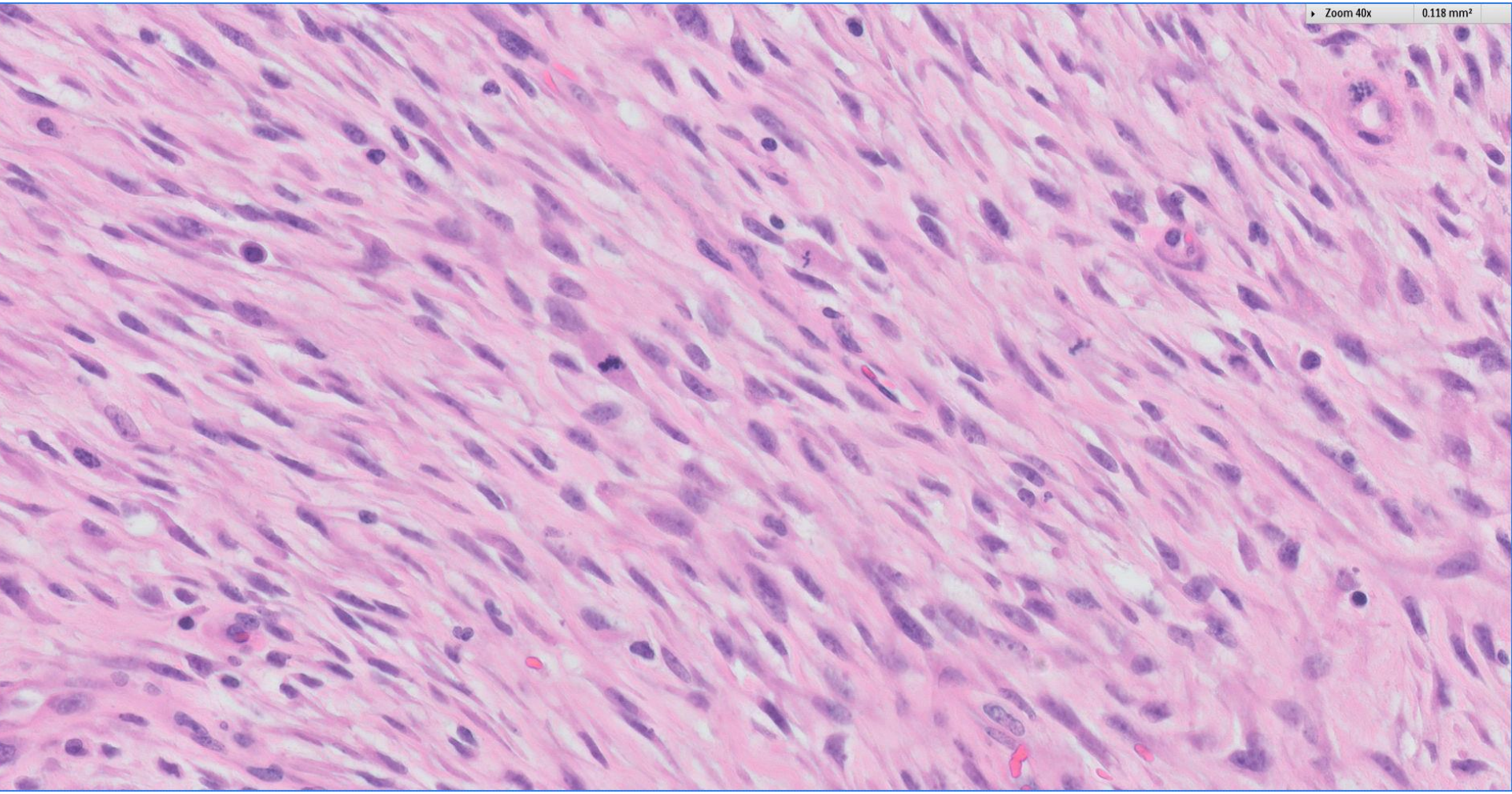

Zoom 2x
10.950 mm²
310°
500 µm

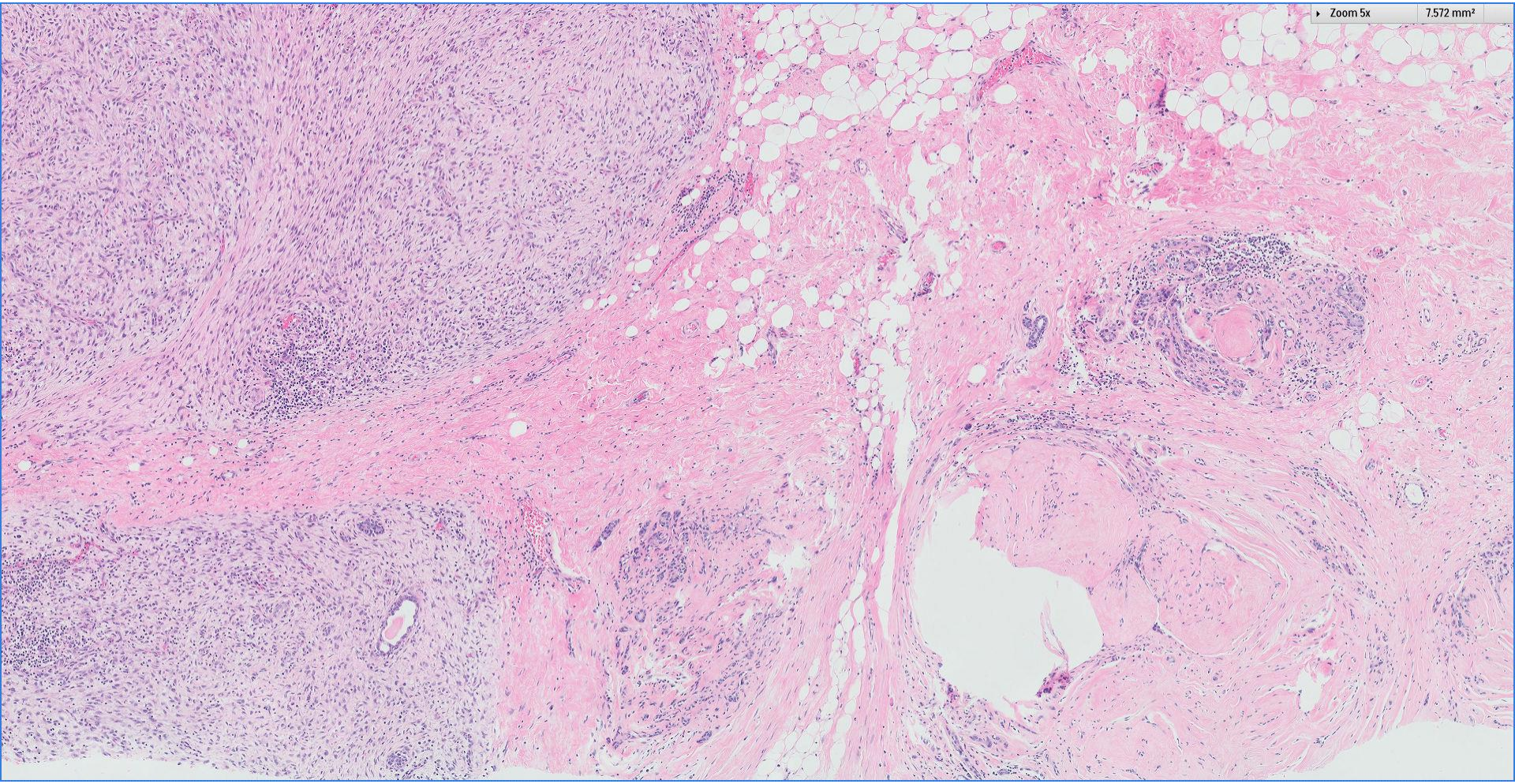
Esplanade, Marina Bay Sands

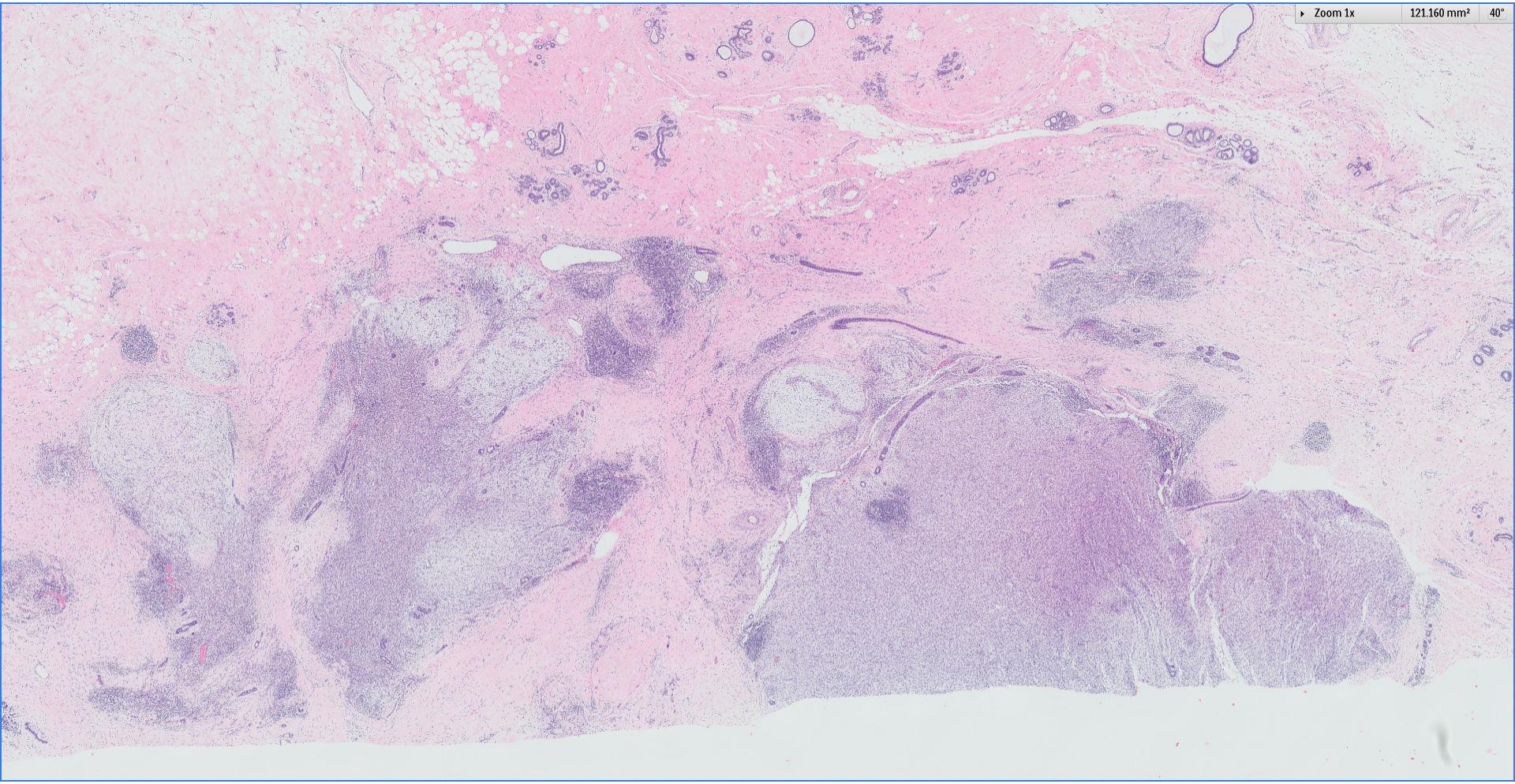


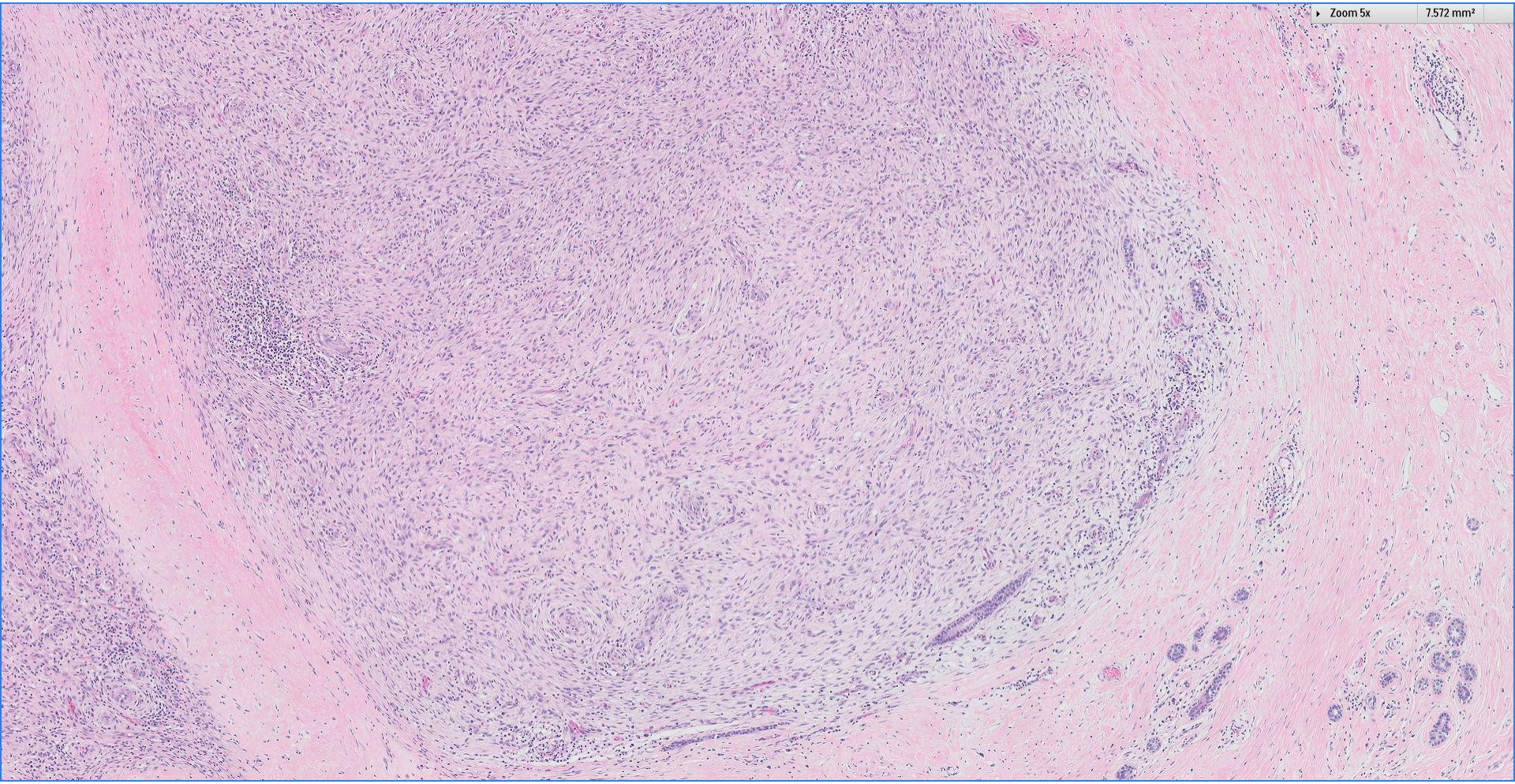

Zoom 2x
30.290 mm²

