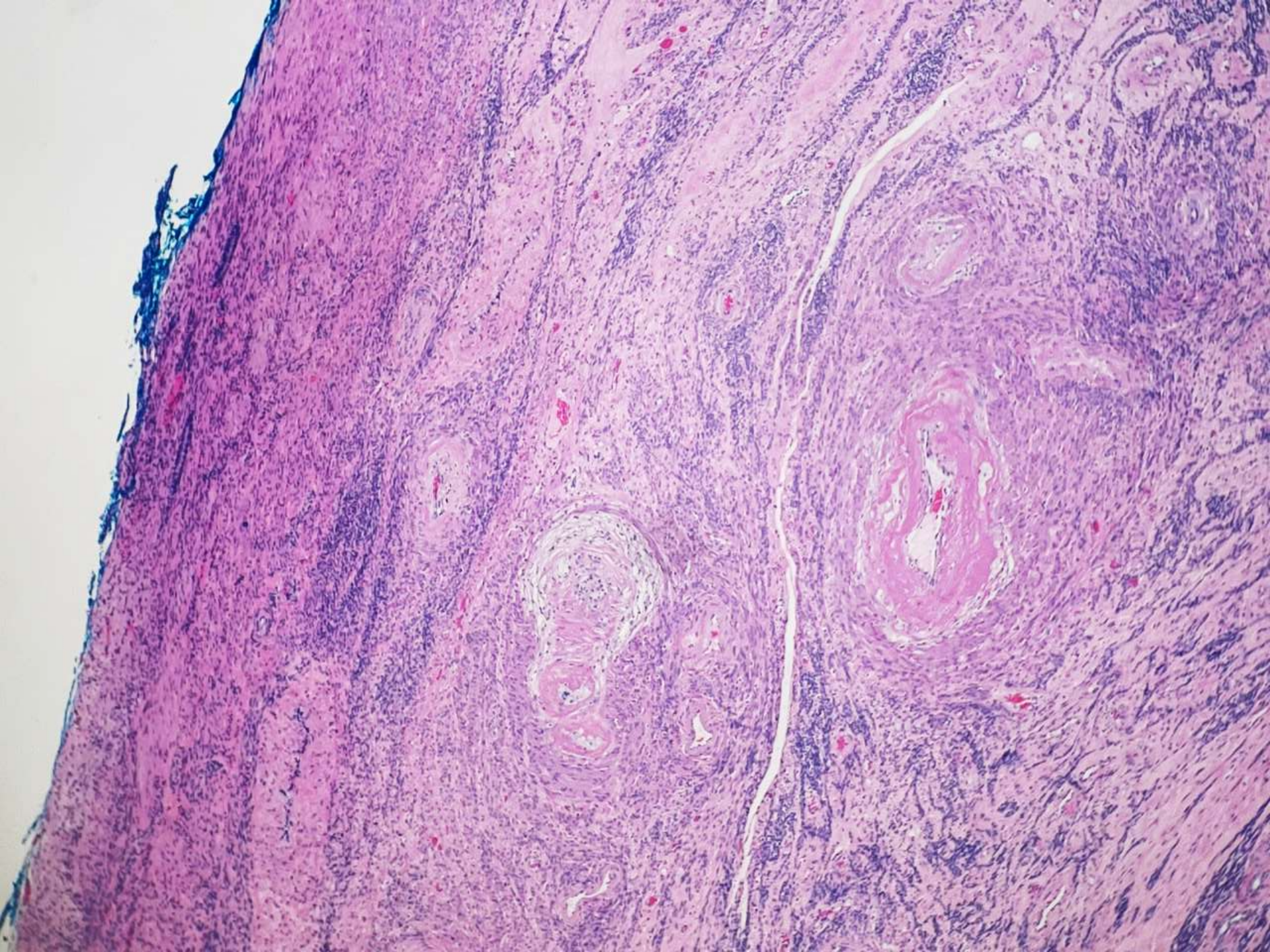
DEC 2022 DIAGNOSIS LIST

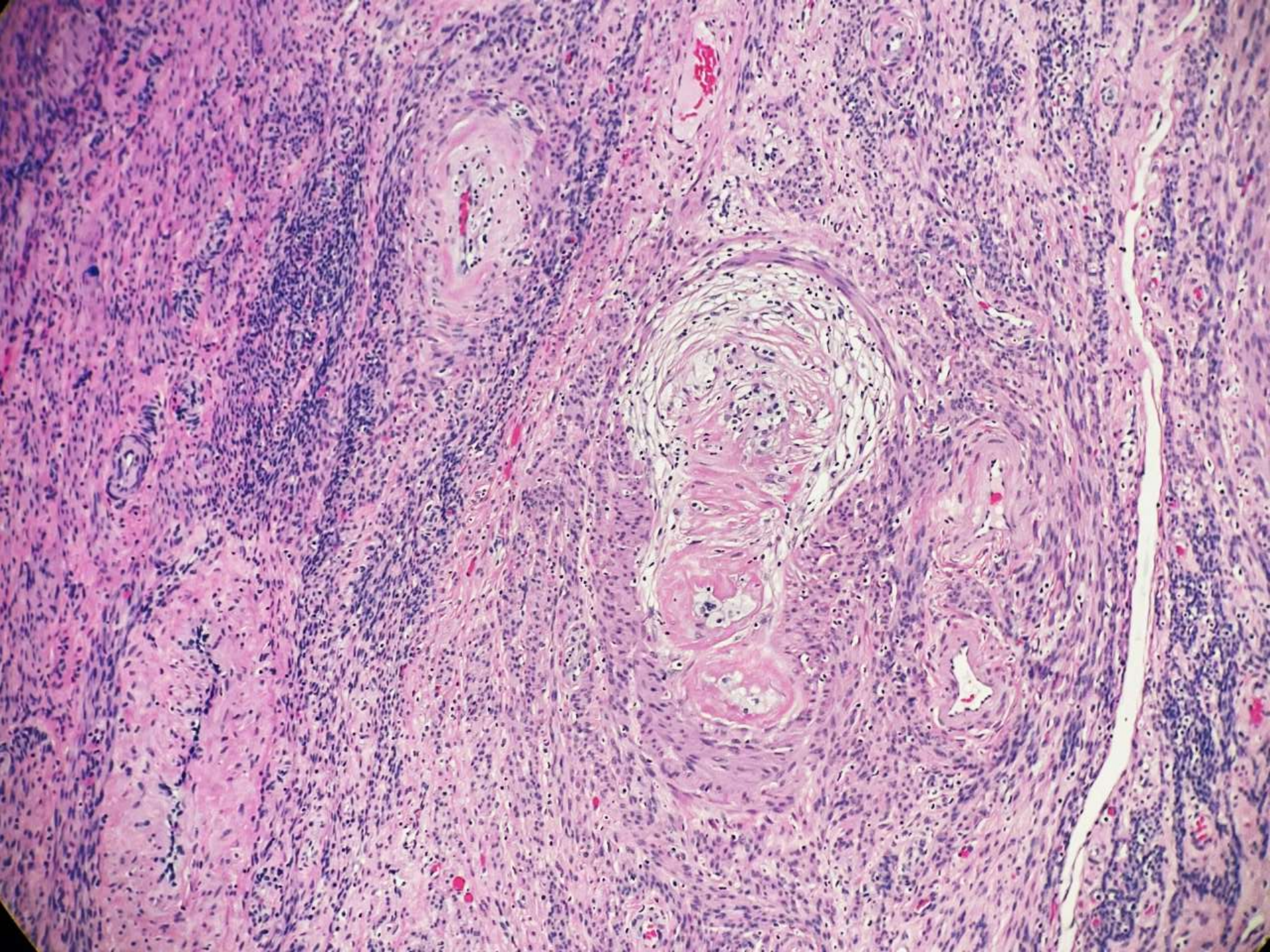
22-1201: intratumoral vasculopathy in leiomyoma due to tranexamic acid (uterus; GYN path)
22-1202: amyloid, AL-lambda (breast; breast and hemepath)
22-1203: solitary fibrous tumor (vagina; BST path)
22-1204: renal cell carcinoma with leiomyomatous stroma (kidney; GU path)
22-1205: granular cell tumor (vagina; BST path)
22-1206: eosinophilic cystic and solid renal cell carcinoma (kidney; GU path)
22-1207: metastatic breast cancer to tubular adenoma (colon; GI path)

