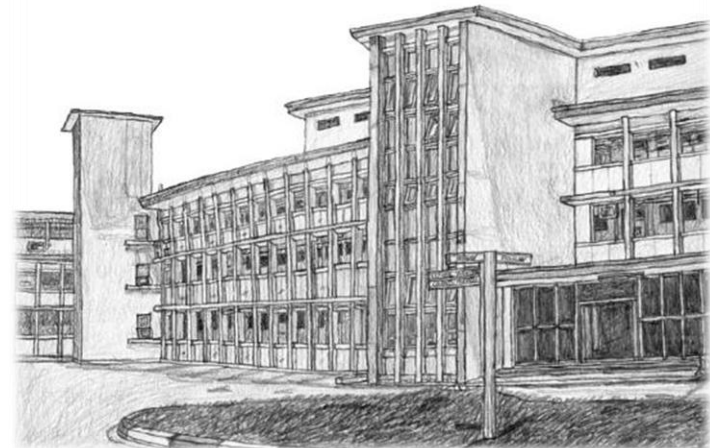
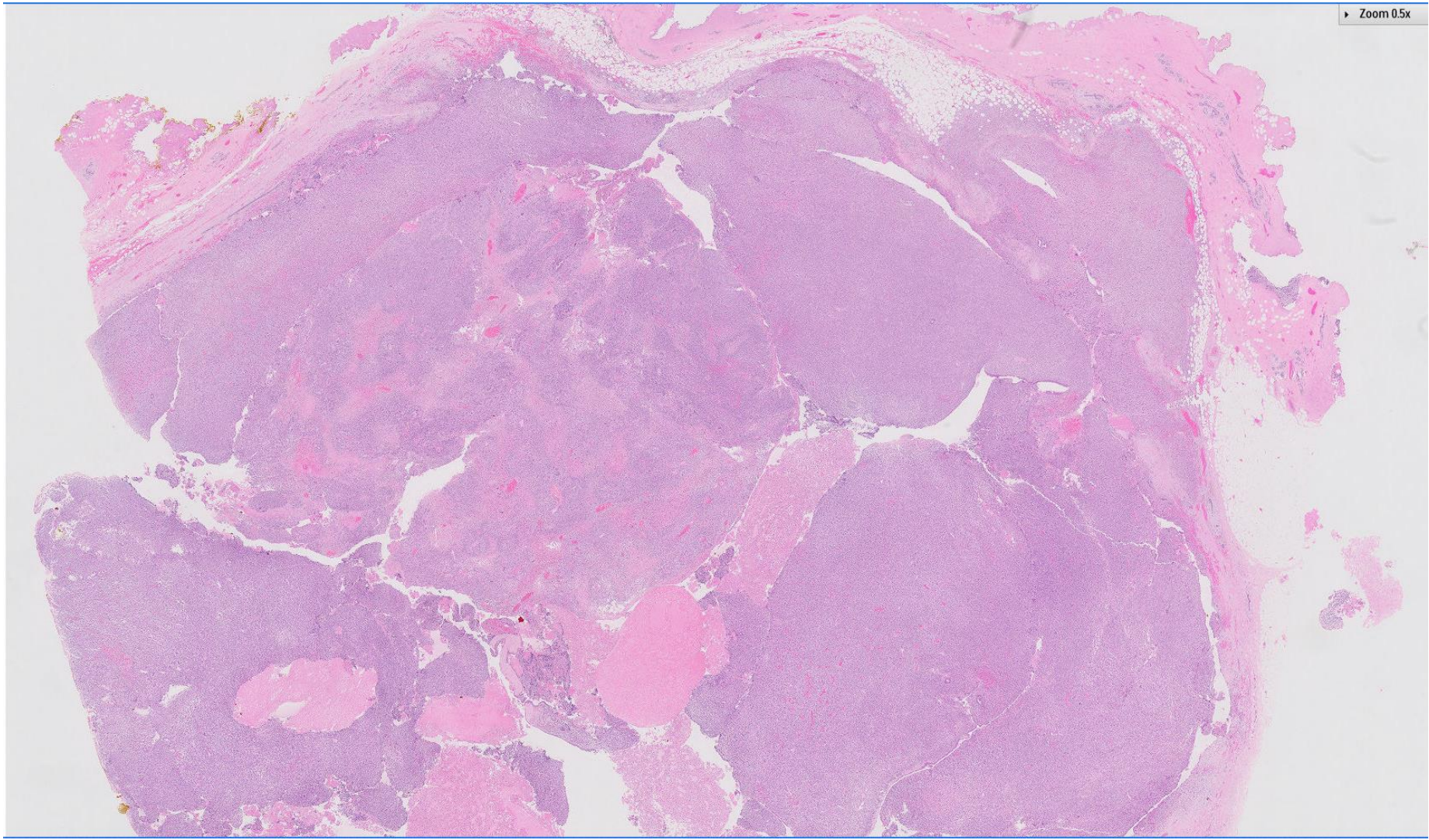


Case 11

15 year old female.

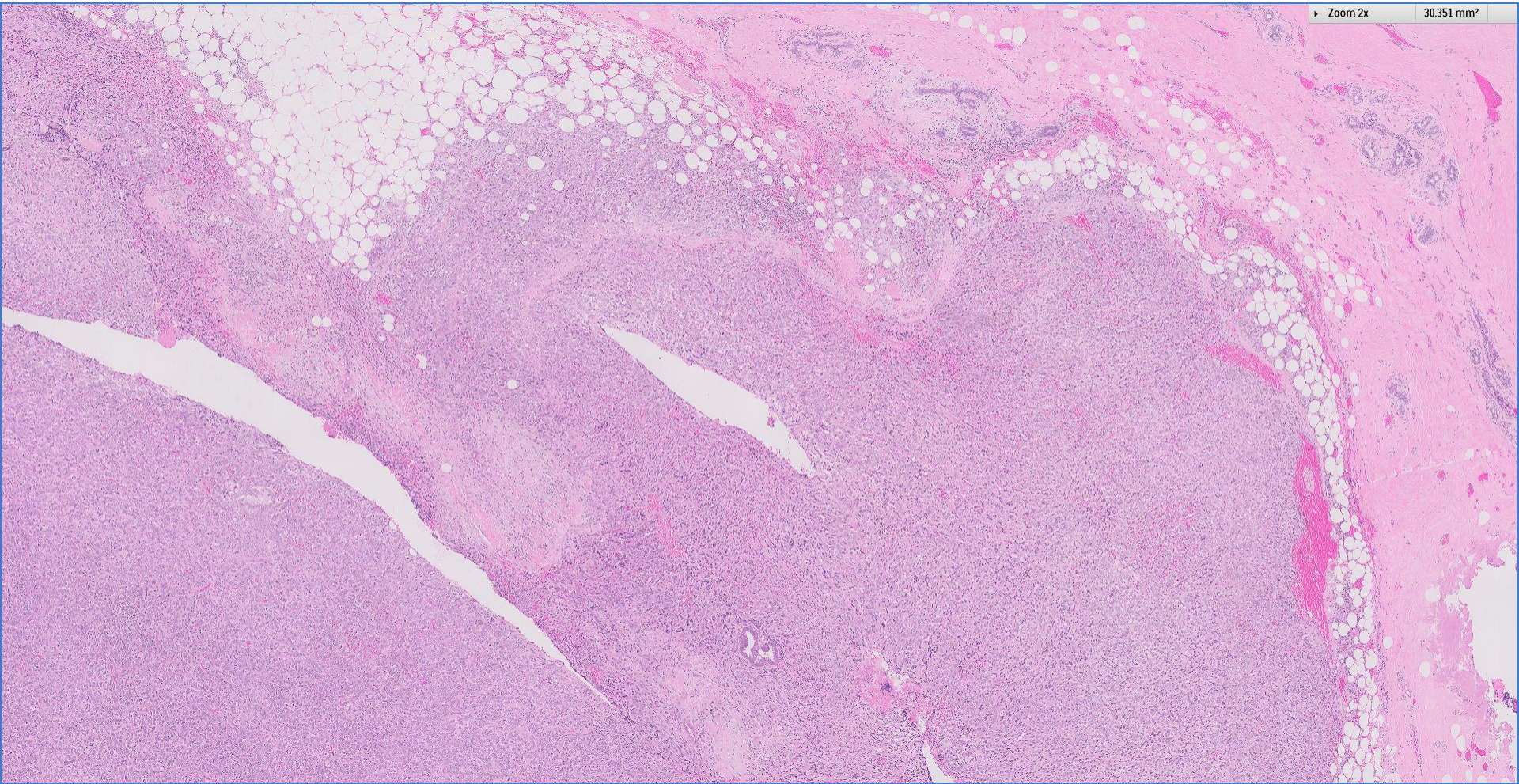
Large tumour in the left breast, excised.