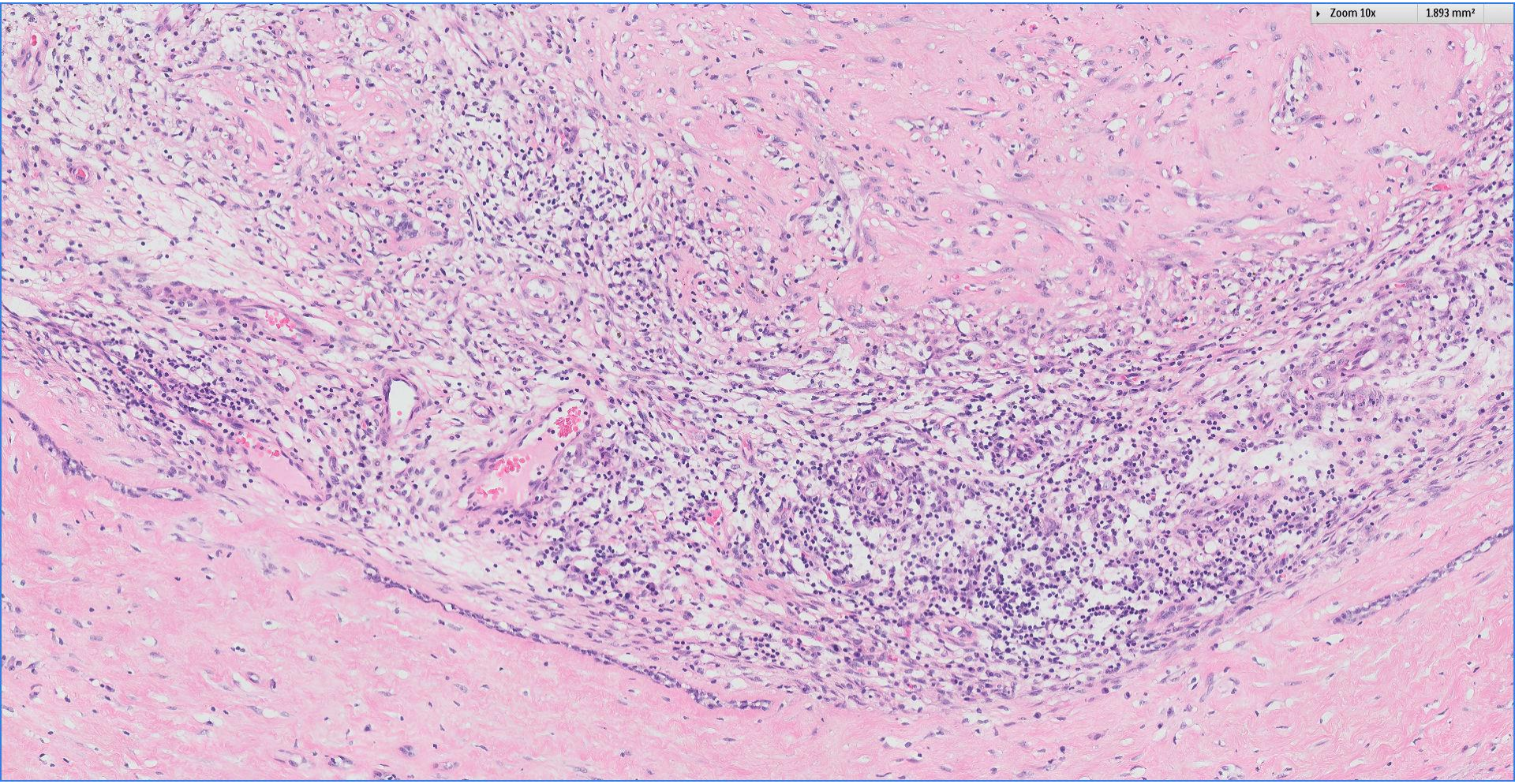

Zoom 10x
1.893 mm²

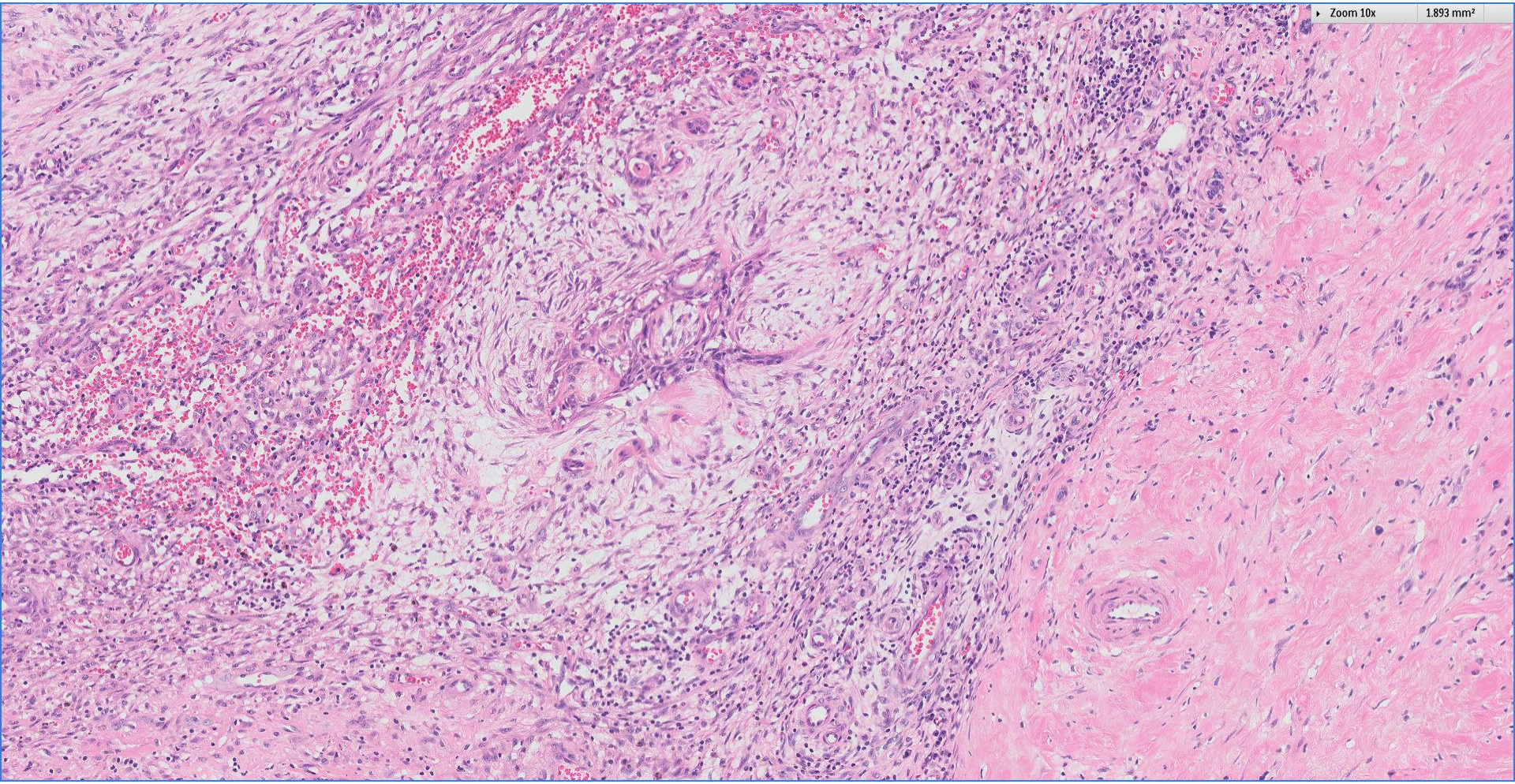

Zoom 40x
0.118 mm²

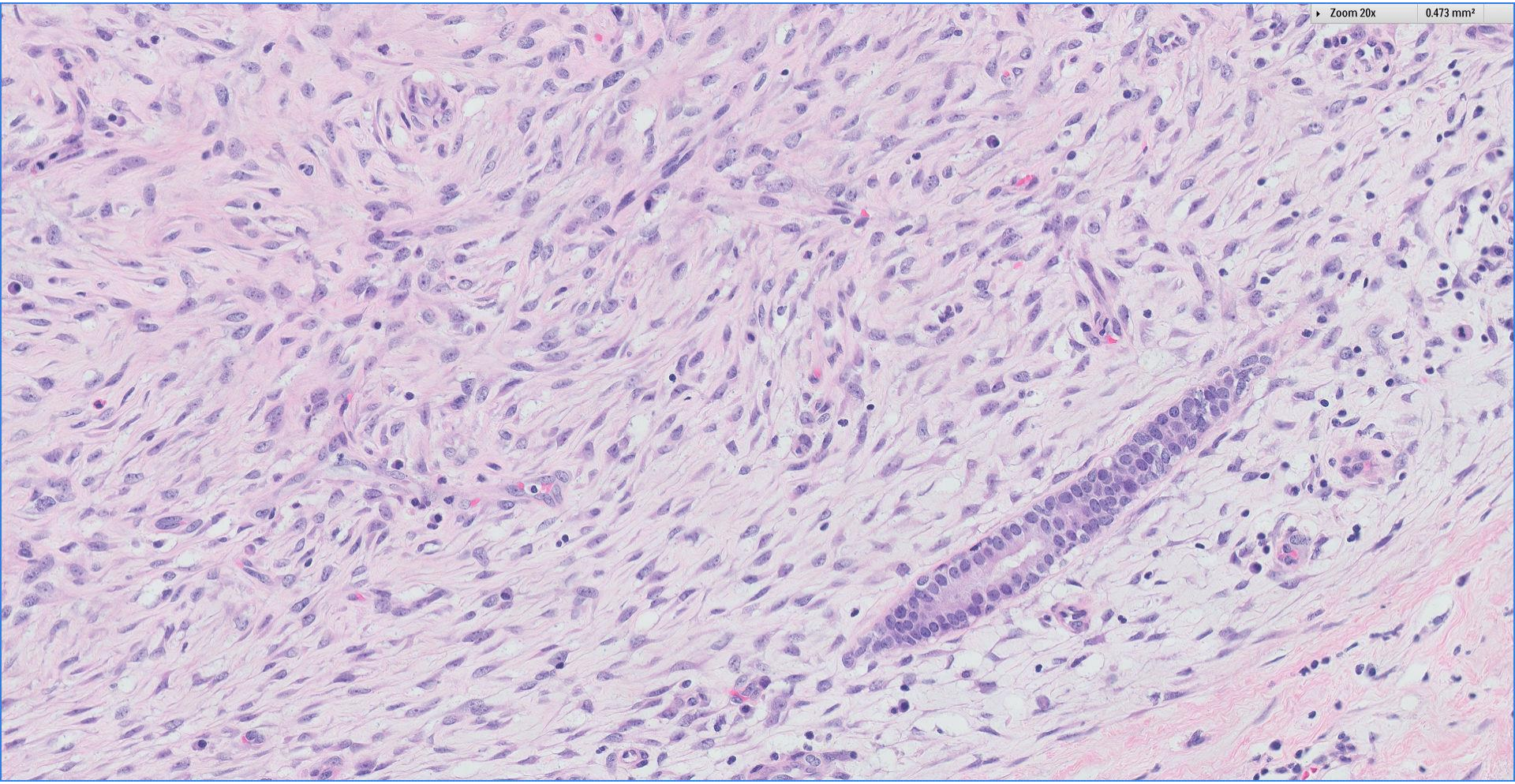

Zoom 5x
7.572 mm²


Zoom 1x
121.160 mm²
40°

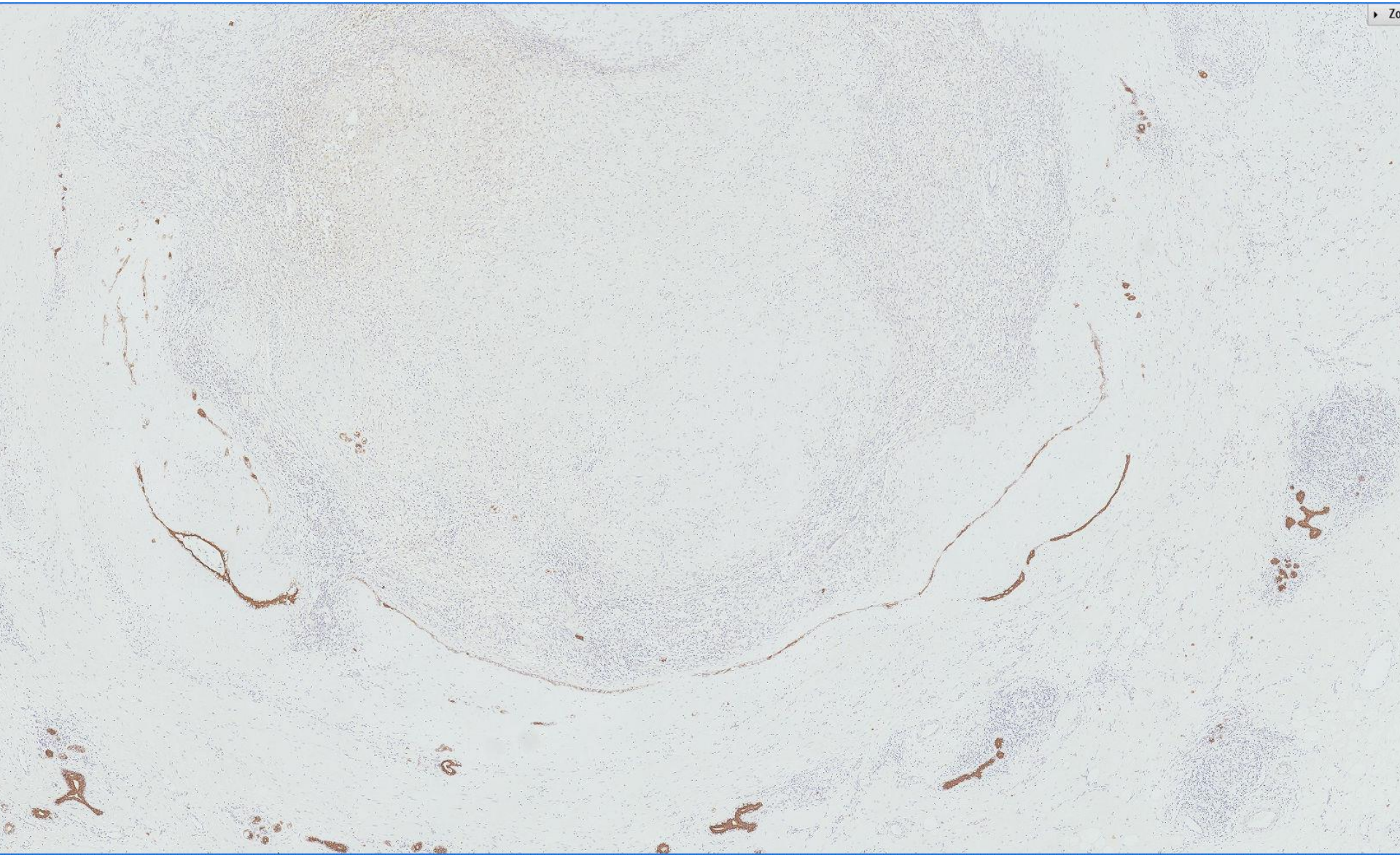