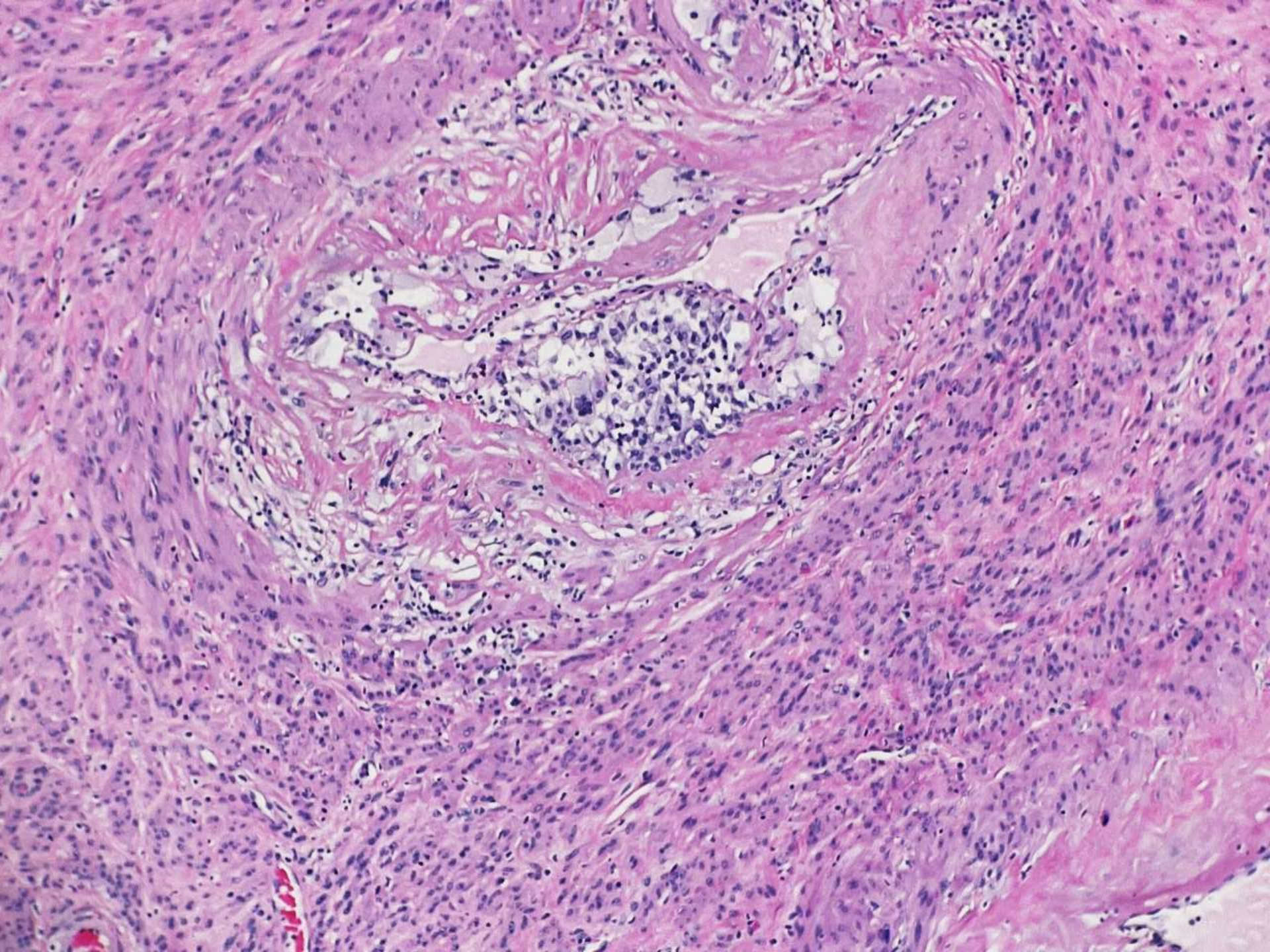
22-1201

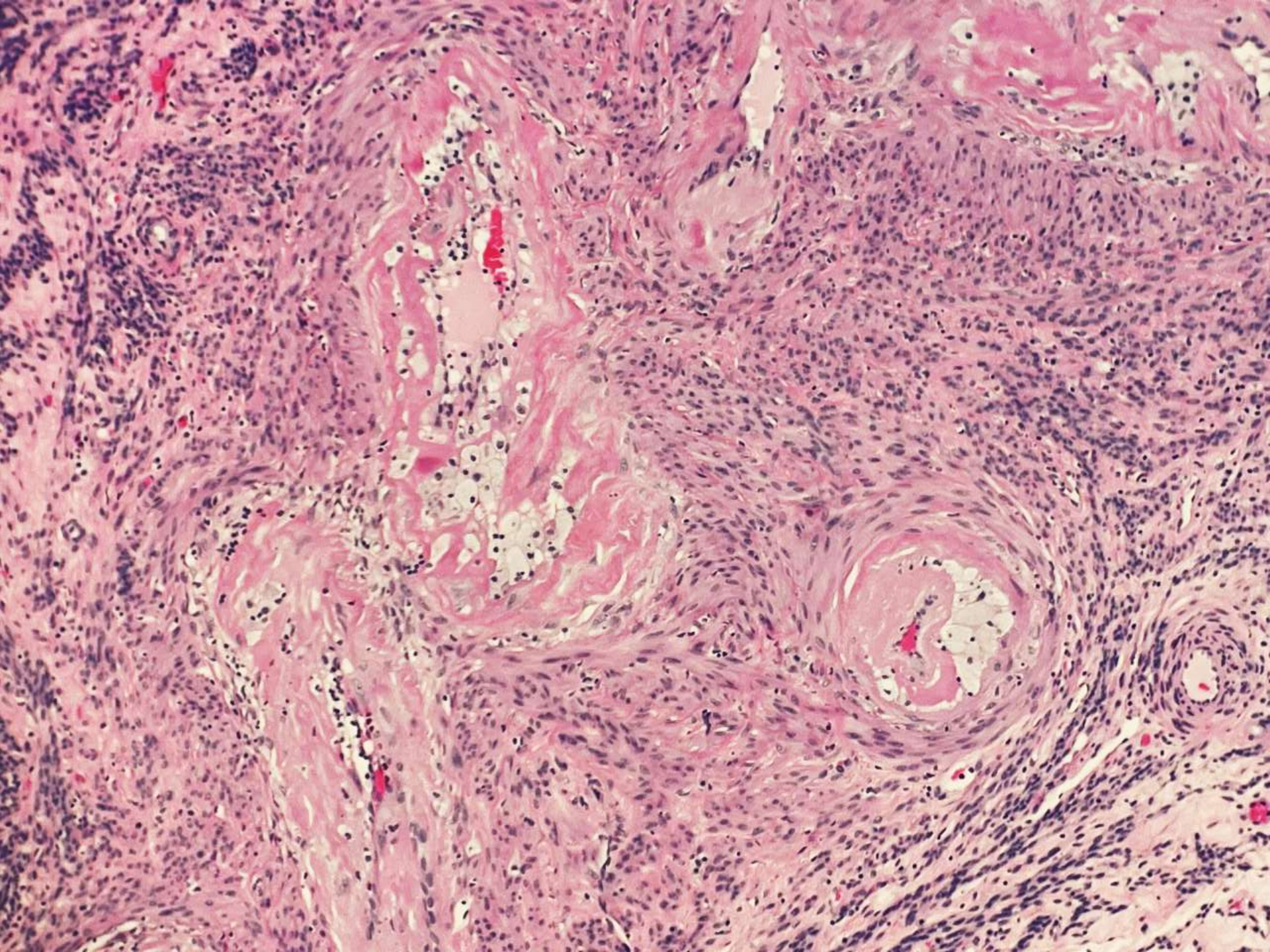
Harris Goodman; Alameda Health

30ish F with heavy menses requiring transfusion. Specimen submitted is “prolapsing fleshy mass protruding through external cervical os.”