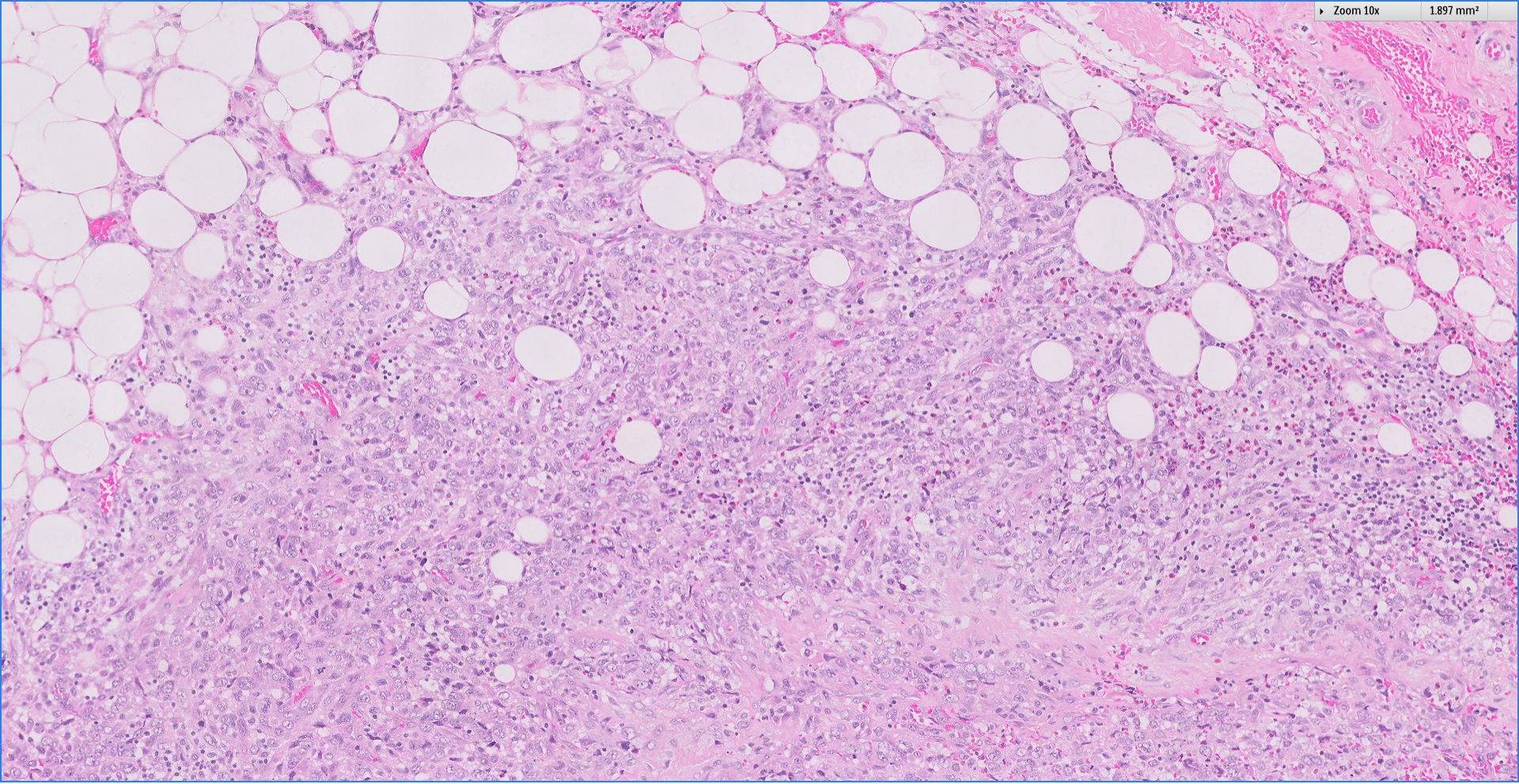
Zoom 2x

30.351 mm²



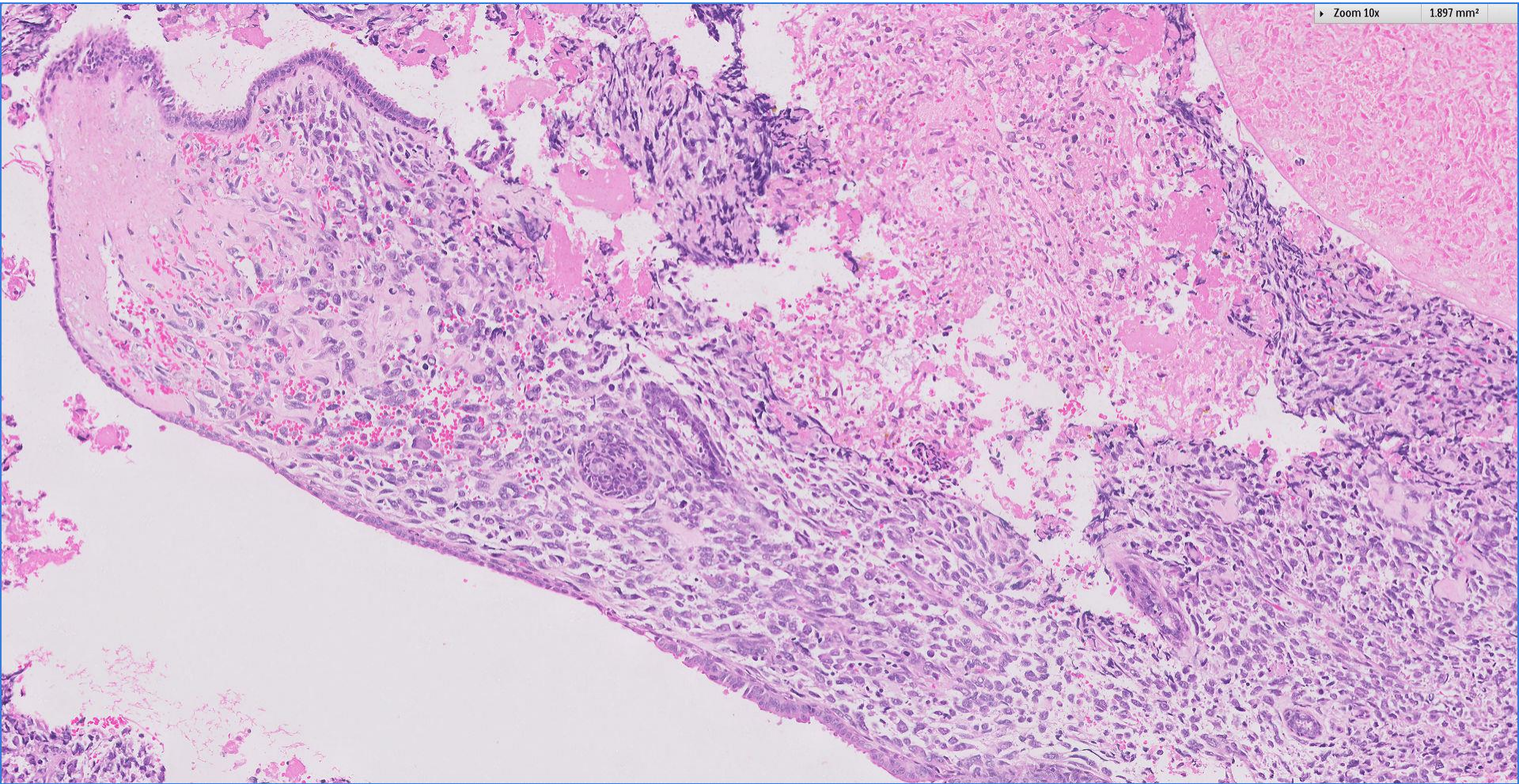
Zoom 10x

1.897 mm²