Zoom 5x
7.572 mm²


Zoom 10x
1.893 mm²


Zoom 10x
1.893 mm²


Zoom 20x
0.473 mm²

AE1/3



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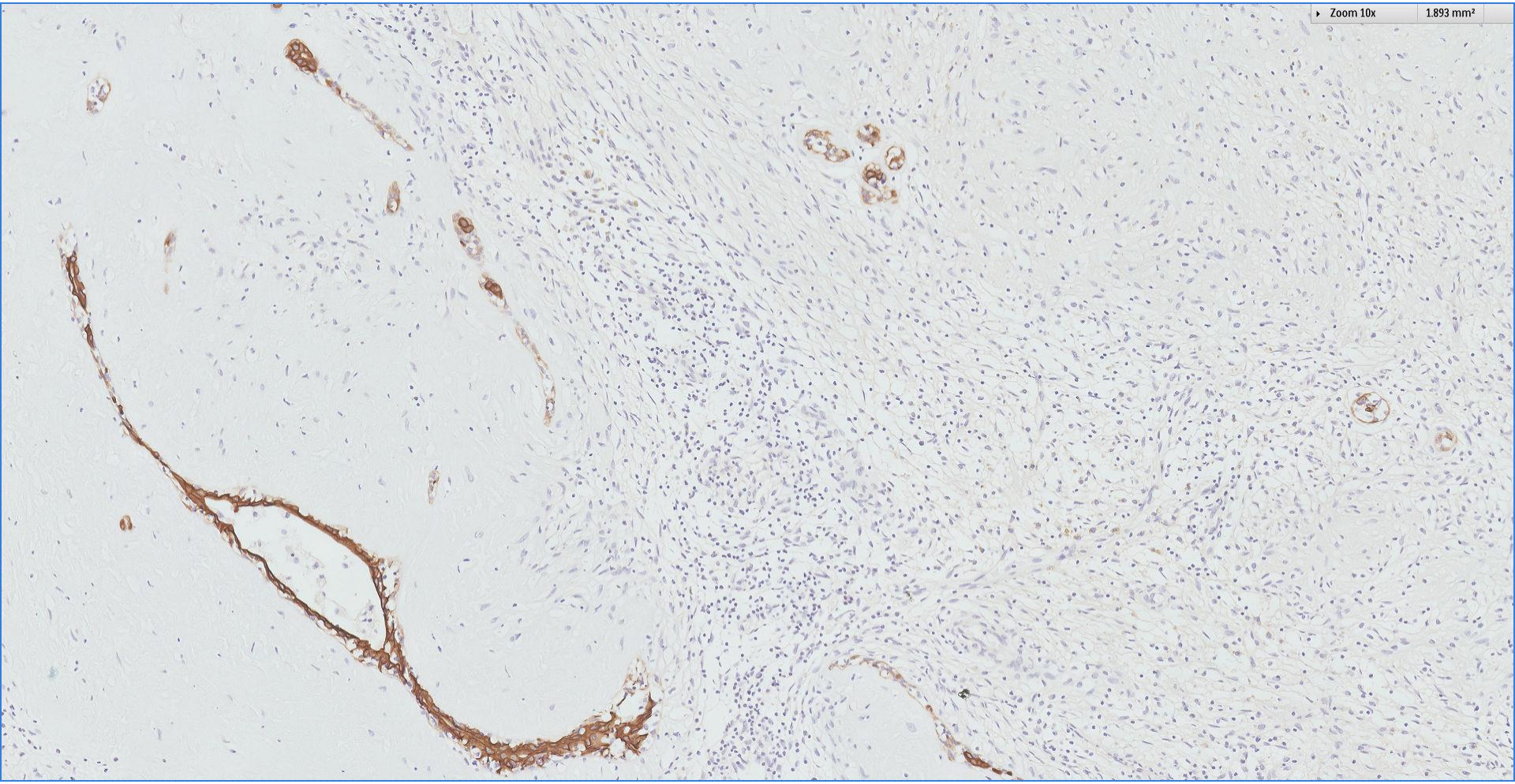
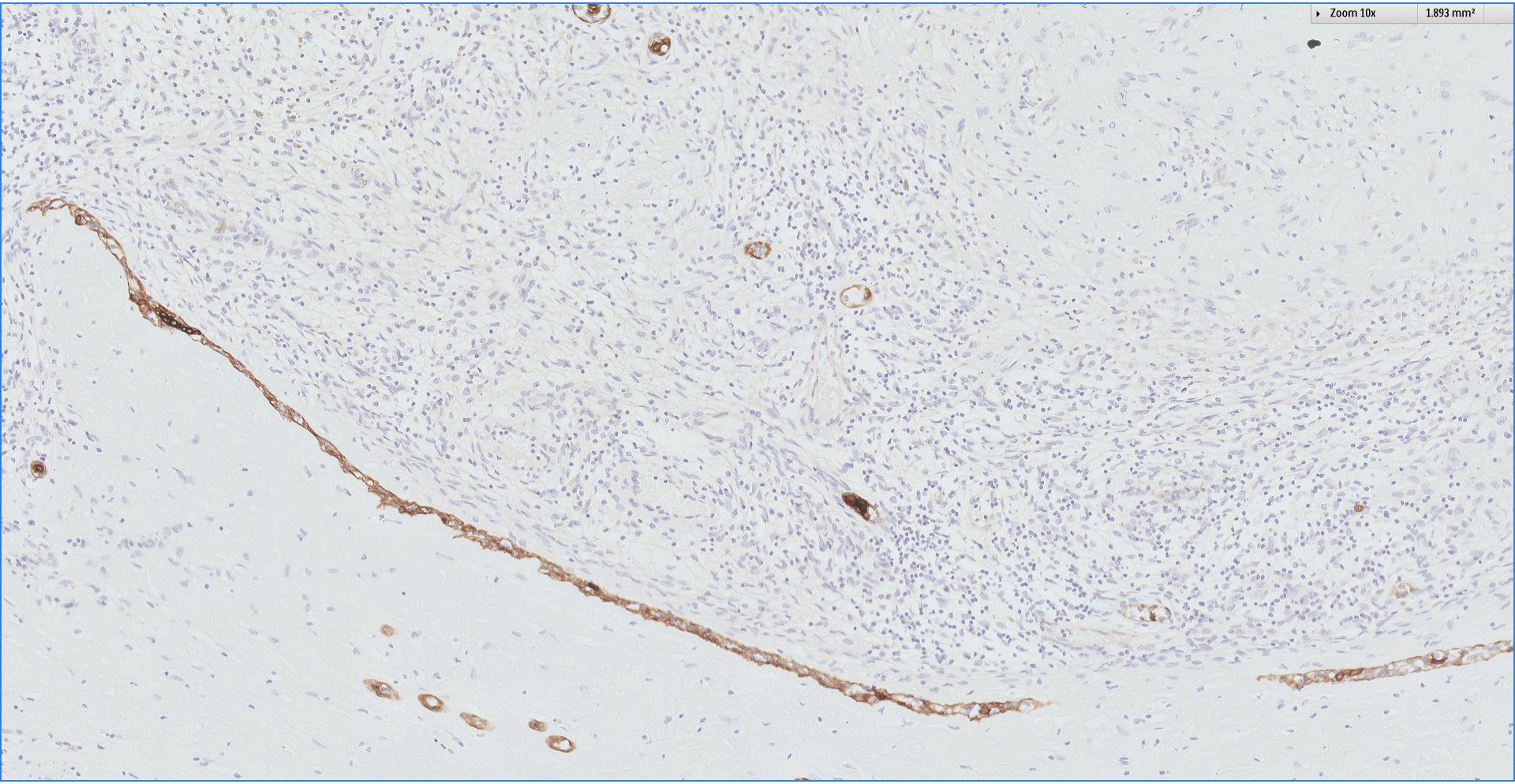