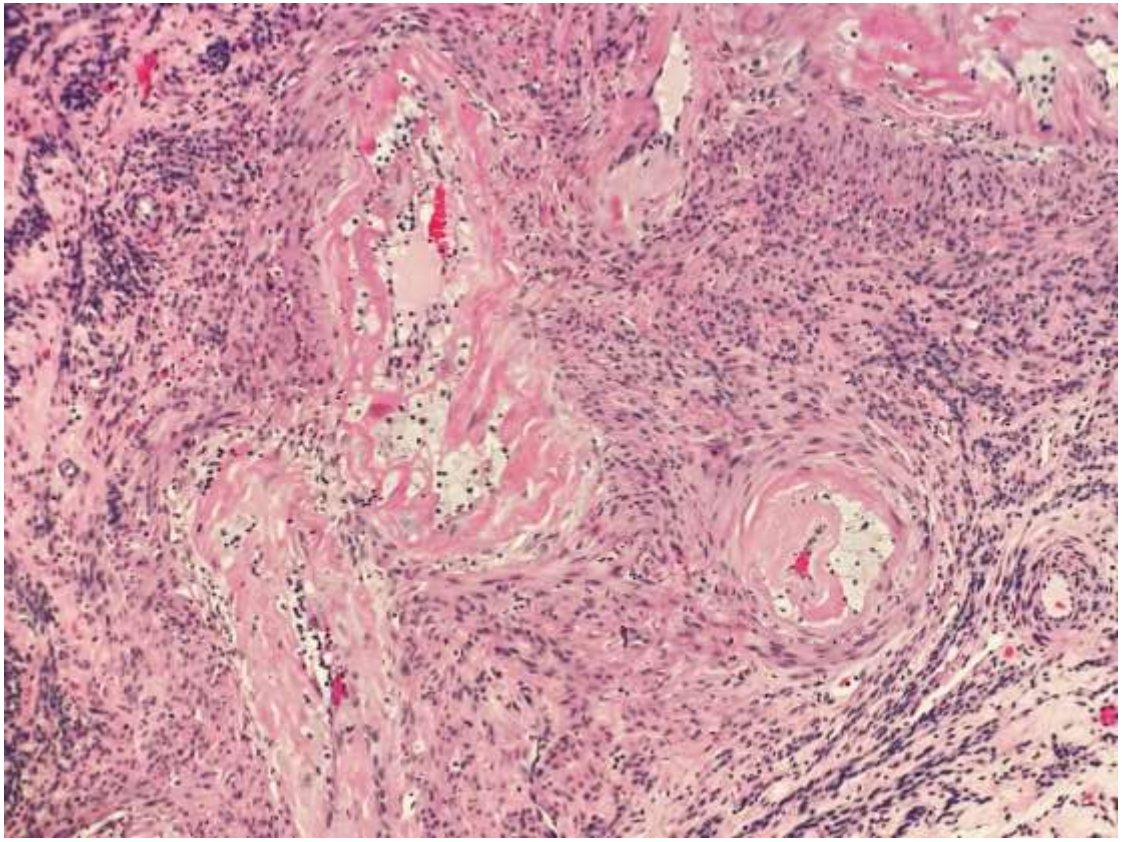








22-1201



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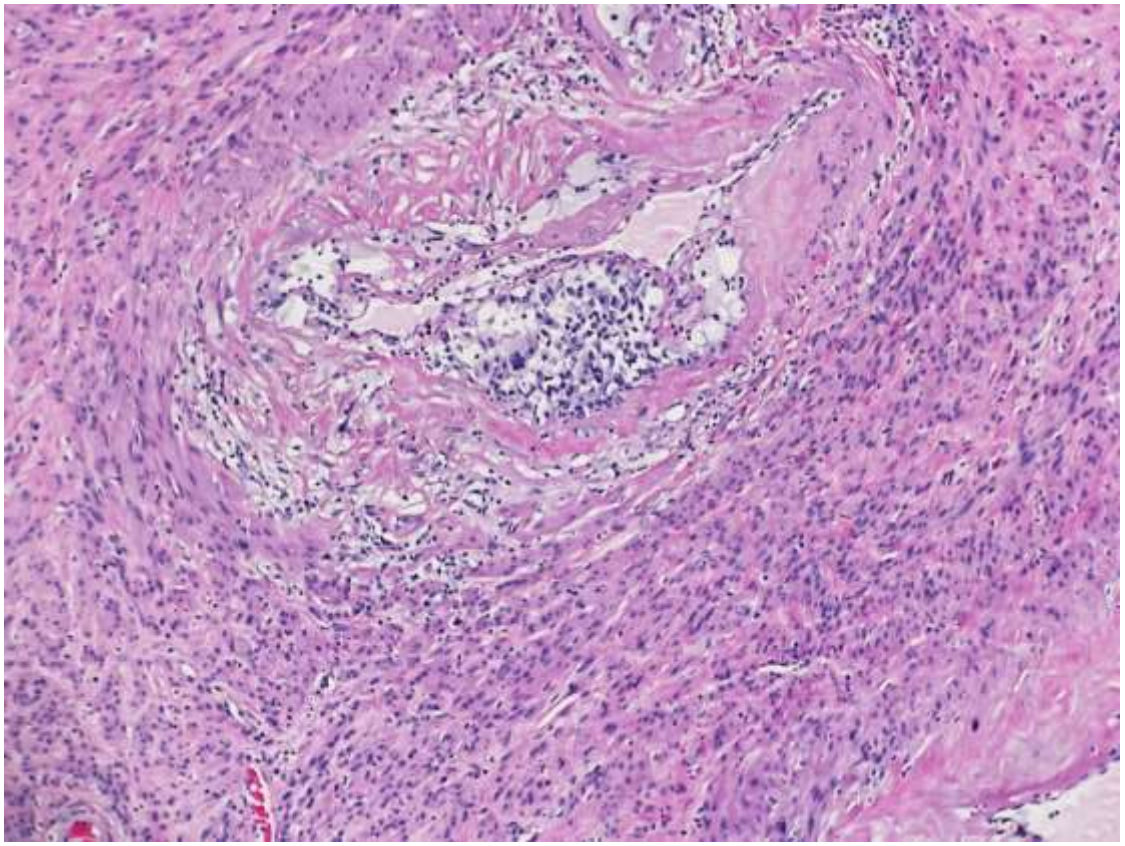
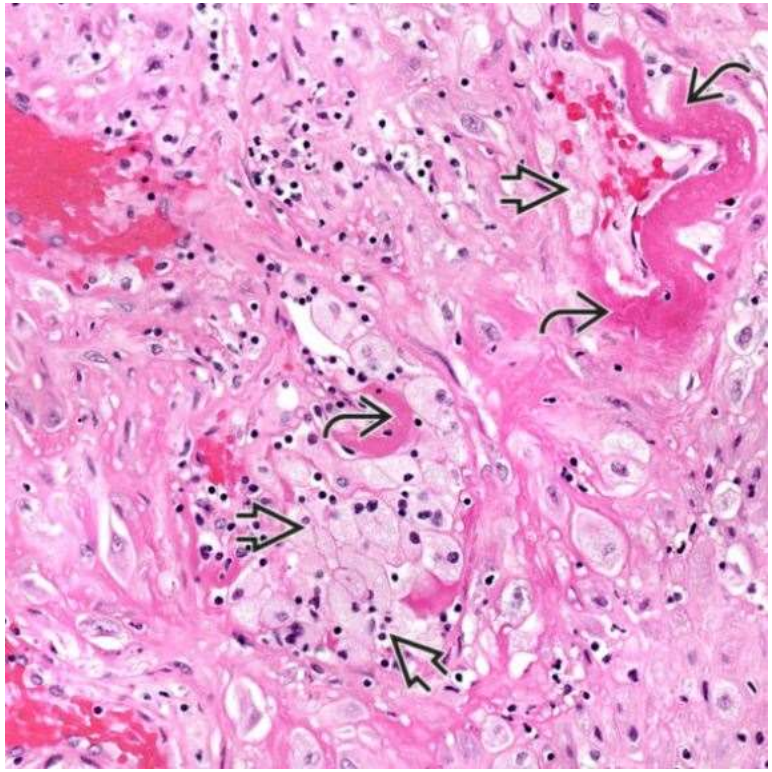


22-1201

Placenta in maternal vascular malperfusion (clinically found in hypertension, preeclampsia, HEELP [hemolysis, elevated liver enzymes, low platelets] syndrome, etc.)