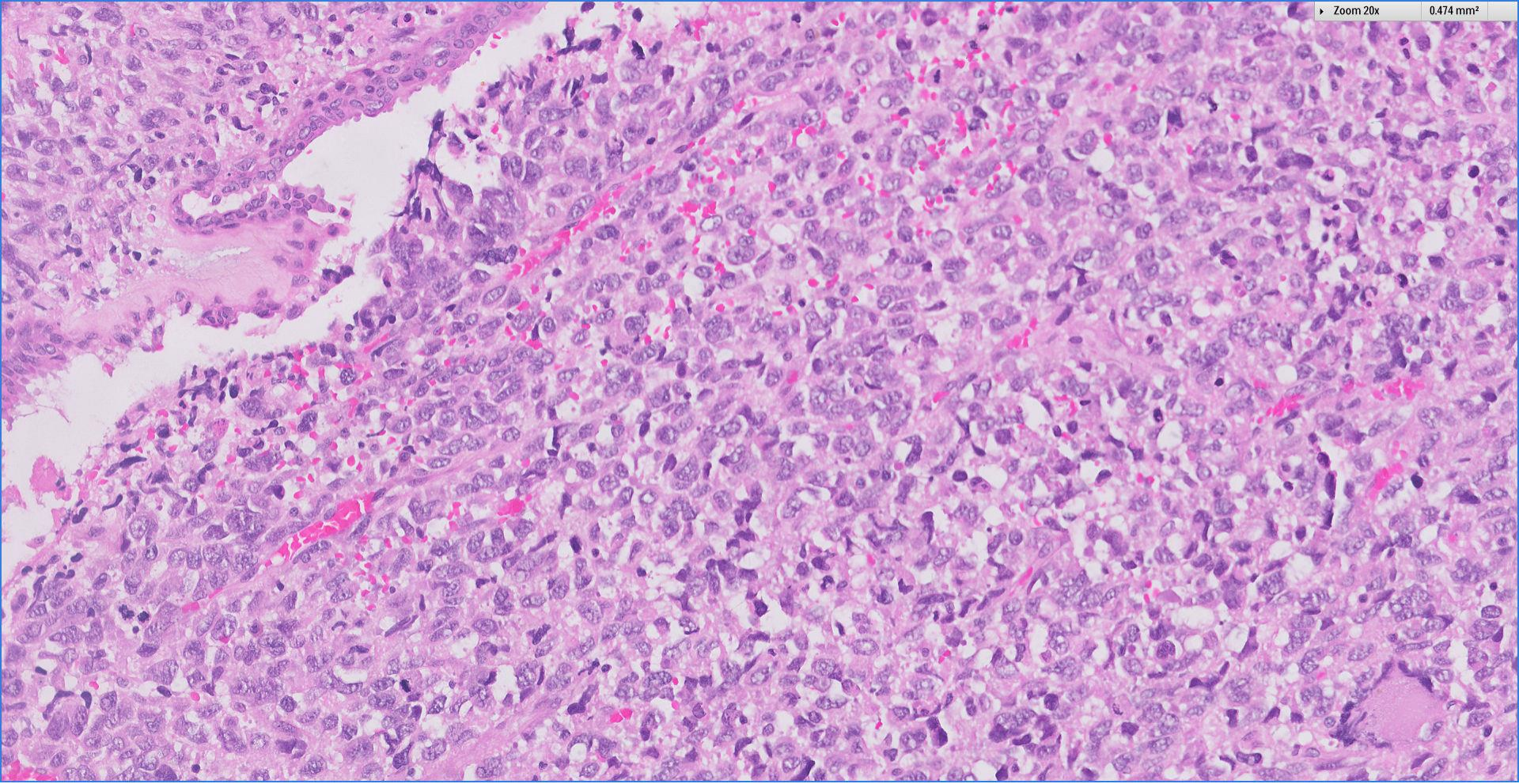
Zoom 10x

1.897 mm²

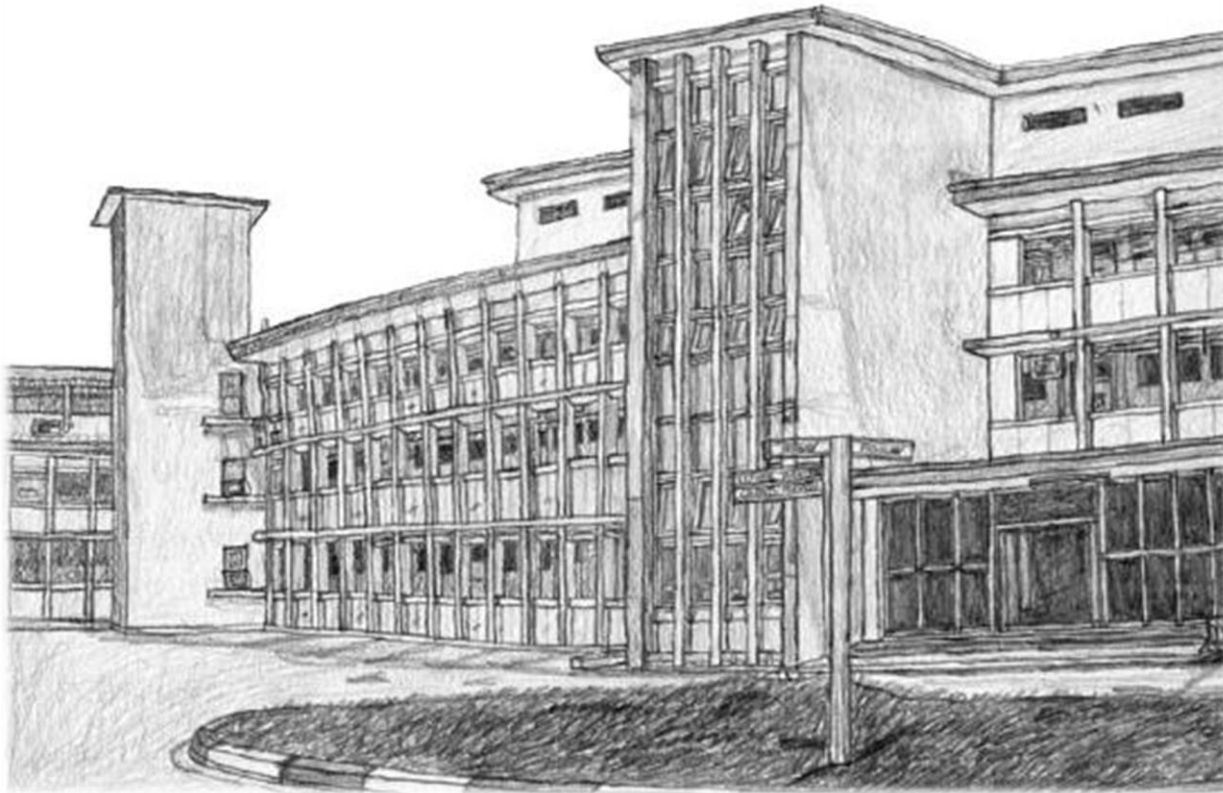


Zoom 20x