Cam 5.2



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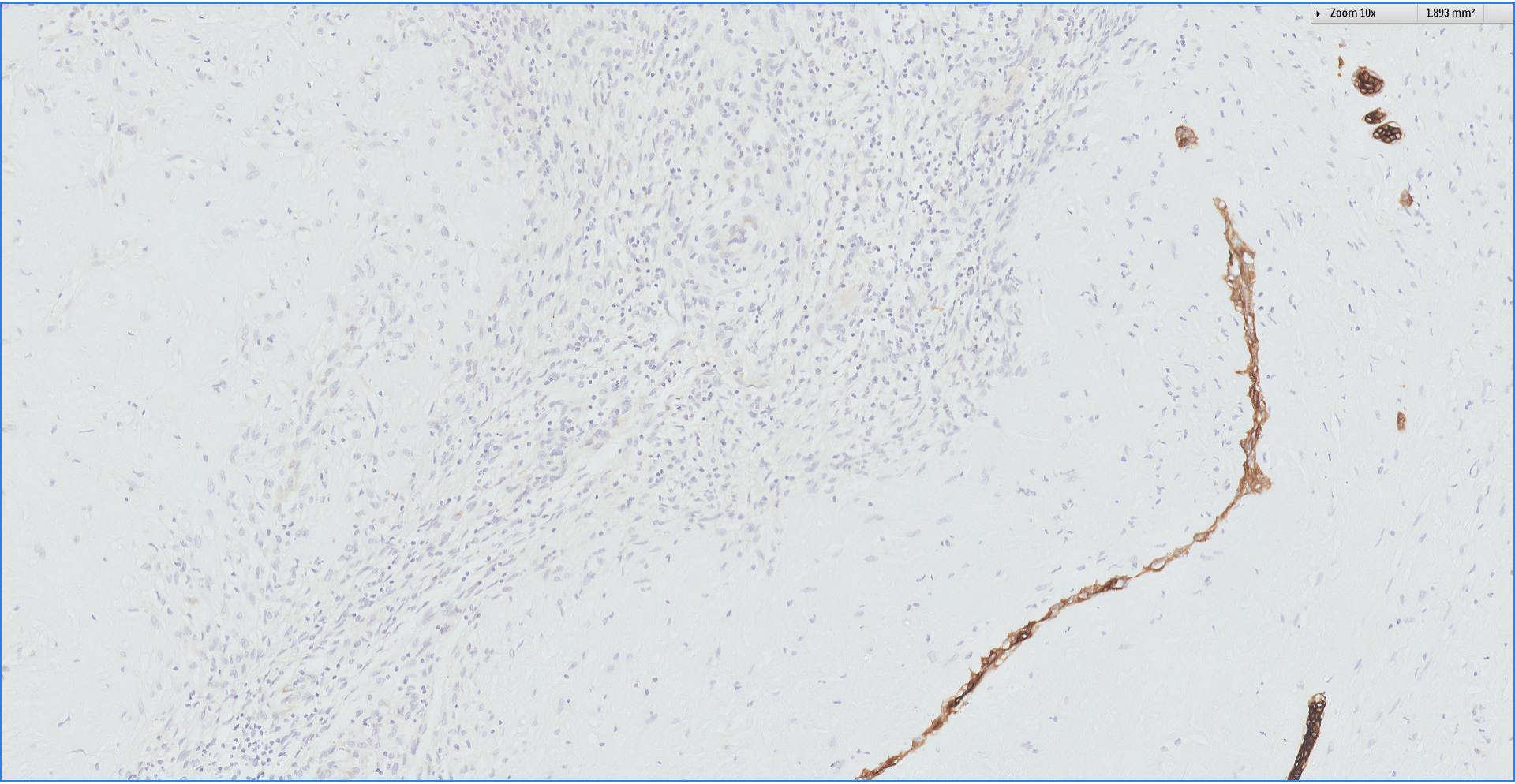
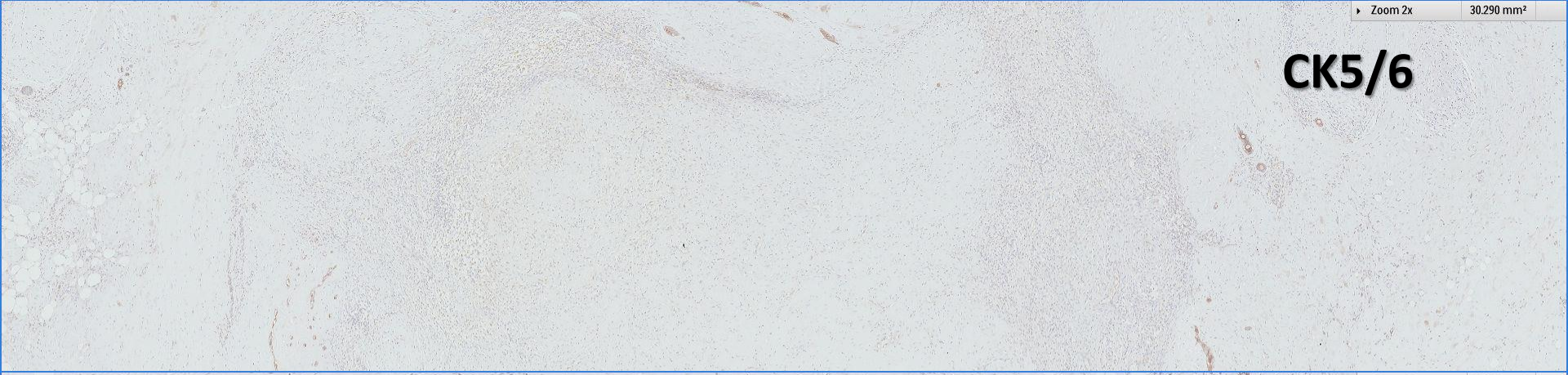