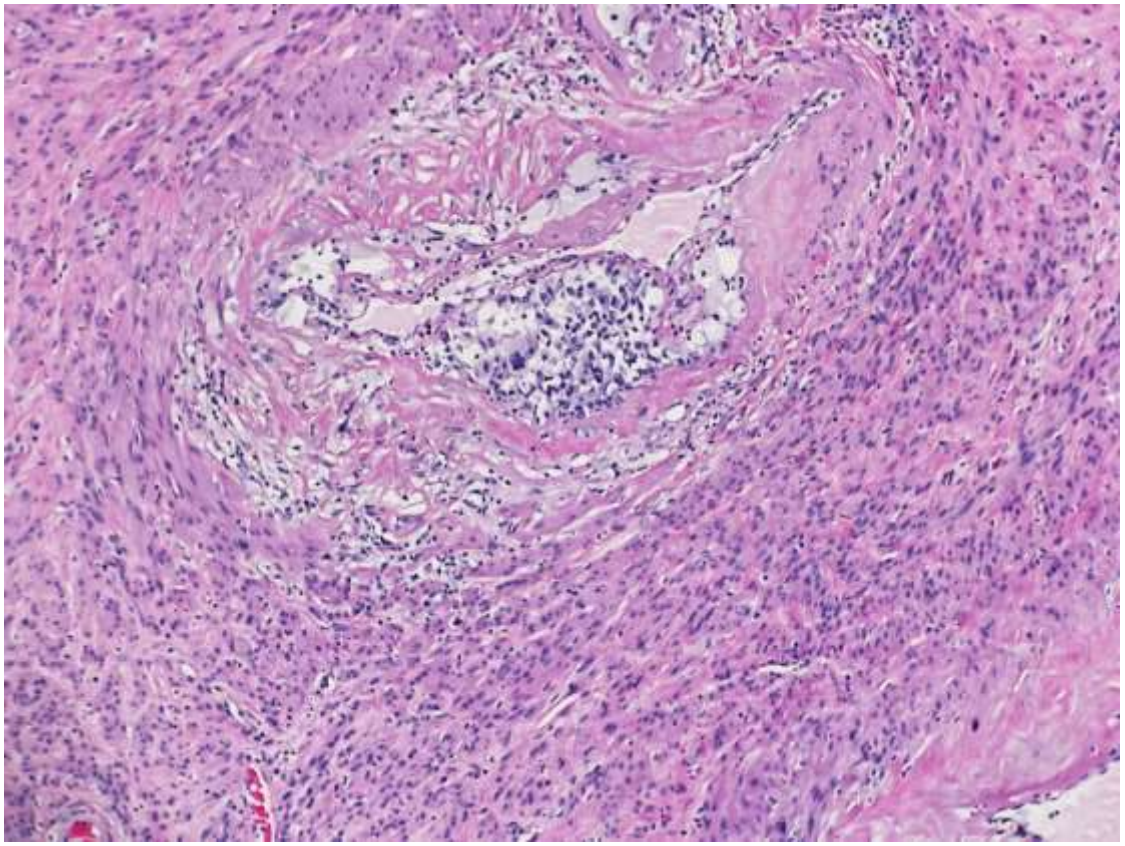
Fibrinoid necrosis of the vessel wall

Acute atherosis (foamy macrophages)

Mural hypertrophy

ExpertPath ™

22-1201



22-1201

Clinical History

- 30 ish year old woman, presented to ED a month prior, with severe hemorrhage and a prolapsing (presumed) leiomyoma. She required packed RBC transfusion. She was also treated with tranexamic acid (Cyklokapron®, Lysteda®).

22-1201

- Case Reports Int J Gynecol Pathol. 2017 Jul;36(4):364-368.
- doi: 10.1097/PGP.0000000000000337.

- **Intratumoral Vasculopathy in Leiomyoma Treated With Tranexamic Acid**

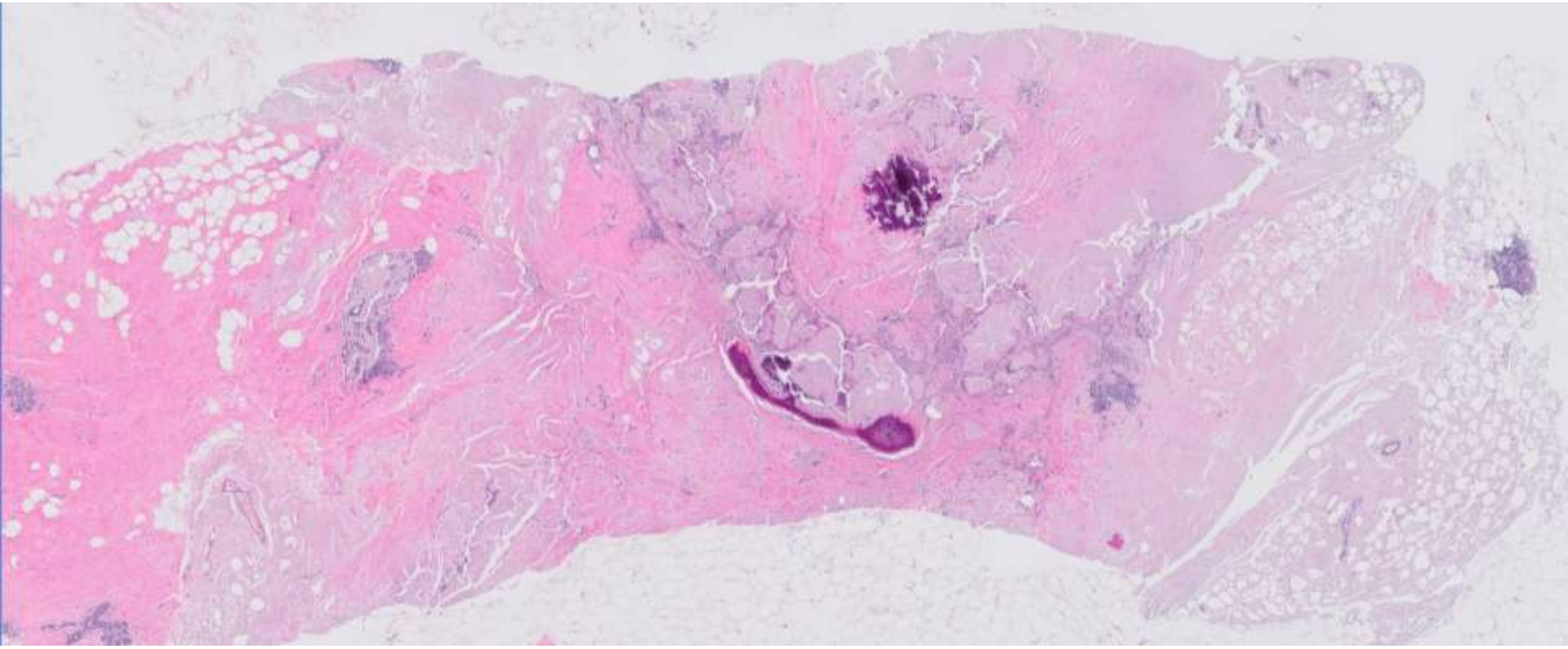
- Satoru Kudose, Hannah R Krigman

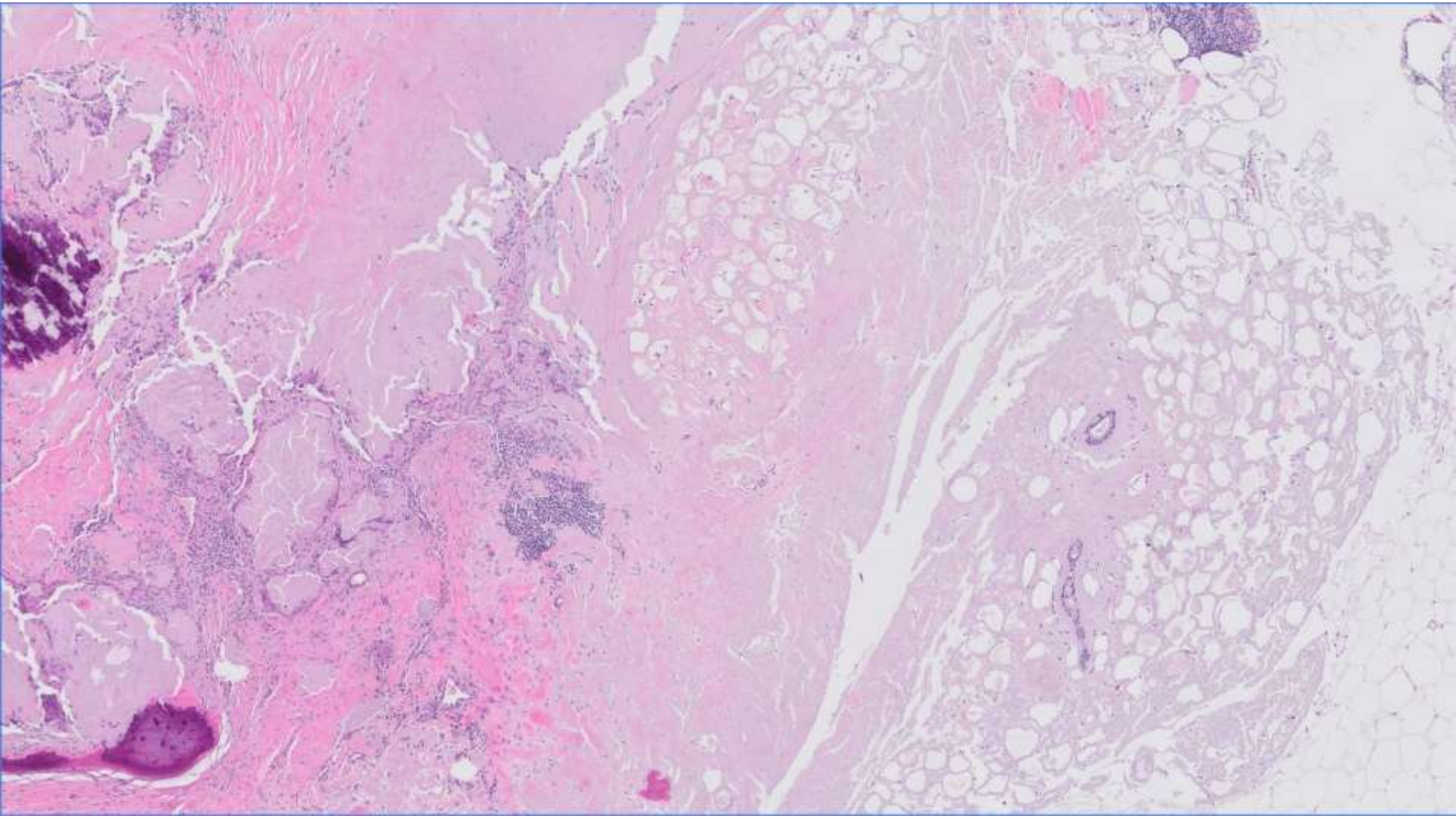
- Although intravascular thrombi and infarct-type necrosis have been reported in leiomyomas following tranexamic acid therapy, intratumoral vasculopathy resembling acute atherosis has not been reported to date in patients without exposure to gonadotropin receptor agonist. We describe a case of intratumoral vasculopathy resembling acute atherosis in a leiomyoma in a 49-year-old woman, with hereditary hemorrhagic telangiectasia and menorrhagia, treated with tranexamic acid. The patient had no exposure to gonadotropin receptor agonists. Pathologic examination of the hysterectomy specimen showed a 5.7-cm submucosal leiomyoma containing multiple arteries with fibrinoid change accompanied with abundant subintimal foamy macrophages and occasional luminal thrombi. The vascular media showed scant lymphocytic inflammation without necrosis. The leiomyoma contained numerous mast cells and edematous areas. Vessels outside of the leiomyoma showed neither fibrinoid changes nor inflammation. The patient is alive and well with no signs of systemic vasculitis. We demonstrate that intratumoral vasculopathy resembling acute atherosis may be seen in leiomyomas from patients taking tranexamic acid and postulate that this change results in vascular thrombosis, tumoral edema, and infarct-type necrosis.