0.474 mm²



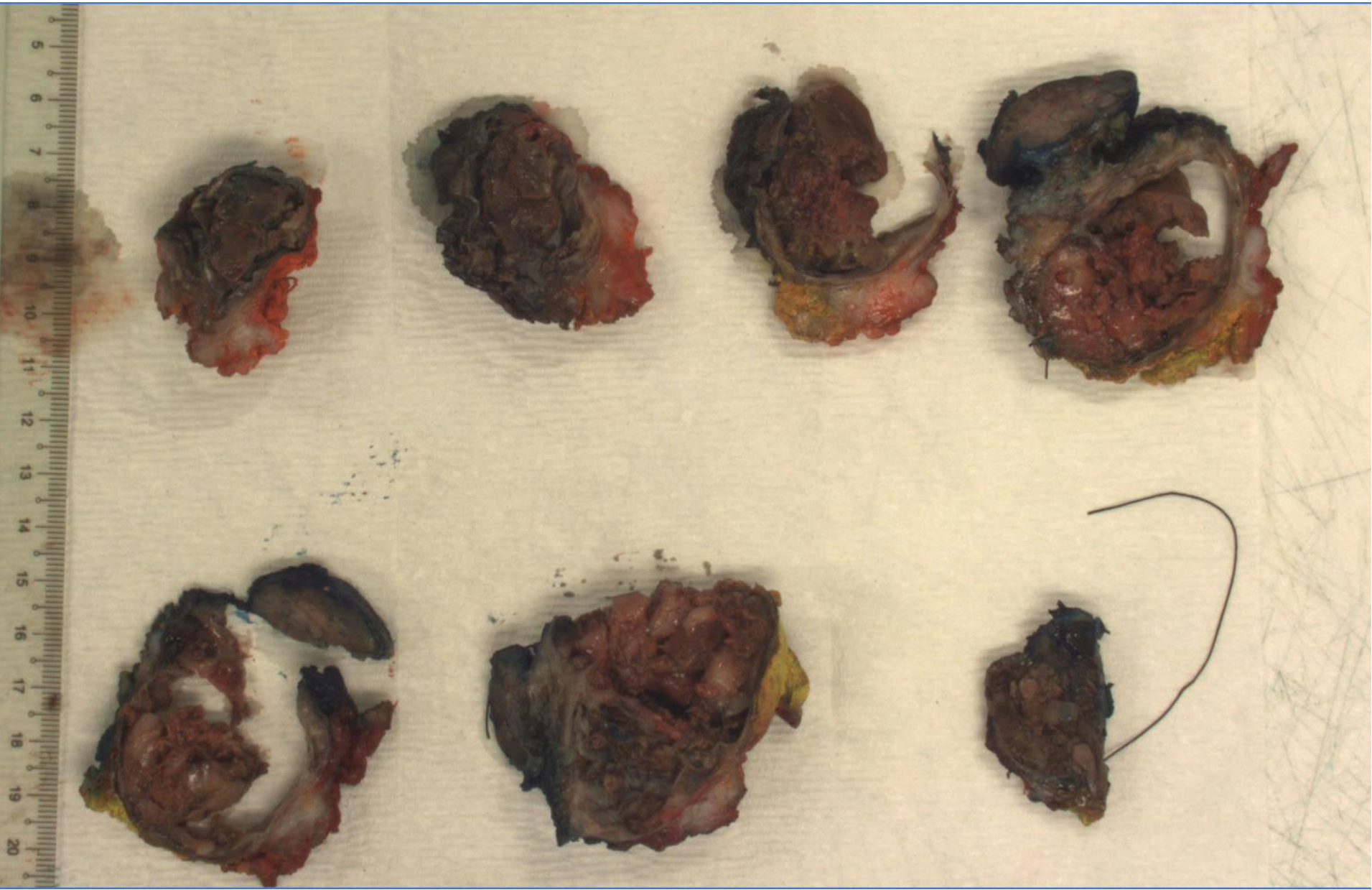
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