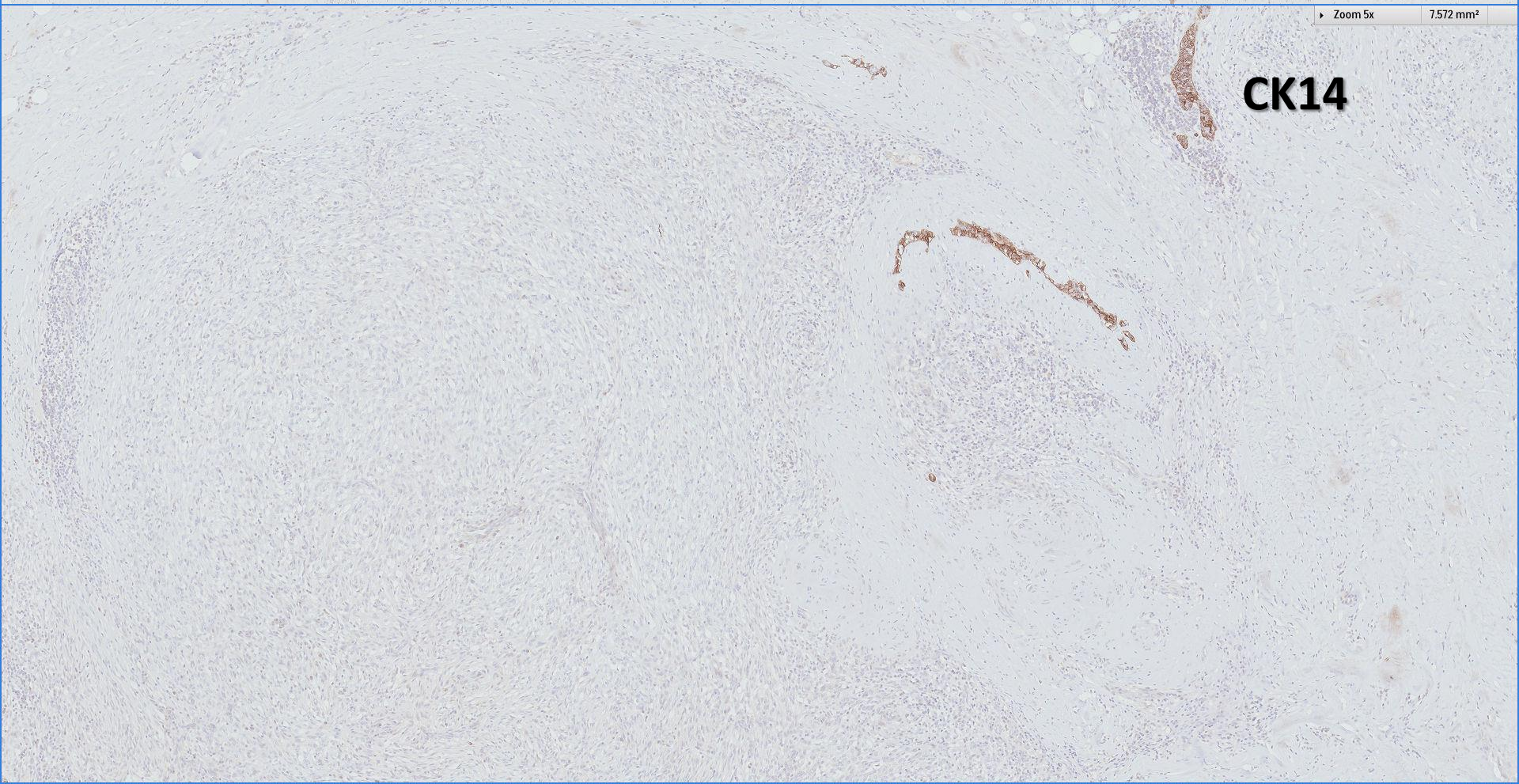
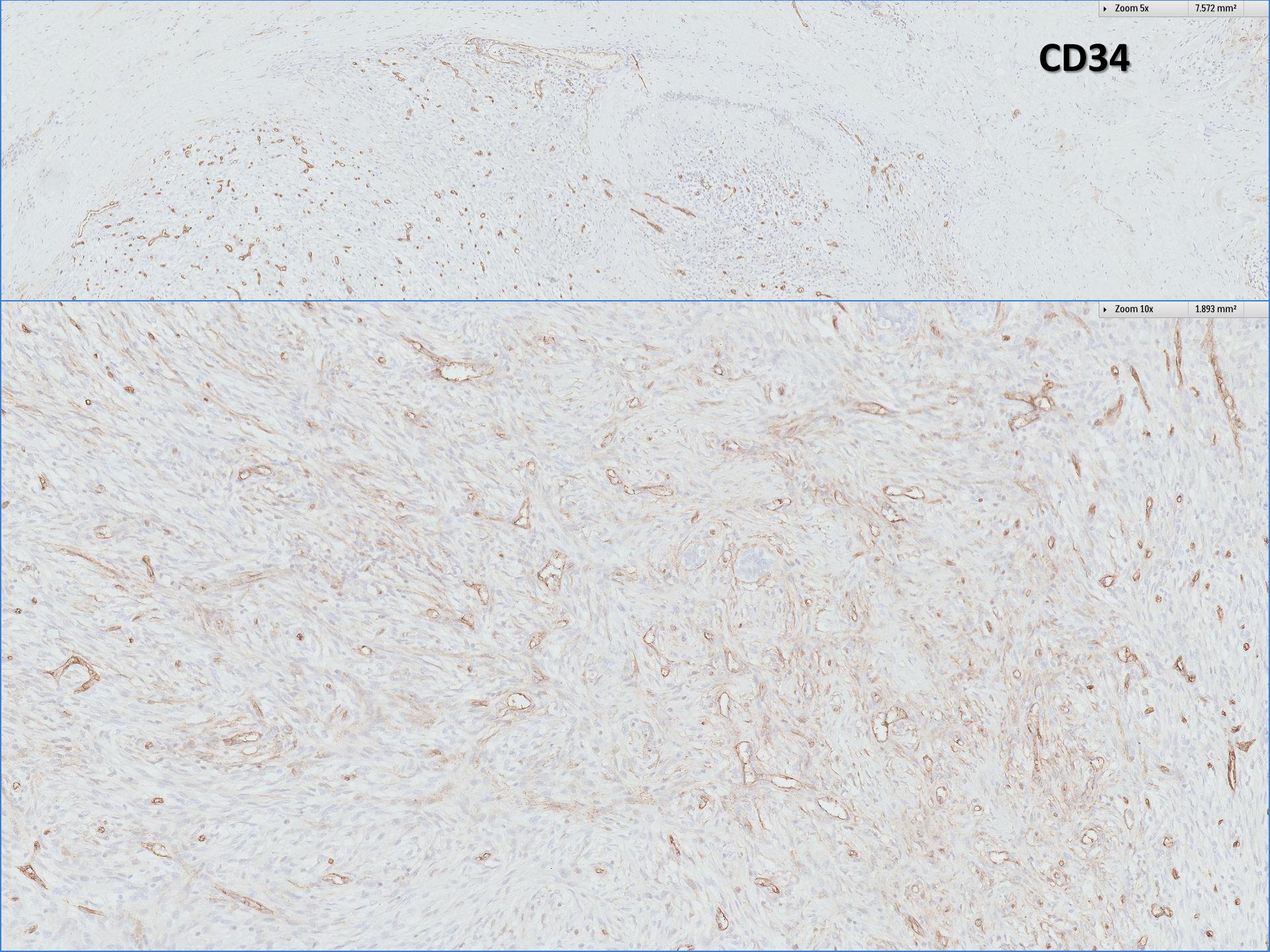
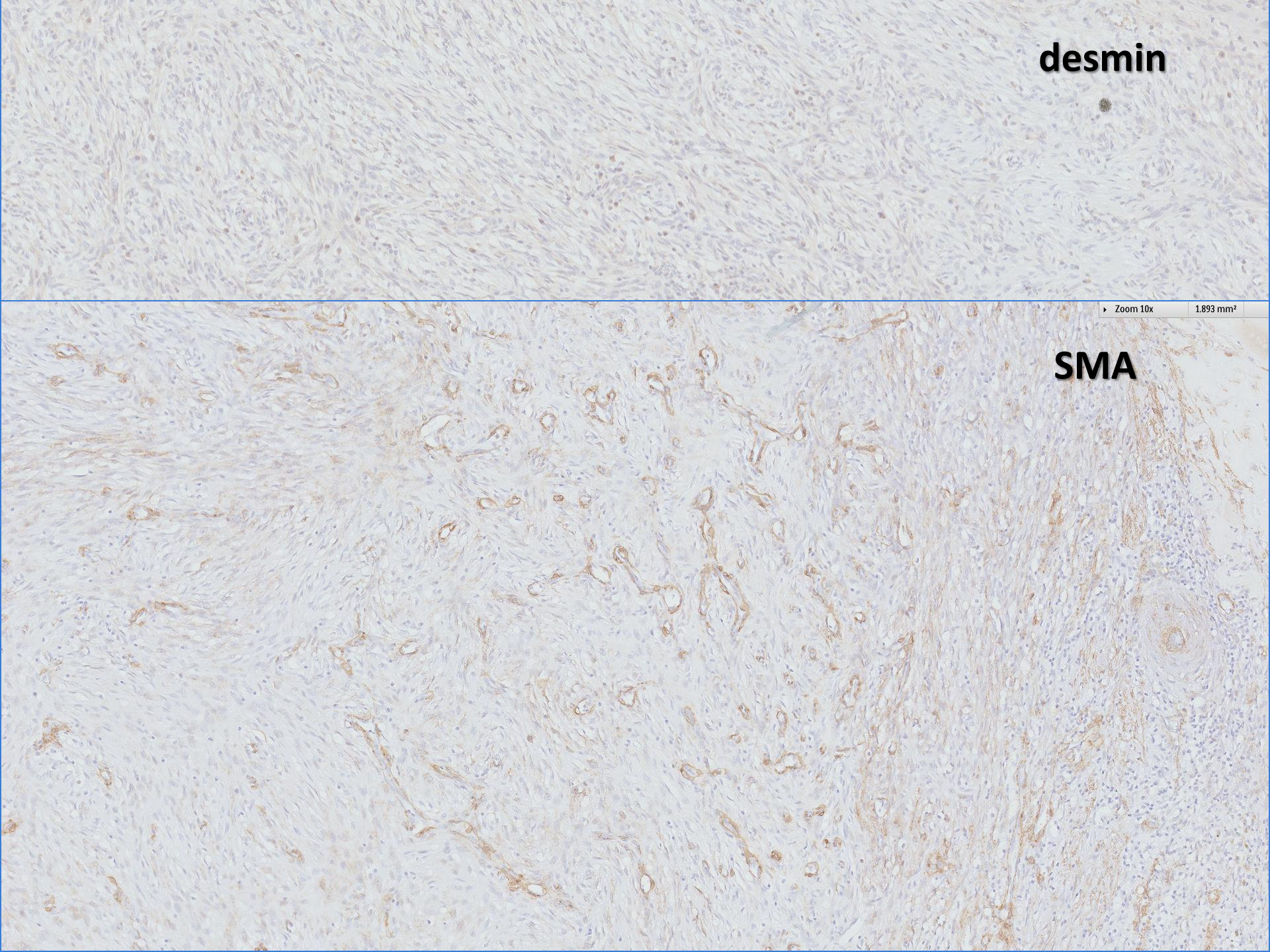