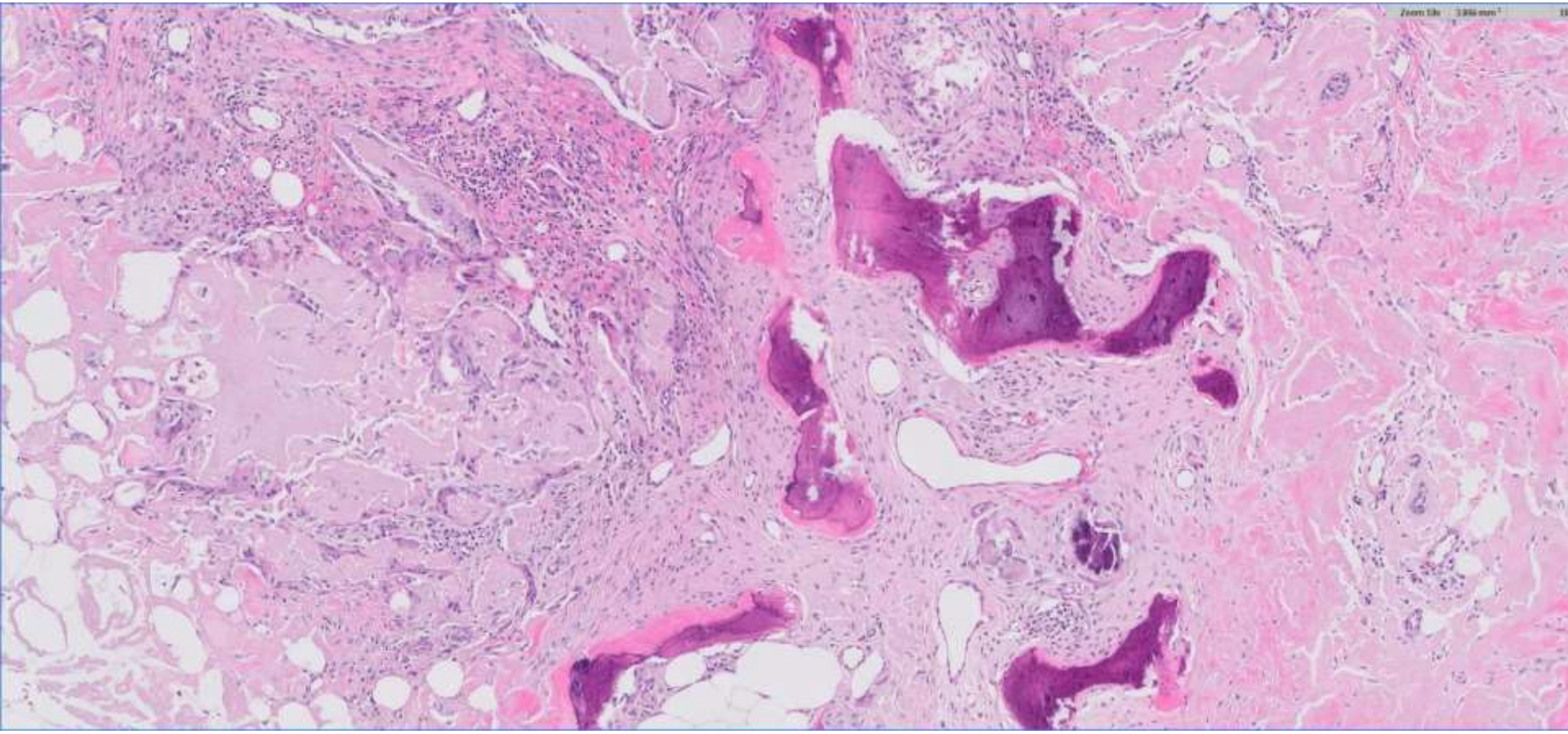
22-1202

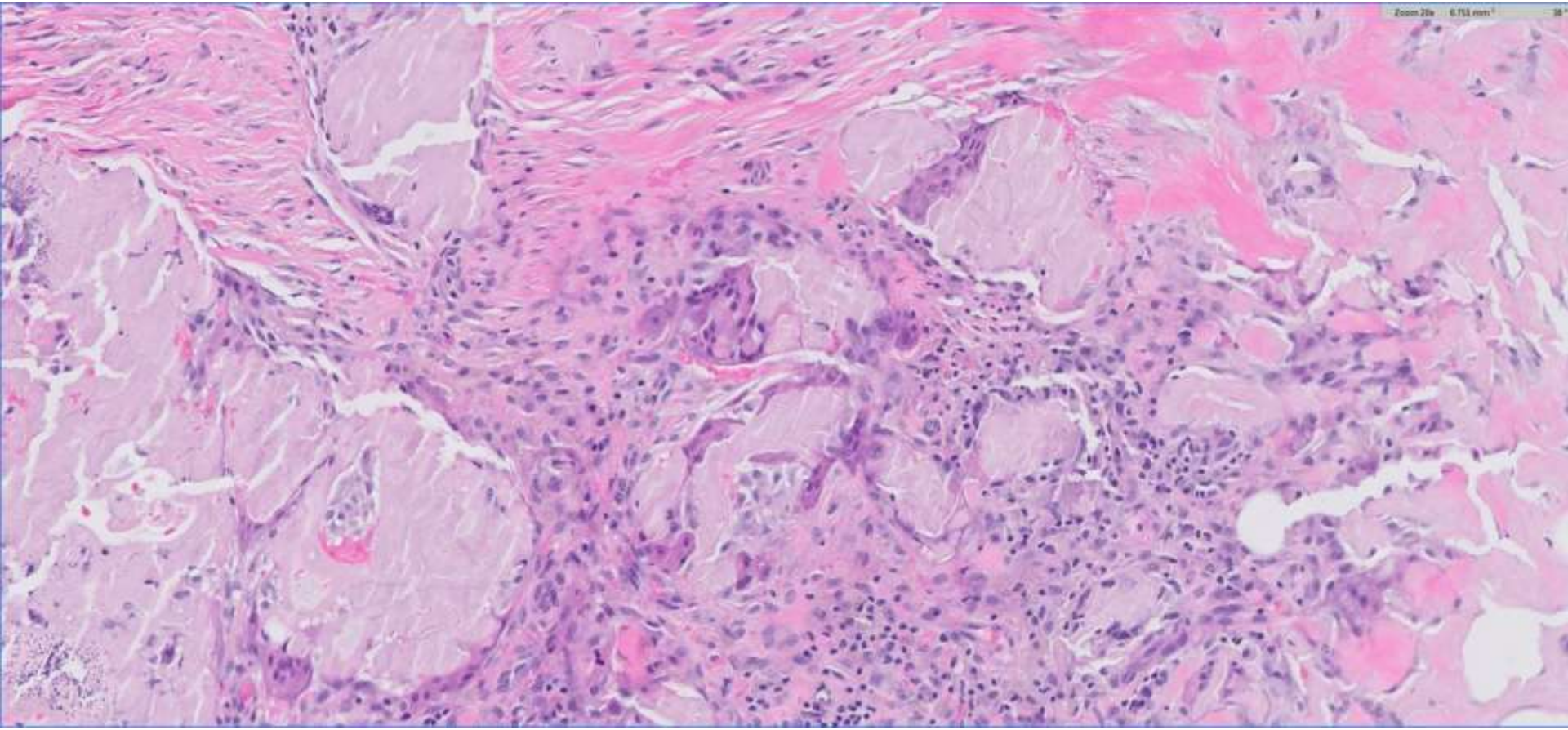
Rabia Bhalli/Megan Troxell; Stanford

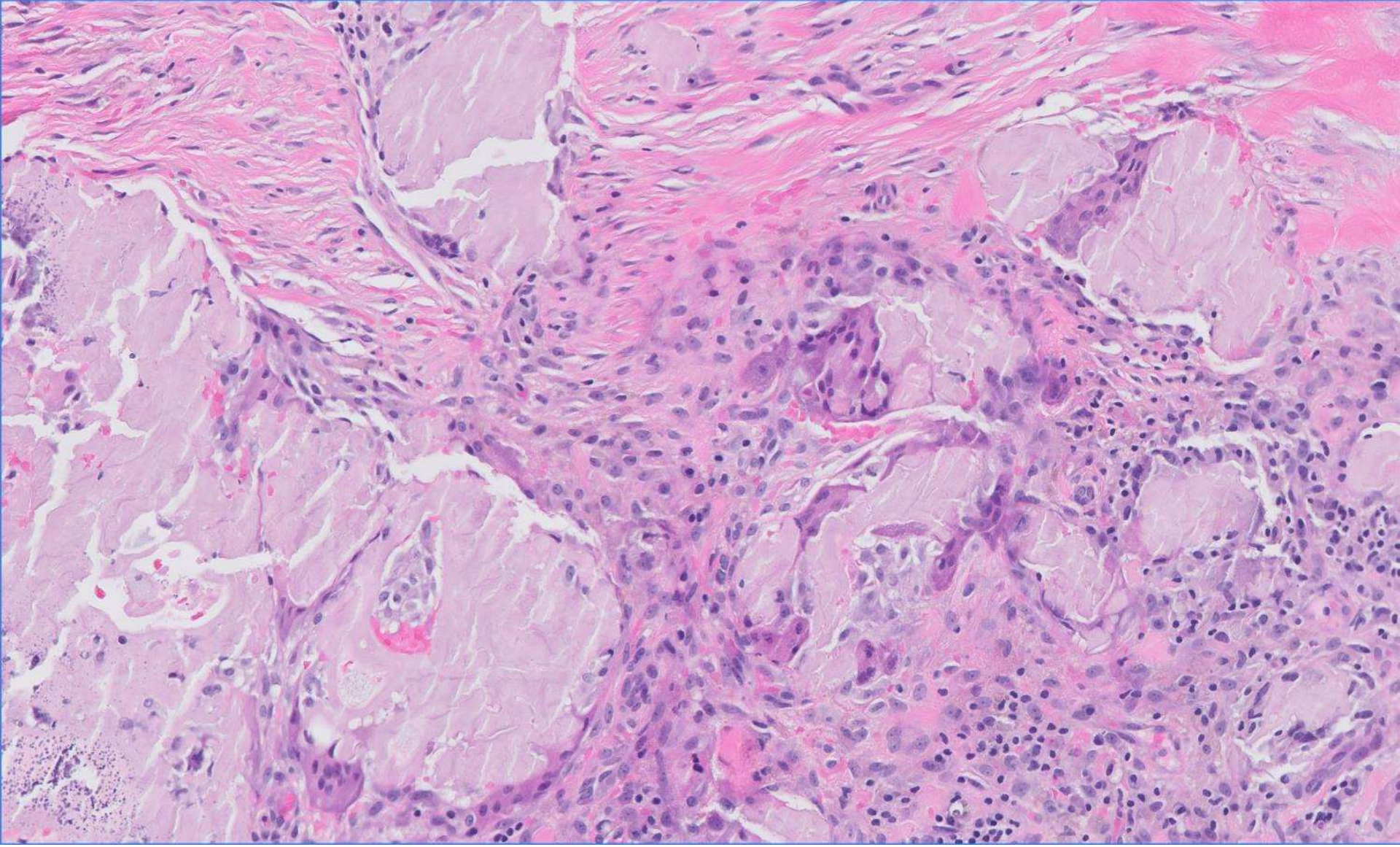
60ish F with new breast calcifications. History of auto-immune disease.