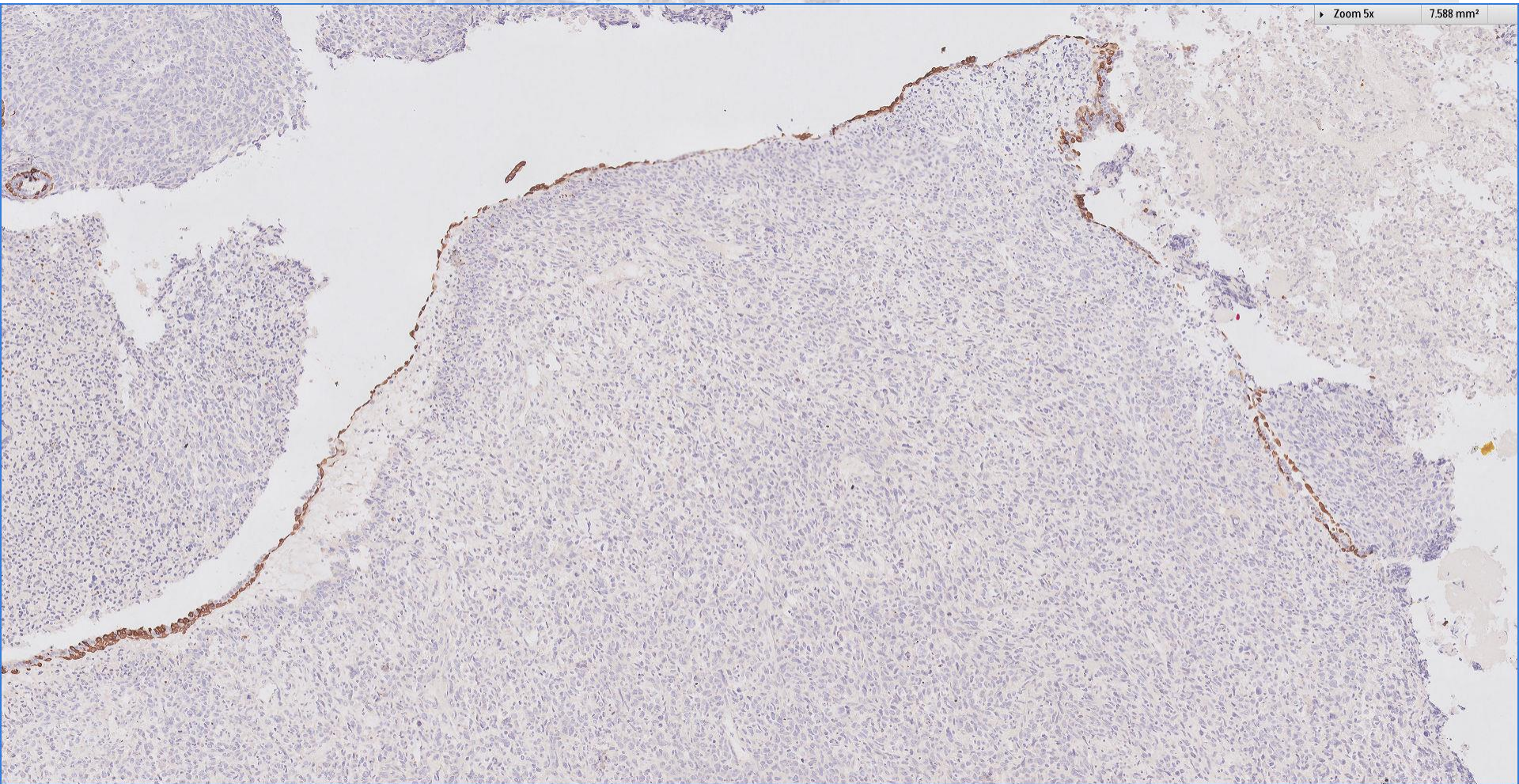
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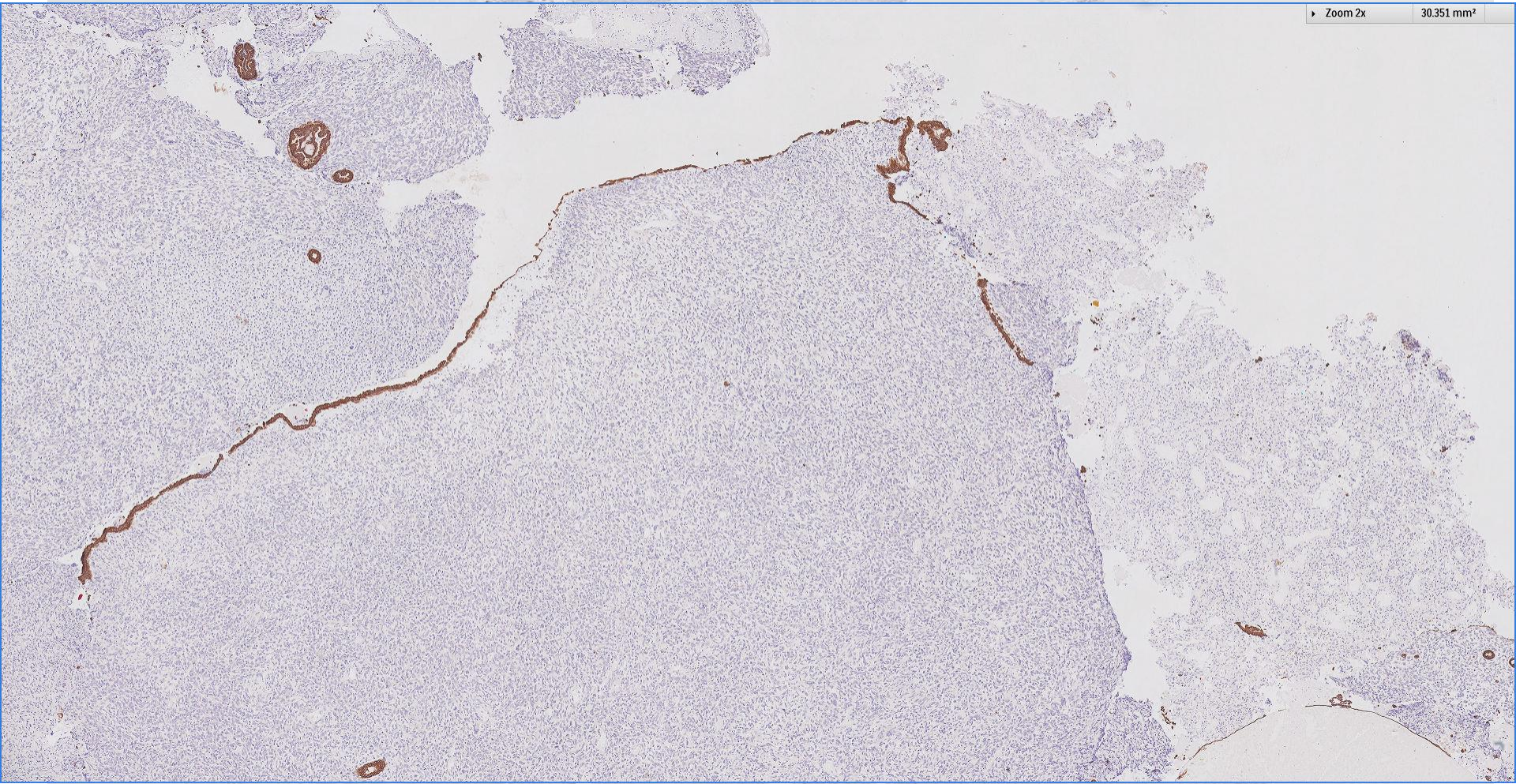
CK14