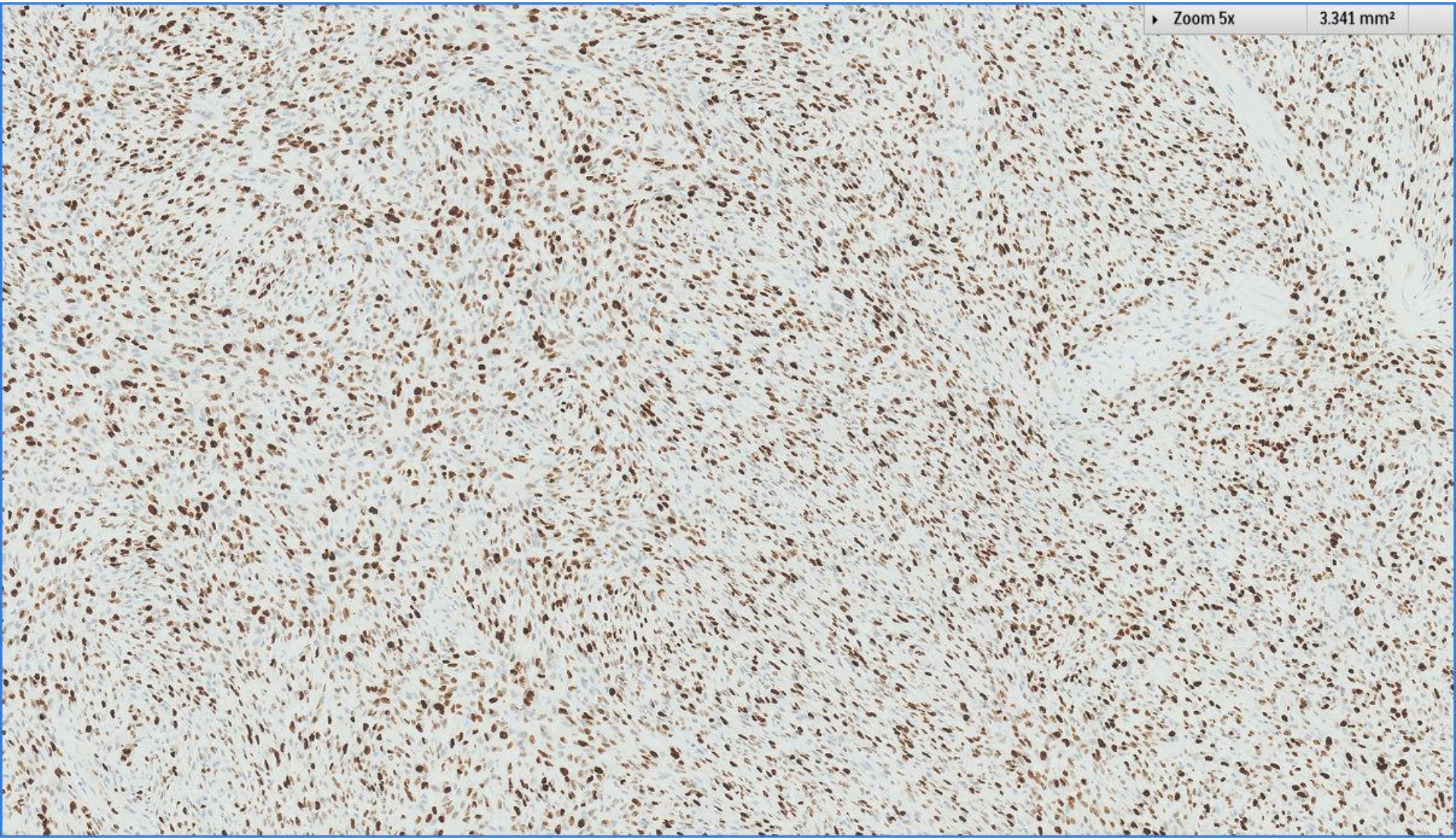

Zoom 2x
30.290 mm²
CK5/6


Zoom 5x
7.572 mm²
CK14

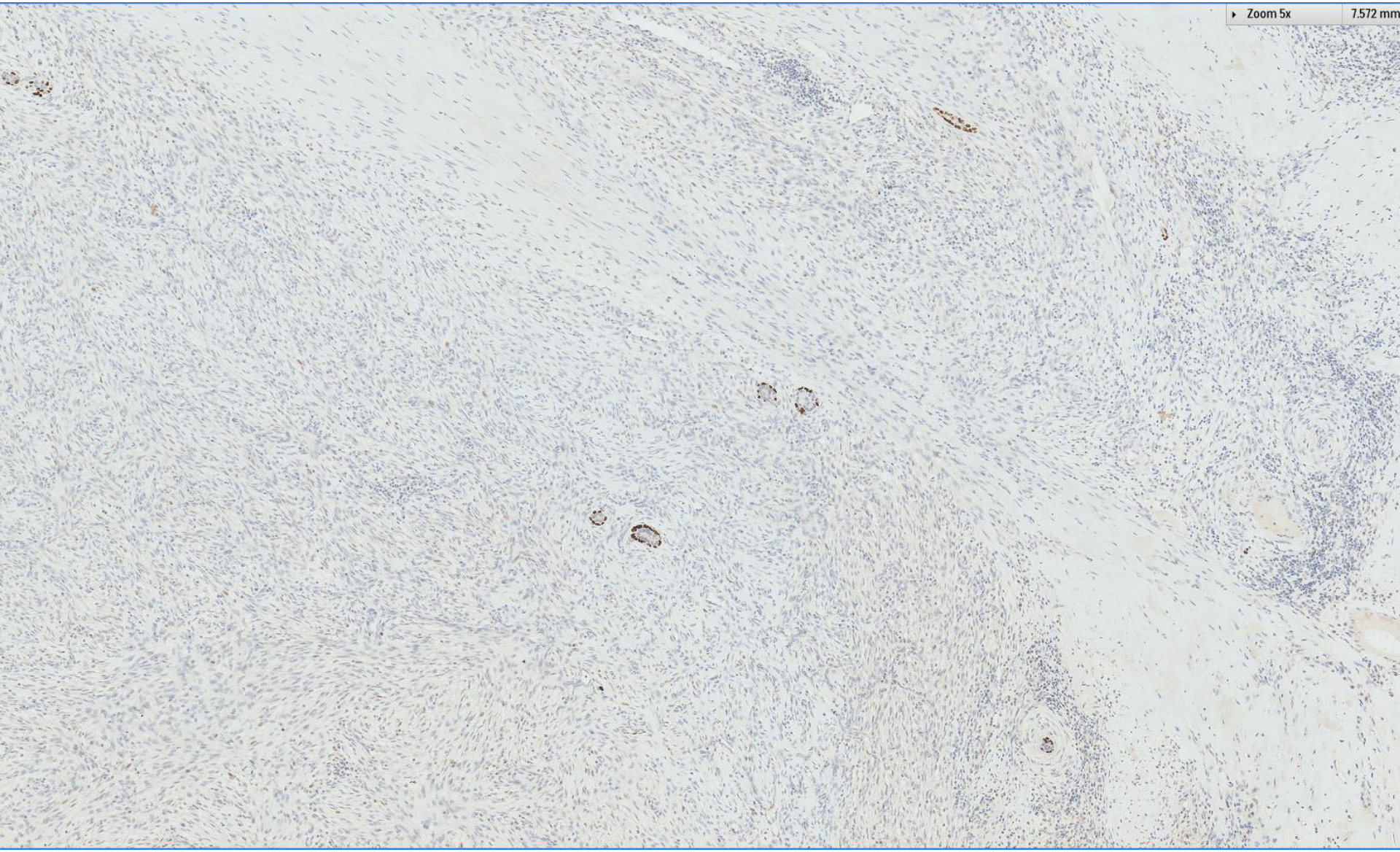

Zoom 5x
7.572 mm²
CD34
Zoom 10x
1.893 mm²

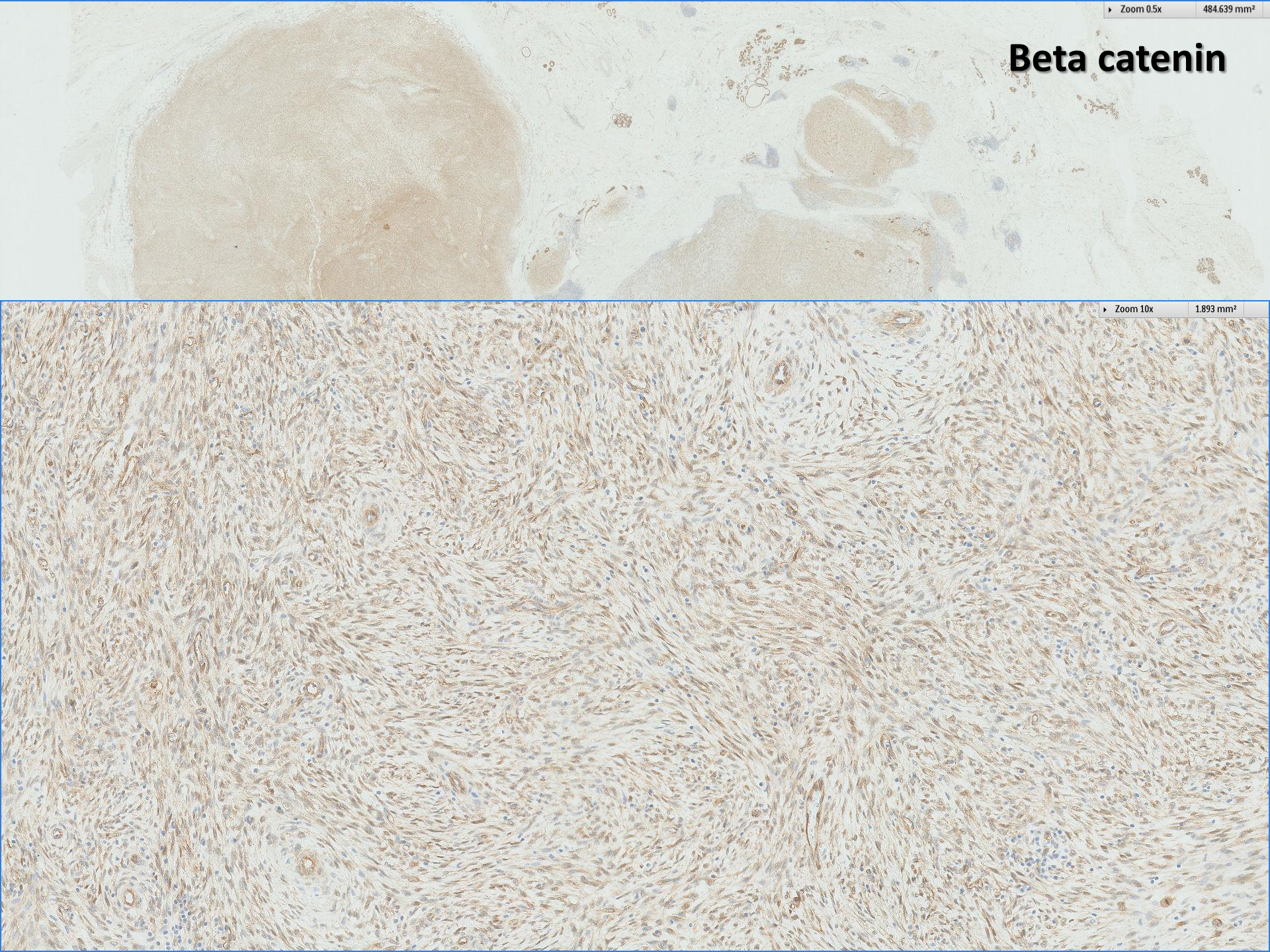

desmin
Zoom 10x
1.893 mm²
SMA

Ki67



p63




Zoom 0.5x
484.639 mm²
Beta catenin
Zoom 10x
1.893 mm²

Diagnosis

Left breast lump, wide excision ~

Malignant spindle cell tumour, consistent with malignant phyllodes tumour

Distinguishing Features of Sarcomatous Stromal Overgrowth in Malignant Phyllodes Tumour, Spindle Cell Metaplastic Carcinoma, and Primary Breast Sarcoma

Feature	Malignant phyllodes tumour (stromal overgrowth)	Spindle cell metaplastic carcinoma	Primary breast sarcoma
Leaf-like fronds	Present (but may be hard to identify)	Absent	Absent
Peri-epithelial stromal accentuation	Present	Absent	Absent
Carcinoma (in situ and invasive)	Absent	May be present	Absent
Keratins (IHC)	Usually absent, may be focal reactivity	Present, but may be focal	Usually absent
High molecular weight keratins	Usually absent, may be focal reactivity	Present, but may be focal	Usually absent
p63, p40	Absent or present	Usually present, but may be focal	Usually absent

Breast sarcomas and malignant phyllodes tumours: comparison of clinicopathological features, treatment strategies, prognostic factors and outcomes

Sue Zann Lim, Sathiyamoorthy Selvarajan, Aye Aye Thike, Nur Diyana Binte Md. Nasir, Benita Kiat Tee Tan, Kong Wee Ong, et al.

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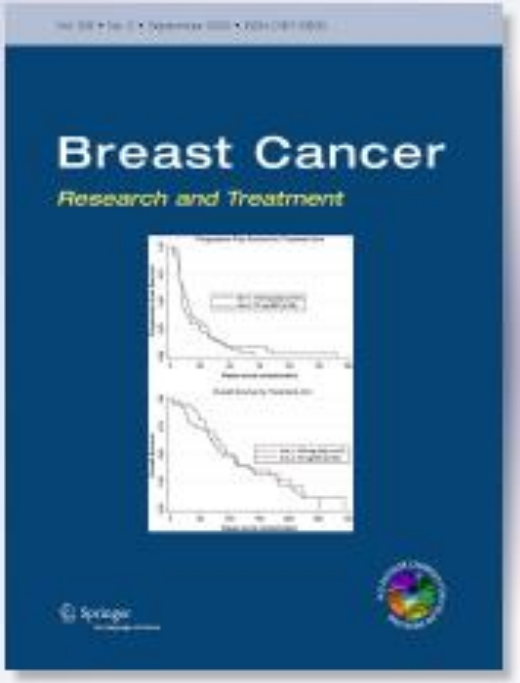

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Abstract We aimed to compare the clinicopathological features, treatment strategies and clinical outcomes of breast sarcomas (BS) and malignant phyllodes tumours (MPT), and determine their prognostic factors. Cases of BS and MPT diagnosed at the Department of Pathology, Singapore General Hospital from January 1991 to December 2014 were derived from department files. Clinicopathological features, treatment strategies and survivals of patients with BS and MPT were compared. Prognostic indicators for BS