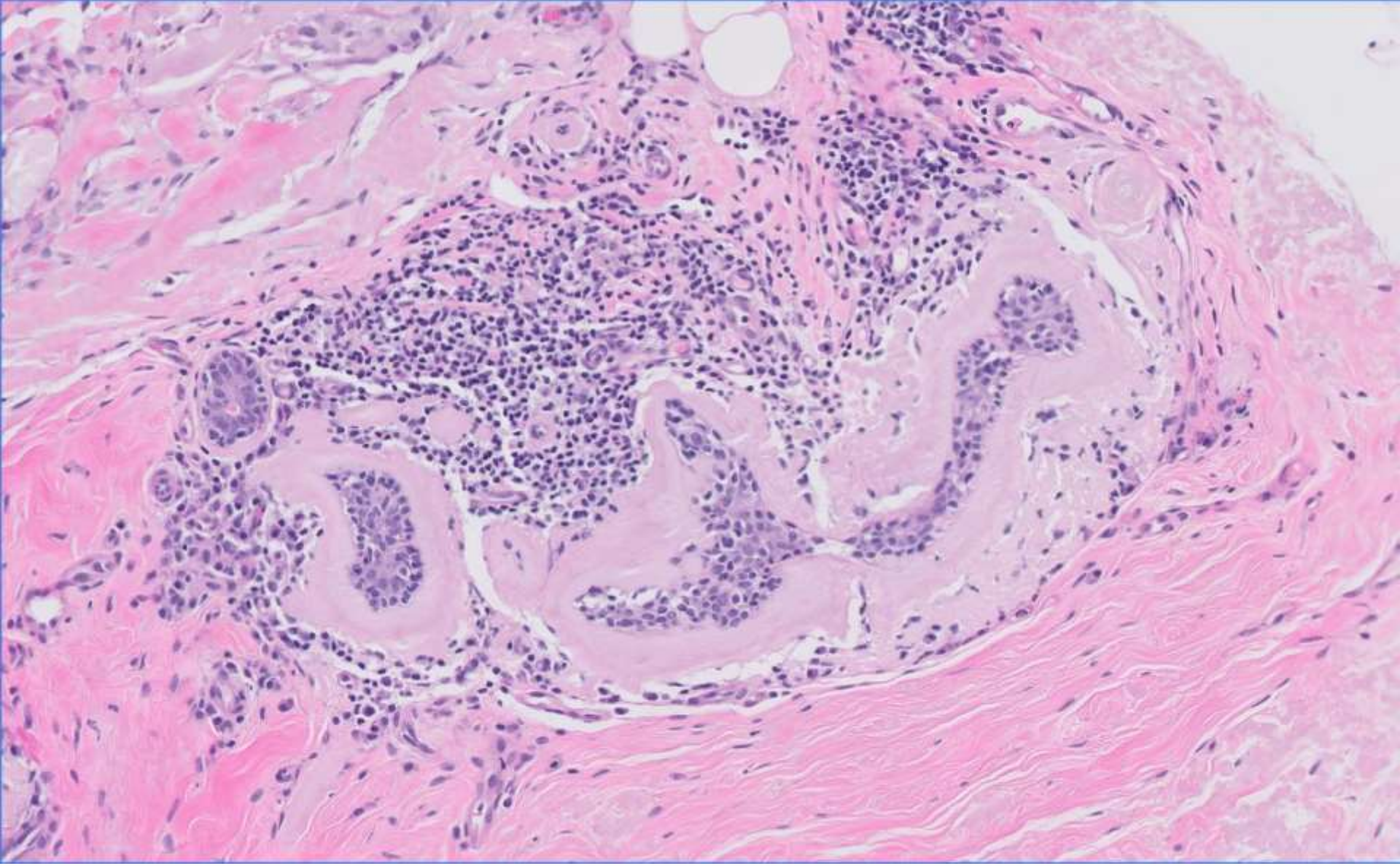


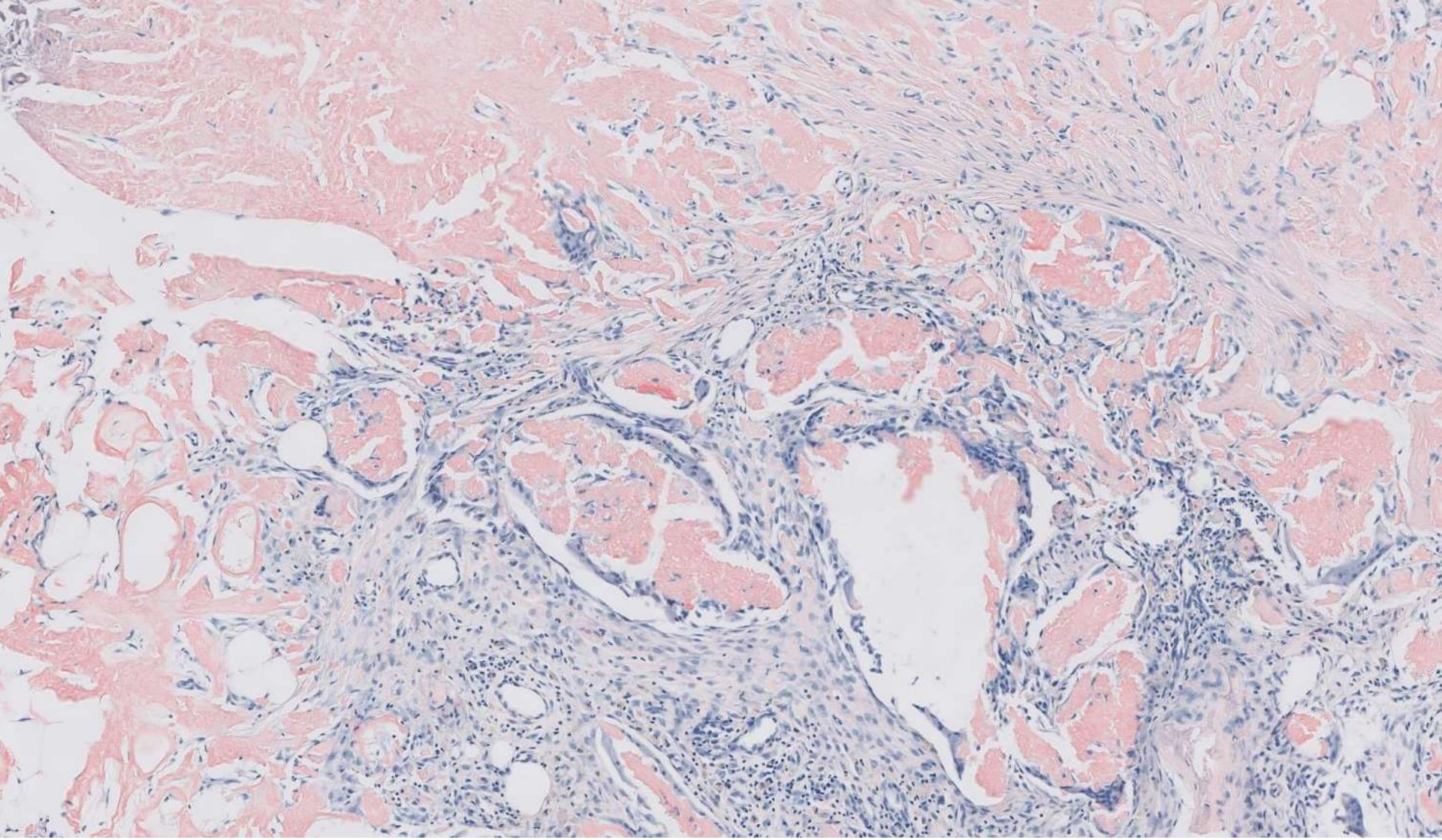












Congo Red

Diagnosis

- Amyloid
  - Dystrophic ossification and granulomatous reaction