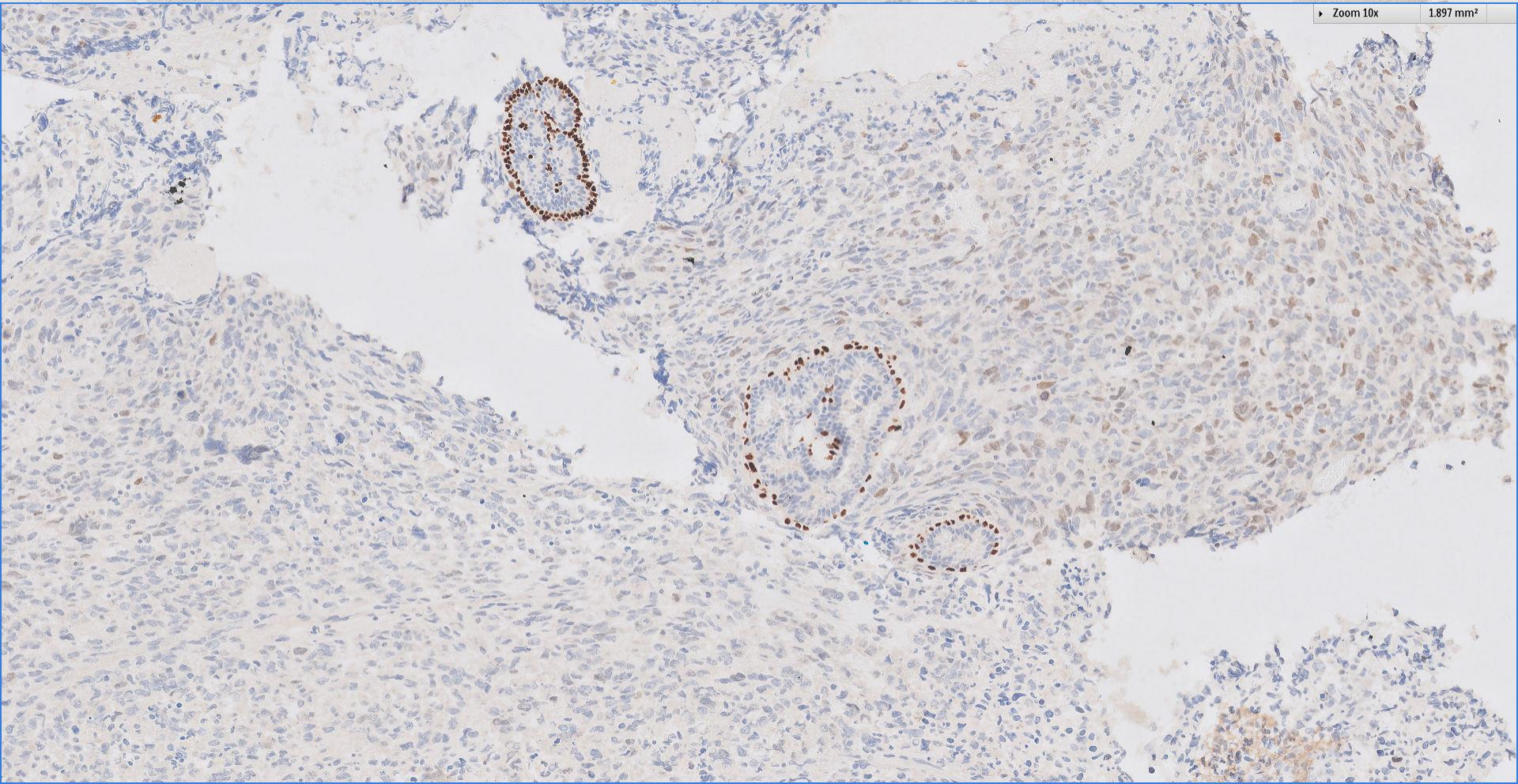
MNF116

Zoom 2x

30.351 mm²

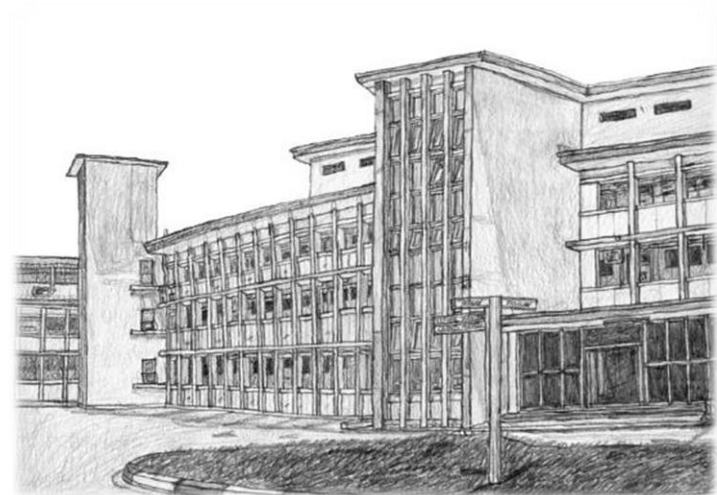


p63



Diagnosis

Malignant phyllodes tumour, 5.9cm



Am J Surg Pathol. 2014 Dec;38(12):1689-96. A subset of malignant phyllodes tumors express p63 and p40: a diagnostic pitfall in breast core needle biopsies. Cimino-Mathews A(1), Sharma R, Illei PB, Vang R, Argani P.

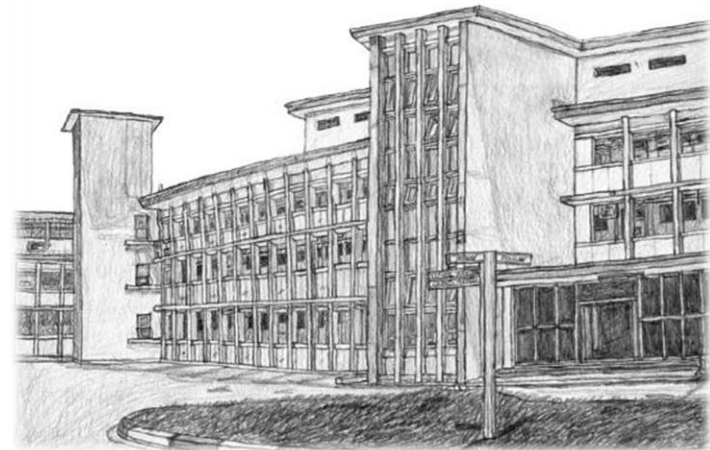
Focal p63, p40, and cytokeratin labeling can be seen in malignant phyllodes tumours but not in lower-grade fibroepithelial lesions, and immunoreactivity with these markers alone is not diagnostic of sarcomatoid carcinoma on core needle biopsy.

Fibroepithelial tumours in the young



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Fibroepithelial Lesions in the Breast of Adolescent Females: A Clinicopathological Study of 54 Cases

Dara S. Ross, MD,* Dilip D. Giri, MD,* Muzaffar M. Akram, MSc, MA,* Jeffrey P. Catalano, BA,* Cristina Olcese, BS,[†] Kimberly J. Van Zee, MS, MD,[†] and Edi Brogi, MD, PhD*

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JCP Online First, published on May 21, 2015 as 10.1136/jclinpath-2015-202956

Original article

Paediatric fibroepithelial lesions revisited: pathological insights

J Clin Pathol. 2015 Aug;68(8):633-41

Timothy Kwang Yong Tay,¹ Kenneth Tou En Chang,² Aye Aye Thike,¹ Puay Hoon Tan¹

Fibroepithelial Lesions in the Breast of Adolescent Females: A Clinicopathological Study of 54 Cases

- 48 patients (≤ 18 years of age) with 54 FELs.
- 5 patients with multiple FELs.
- Ethnicity ~
 - 30 (67%) Caucasian
 - 12 (27%) African American
 - 2 (4%) Hispanic
 - 1 (2%) Asian
 - 3 unknown ethnicity
- Median age 16 years.
- Most (96%) FELs occurred after menarche (12 years).