and MPT were identified. BS and MPT were comparable in all except one of their clinicopathological features. A significantly higher proportion of BS patients had a history of previous breast carcinoma and thus radiation to the chest as compared to the MPT group (17.6 vs 0 %, $P = 0.018$). There was no significant difference in survival outcomes between BS and MPT. The 5-year disease-free survivals (DFS) for BS and MPT were 59.1 and 57.4 % respectively ($P = 0.816$), while the 5-year overall survivals (OS) for BS and MPT were 86.5 and 78.5 % respectively ($P = 0.792$). Combining both groups of tumours, univariate analysis showed that DFS was significantly affected by multifocality ($P = 0.019$), histological subtype ($P = 0.014$), presence of malignant heterologous elements ($P < 0.001$) and margin status ($P = 0.023$). Margin status was the only parameter which had a significant impact on OS ($P = 0.040$). Multivariate analysis confirmed the above findings. BS and MPT are rare entities with remarkable heterogeneity. They share similar clinicopathological features and outcomes, provoking thoughts on their biological relationship and clinical significance of pathologic distinction.

Keywords Mesenchymal · Angiosarcoma · Radiation · Clinicopathological parameters · Recurrence · Survival

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Table 1 continued

Clinicopathological parameter	Total ($n = 62$)	BS ($n = 17$)	MPT ($n = 45$)	P value
Cytologic atypia				
Moderate	11 (17.7 %)	6 (35.3 %)	5 (11.1 %)	0.056
Marked	51 (82.3 %)	11 (64.7 %)	40 (88.9 %)	
Stromal hypercellularity				
Moderate	12 (19.4 %)	4 (23.5 %)	8 (17.8 %)	0.721
Marked	50 (80.6 %)	13 (76.5 %)	37 (82.2 %)	
Histological subtype				
Angiosarcoma	4 (6.5 %)	3 (17.6 %)	1 (2.2 %)	0.080
Undifferentiated pleomorphic sarcoma	52 (83.8 %)	12 (70.6 %)	40 (88.9 %)	
Others	6 (9.7 %)	2 (11.8 %)	4 (8.9 %)	
Osteosarcoma	4 (6.5 %)	1 (5.9 %)	3 (6.7 %)	
Chondrosarcoma	1 (1.6 %)	1 (5.9 %)	0 (0.0 %)	
Fibrosarcoma	1 (1.6 %)	0 (0.0 %)	1 (2.2 %)	

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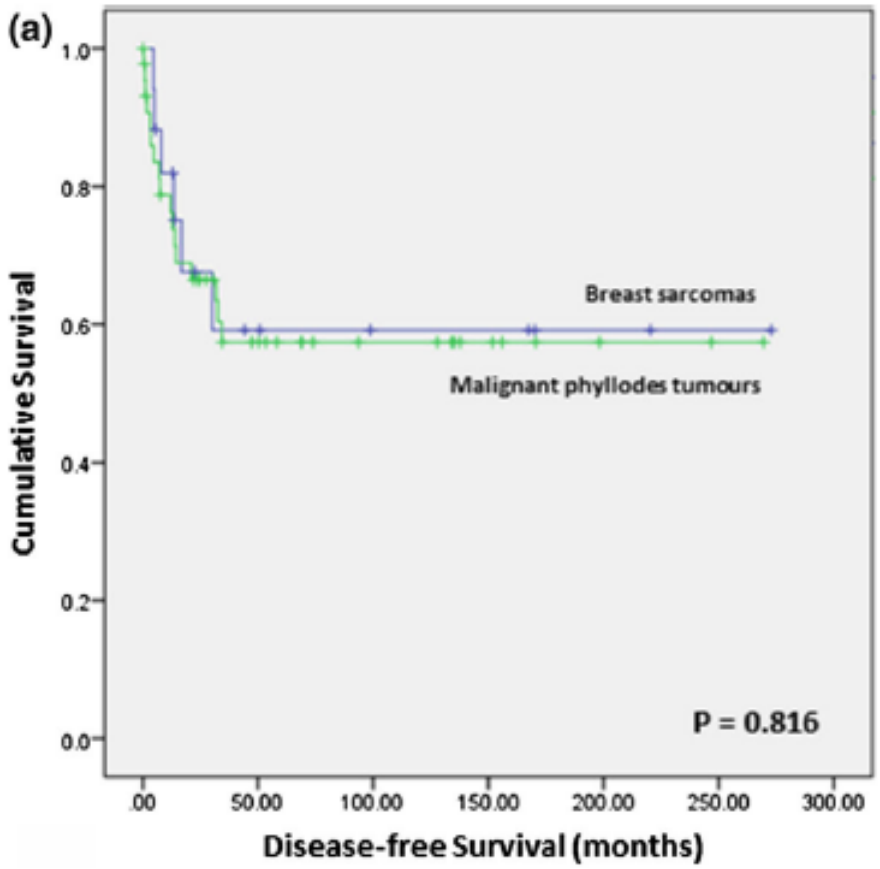