- 34 fibroadenomas (11 usual, 23 juvenile)
 - *Mean size 2.9cm, range 0.5 to 7cm*
- 20 phyllodes tumours (16 benign, one borderline, 3 malignant)
 - *Mean size 6.3cm, range 1 to 25cm*
- Mean mitotic activity (per 10 hpf) ~

Usual fibroadenoma	Juvenile fibroadenoma	Benign phyllodes tumour	Borderline phyllodes tumour	Malignant phyllodes tumour
1.3 <i>(range 0 – 6*)</i>	1.8	3.1	10	17

**Most mitotically active FA was from an 18 year old who delivered 11 months prior to excision*

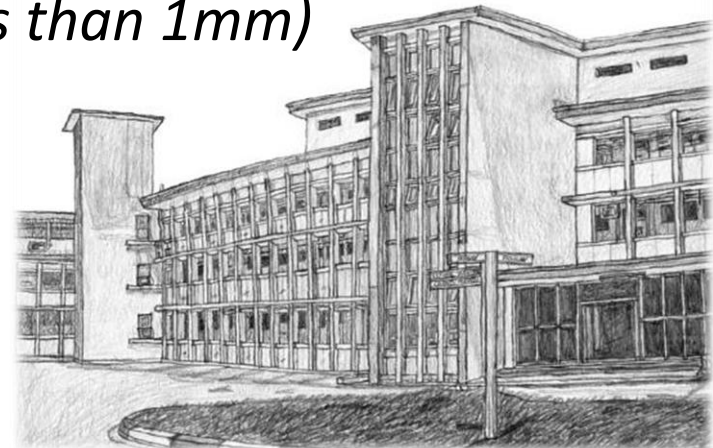
Phyllodes tumours

Histological feature	Benign PT (16 cases)	Borderline (1 case) & malignant* (3 cases) PT
Stromal atypia	Mild to moderate (all)	Moderate (borderline PT) Marked (malignant PT)
Stromal cellularity	Increased (all)	Increased (all)
Stromal overgrowth	No	Yes (malignant PT)
Tumour border	Circumscribed (12 cases) Infiltrative (3 cases)	Infiltrative (1 borderline, 2 malignant cases)

** Liposarcoma in one malignant PT*

- Mean follow-up for 29 patients with 33 FELs ~ 44 months.
- Two (10%) phyllodes tumours recurred ~
 - One benign PT at 18 months
 - One borderline PT at 11 months

(microscopic margins noted to be less than 1mm)



Summary

Fibroepithelial Lesions in the Breast of Adolescent Females: A Clinicopathological Study of 54 Cases

- Mitotic activity in FELs of young females ≤ 18 years is common, and can be substantial.
- Except for mitotic activity, usual FAs, benign & malignant PTs are morphologically indistinguishable from the adult counterparts.
- Benign prognosis, without predisposition to PT or cancer development.
- Juvenile FA is the commonest form of FEL, & may show slight stromal expansion, intratumoural heterogeneity, without stromal atypia.
- Awareness of morphologic features is important to avoid overdiagnosis of PT which may lead to additional unnecessary and potentially disfiguring surgery.

53 females with 68 fibroepithelial lesions

Original article

Paediatric fibroepithelial lesions revisited: pathological insights

Timothy Kwang Yong Tay,¹ Kenneth Tou En Chang,² Aye Aye Thike,¹ Puay Hoon Tan¹

Table 1 Pathological diagnosis of tumours (N=68)

Diagnosis	Number (%)
Simple fibroadenoma	27 (39.7)
Juvenile fibroadenoma	32 (47.1)
Cellular fibroadenoma	3 (4.4)
Benign phyllodes tumour	3 (4.4)
Others	3 (4.4)*

**Fibroadenomas,
91.2%**

**Phyllodes
tumours, 4.4%**

*The three tumours were composed of a benign fibroepithelial proliferation, focally infarcted; a benign fibroepithelial neoplasm with hybrid features of juvenile fibroadenoma and benign phyllodes tumour; and a benign fibroepithelial neoplasm with hybrid features of juvenile papillomatosis and infarcted benign phyllodes tumour-like areas.

Table 2 Clinicopathological characteristics of paediatric fibroepithelial lesions (n=68)*

Clinicopathological parameters	Number (%)
Age (years) (mean and median 14, range 10–18)	
<Mean age	25 (36.8)
≥Mean age	43 (63.2)
Tumour size (cm) (mean 3.7, median 3.0, range 1.2–11.0)	
<Mean size	44 (64.7)
≥Mean size	23 (33.8)
Architecture (percentage of intracanalicular pattern)	
0–25%	19 (27.9)
>25–50%	21 (30.9)
>50–75%	21 (30.9)
>75–100%	7 (10.3)
Microscopic borders	
Pushing	42 (61.8)
Permeative	16 (23.5)
Not assessable	10 (14.7)
Leaf-like fronds	
Absent	34 (50.0)
Present	34 (50.0)
Periductal stromal condensation	
Absent	55 (80.9)
Present	12 (17.6)
Stromal hypercellularity	
Mild	10 (14.7)
Moderate	53 (77.9)
Marked	4 (5.9)

- Median age ~ 14 years
- Median tumour size ~ 3cm
- Variable proportions of intracanalicular growth pattern
- Predominantly pushing microscopic border
- Leaf-like fronds in 50% of cases
- No periductal stromal condensation in majority of cases
- Mild to moderate stromal cellularity in 92.6%

Stromal nuclear atypia	
Absent/mild	34 (50.0)
Moderate	33 (48.5)
Marked	0 (0.0)
Mitoses (per 10 hpf) (0.55 mm)	
0	51 (75.0)
≥1	16 (23.5)
Epithelial hyperplasia	
Absent/mild	47 (69.1)
Moderate	18 (26.5)
Marked	2 (2.9)
Surgical margins	
Not involved	13 (19.1)
Involved	54 (79.4)
Recurrence	
No	60 (88.2)
Yes	8 (11.8)

**Moderate
stromal atypia**

**Mitotic activity
~ maximum of 5
mitoses/10hpf
in a FA**

**Mostly
enucleated**

8 recurrences

*One extensively infarcted benign phyllodes tumour could not be assessed for many histological parameters, including epithelial proliferation, periductal stromal condensation, stromal hypercellularity, stromal nuclear atypia and stromal mitotic count. One juvenile fibroadenoma had no documented size of tumour.

Table 6 Number of mitoses per 10 high power fields (hpf) compared with tumour recurrences

Mitosis (per 10 hpf) (0.55 mm)	Total	No. of tumours with no recurrence No (%)	No. of tumours with recurrence No (%)	p Value
0	51	47 (92.2)	4 (7.8)	0.219
≥1	16	13 (81.3)	3 (18.7)	
0-2	62	58 (93.5)	4 (6.5)	<0.001*
≥3	5	2 (40.0)	3 (60.0)	

*Denotes statistically significant value.