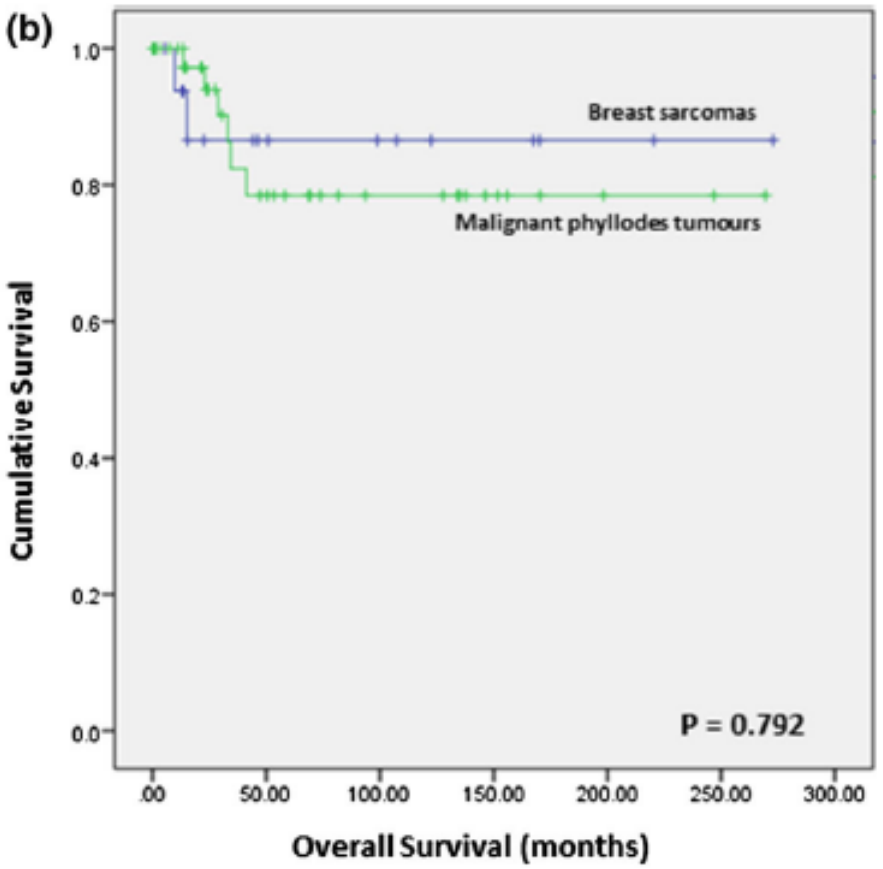

Fig. 4 Kaplan-Meier curves showing the a DFS and b OS of BS and MPT. There was no significant difference in the survival outcomes between the 2 groups

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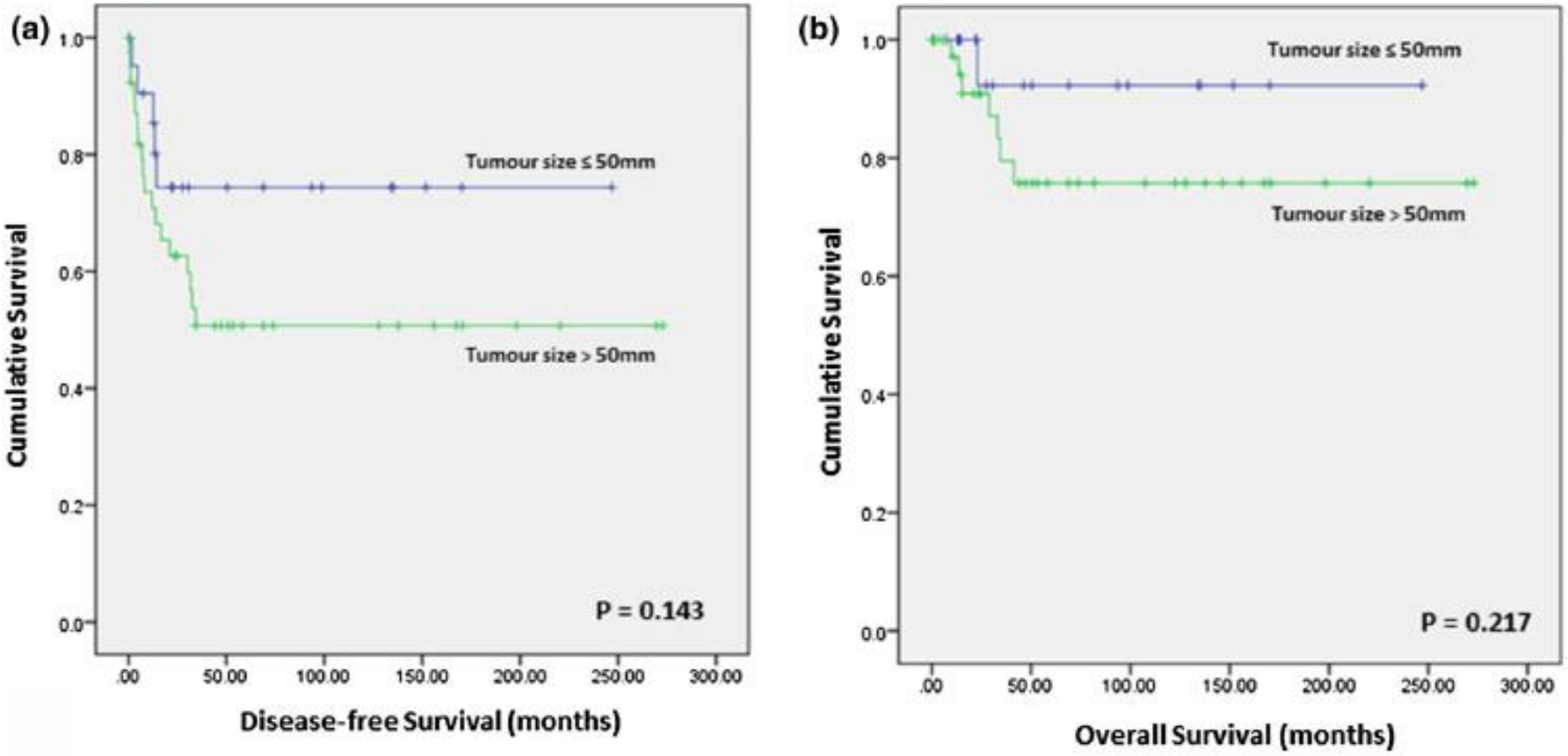

Fig. 5 Kaplan-Meier curves showing the a DFS and b OS of tumours ≤50 mm and tumours >50 mm. There was a trend of improved survival in patients with tumours ≤50 mm as compared to those with tumours >50 mm

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Table 6 Multivariate analysis on potential prognostic factors on DFS and OS for both BS and MPT

Clinicopathological parameter	DFS			OS		
	HR	95 % CI	*P* value	HR	95 % CI	*P* value
Multifocality						
Yes	10.869	2.134–55.348	0.004*	NA	NA	0.993
No	1					
Histological subtype						
Angiosarcoma	8.979	2.168–37.183	0.002*	NA	NA	0.346
Others	1					
Malignant heterologous element						
Yes	20.515	5.366–78.431	<0.001*	NA	NA	0.313
No	1					
Margin						
Positive	5.456	1.987–14.980	0.001*	5.166	1.131–23.596	0.034*
Negative	1			1		

HR Hazard ratio, *CI* Confidence interval

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Summary

- Malignant phyllodes tumours and breast sarcomas share similar clinicopathological features and clinical outcomes.
- Surgical resection with negative margins is the mainstay of treatment.
- Margin status is the only parameter significantly influencing DFS and OS.

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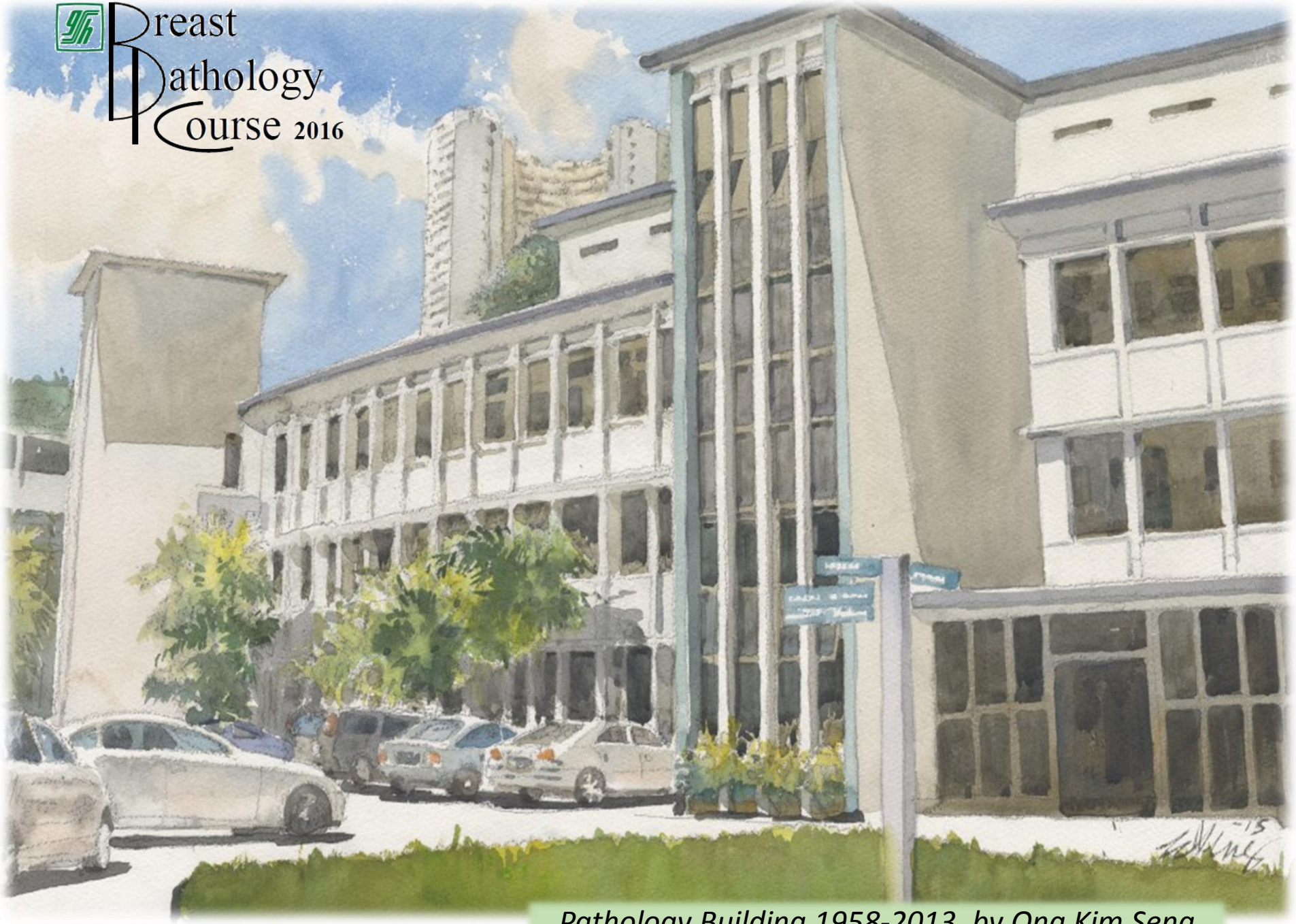

Pathology Building 1958-2013, by Ong Kim Seng