Table 7 Diagnosis versus recurrence (when considering all fibroadenomas as a whole)

Diagnosis	Total	No recurrence No (%)	Recurrence No (%)	p Value
Others	3	3 (100)	0 (0)	0.011*
All fibroadenomas	62	56 (90.3)	6 (9.7)	
Benign phyllodes tumour	3	1 (33.3)	2 (66.7)	

*Denotes statistically significant value.

Predictors of recurrence ~

- More than 2 mitoses per 10 hpf.
- Diagnosis of phyllodes tumour.

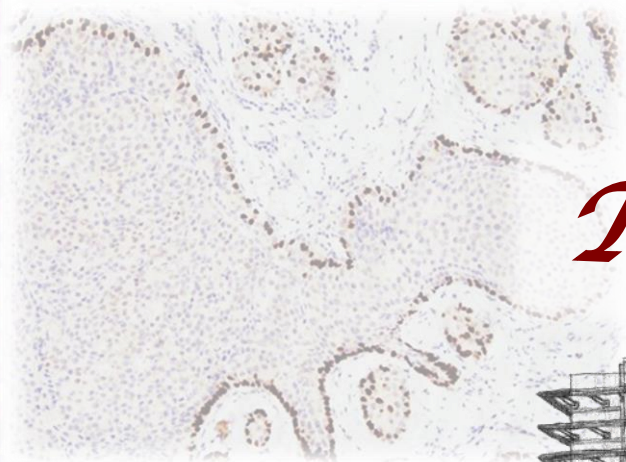
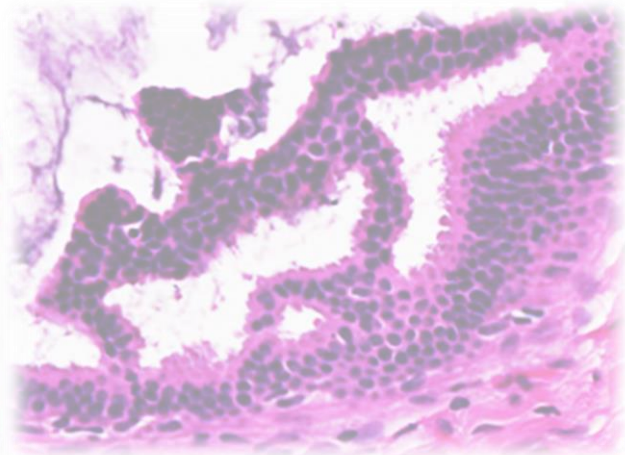
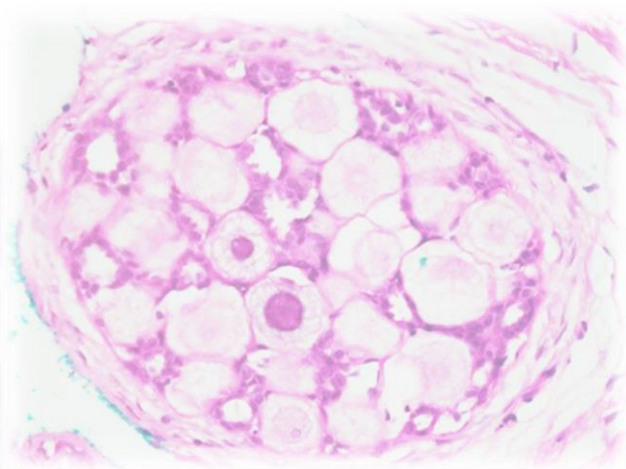
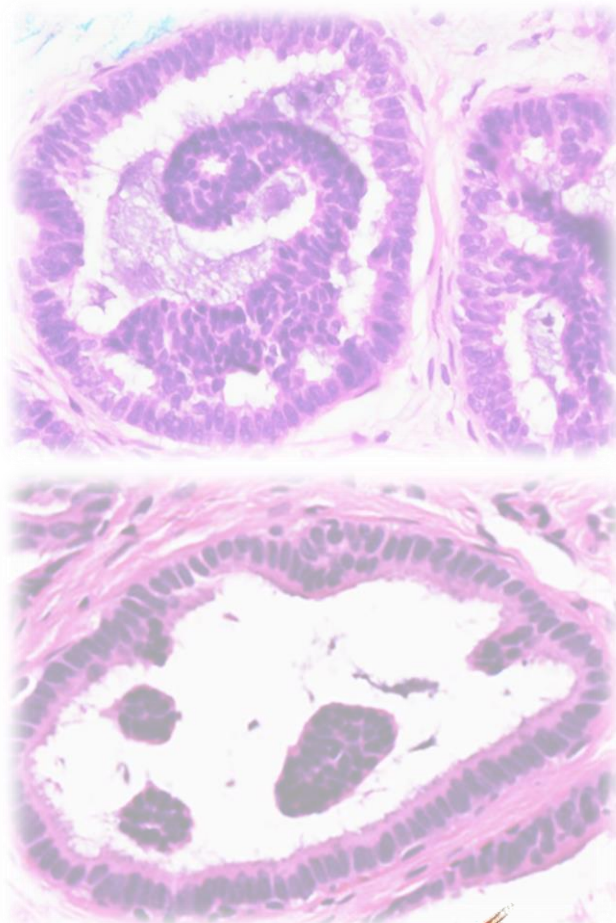
Follow-up duration ~ mean 21.9 months; median 17.1 months

Paediatric fibroepithelial lesions revisited: pathological insights

Take home messages

- ▶ Leaf-like fronds are commonly seen in paediatric fibroepithelial tumours, apart from phyllodes tumour.
- ▶ Most paediatric fibroepithelial tumours show increased stromal cellularity but this does not necessarily predict recurrence.
- ▶ Juvenile fibroadenomas appear pathologically distinct from simple and cellular fibroadenomas.
- ▶ A stromal mitotic count of >2 mitoses per 10 hpf may predict recurrent behaviour in paediatric fibroepithelial neoplasms.

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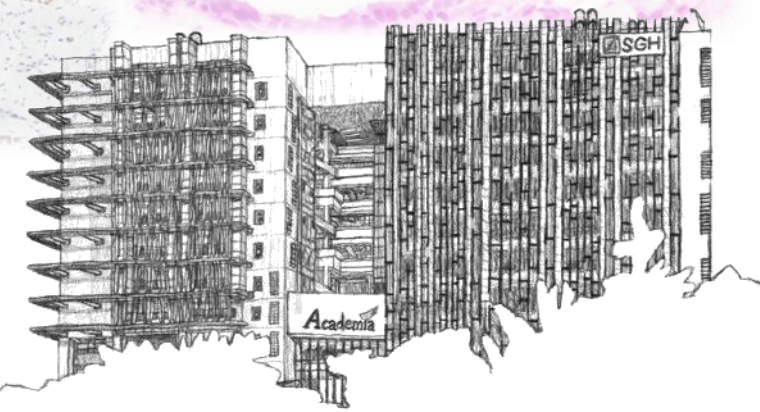


Thank you!

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PATHOLOGY

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Singapore Division



THE ACADEMIA,
SINGAPORE GENERAL HOSPITAL

09.05.2014

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