Addendum:

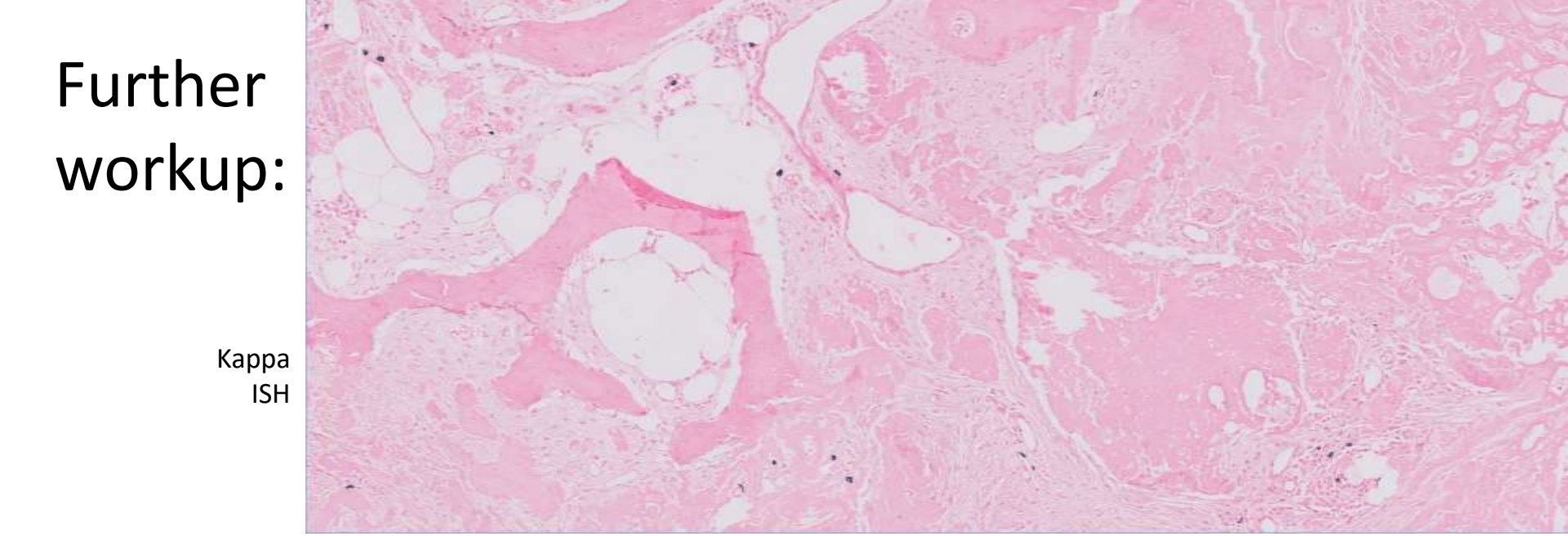
- AL-Lamba by mass spectroscopy

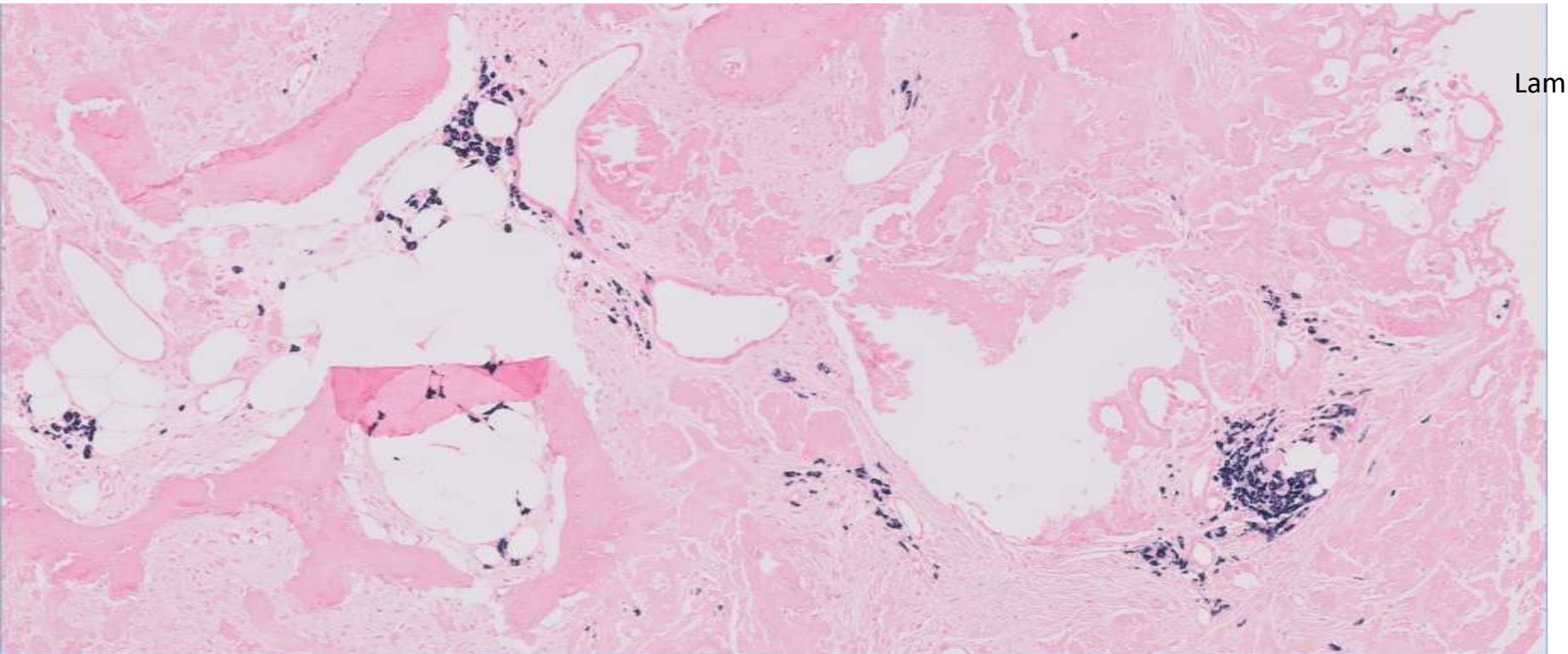
Addendum:

- Lambda restricted plasma cells, suspicious for plasma cell neoplasm

Further workup:

Kappa ISH

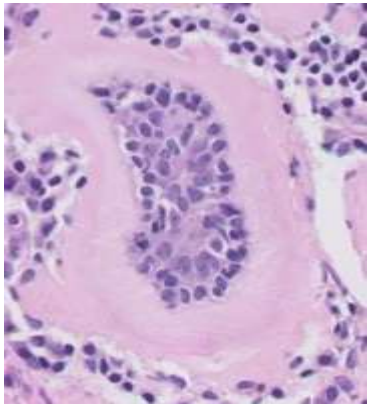


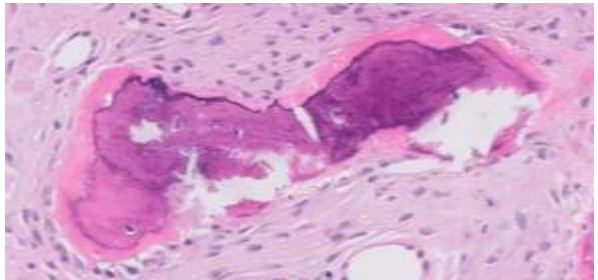


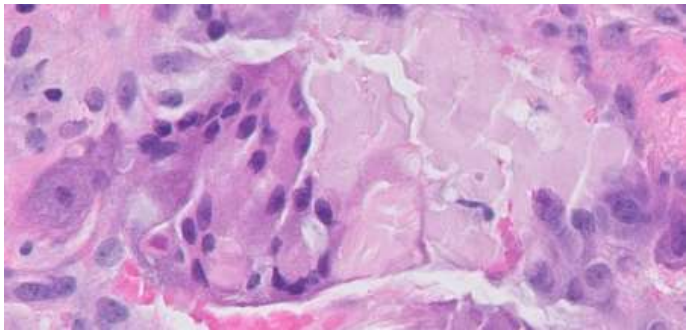
Lambda ISH

Breast amyloidosis

- Clinical: mass (~50%), calcifications (~20%)
  - Never suspected clinically, radiologically→ RARE
  - Mean age 60-67
  - Can be Bilateral
- Involves interstitium/fat most often, but also
  - Periductal
  - Vascular, perivascular
  - Lymph nodal
- May hide in BBT like fibrocystic, mimic fat necrosis
- Rarely coincident with carcinoma
- Associated calcification, ossification, multinucleated giant cells





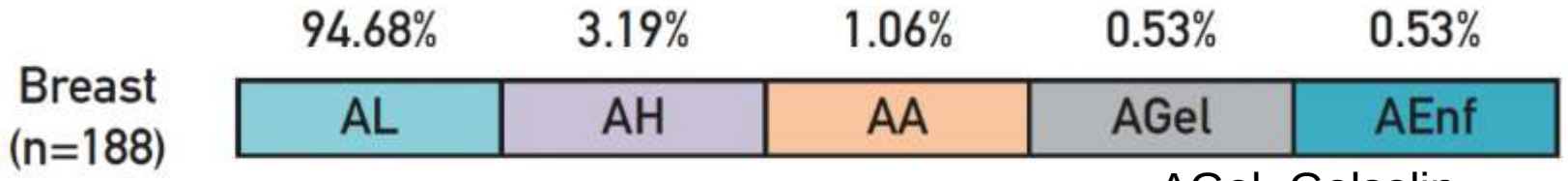


Breast amyloidosis

- Associated with systemic amyloid in ~50%
- Associated with localized or systemic hematolymphoid process in ~50%
  - Esp. MALT or other low grade B-cell lymphomas
- Workup: Congo Red or your favorite amyloid stain
  - Amyloid typing (mass spec…)
  - Characterization of any accompanying lymphs, plasma cells
  - If AL: Serum free light chain, SPEP, IFE, BMBx
    - Local vs systemic?
- Outcome: follows LG lymphoma, in those patients

Breast amyloidosis: large series

Study	N	AL-kappa	AL-lambda	Other	Unknown
Rocken 2001 lit review	44	10	5	IgA-1 AA-2 26 unknown	7 with cancer (1-ILC, 6 ductal)
Said Mayo 2013	39	15	14	AHL-1 14 unknown	22 hematolym
Duckworth CCF 2021	23	4	2	Ig-NOS-3 14 unknown	2 with ILC 10 lymphoma
Stanford unpublished	14	1	3	10 unknown; 3-K,4-L in breast monotypia	7 hematolym



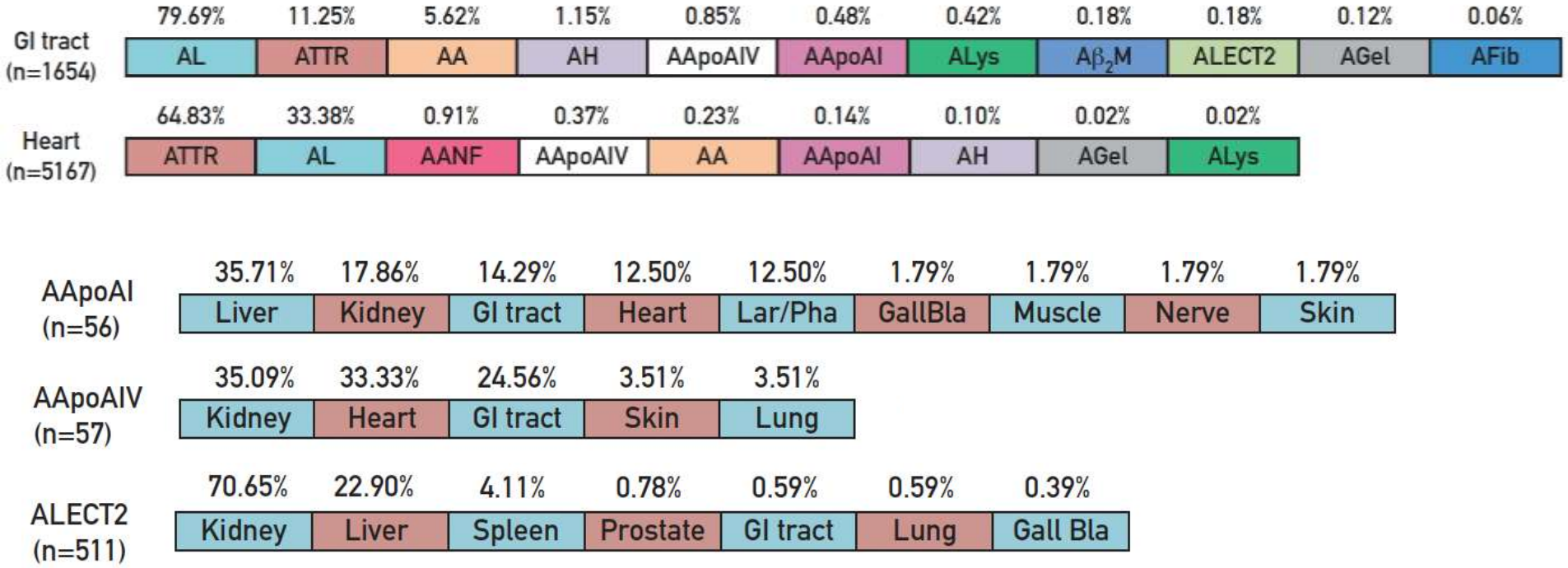
AGel=Gelsolin
AEnf=Enfuvirtide (Fuzeon) anti-retroviral

Dasari. Mayo Clin Proc. 2020;95(9):1852-64

Amyloid Typing by Mass Spectrometry in Clinical Practice: a Comprehensive Review of 16,175 Samples

Mayo Clin Proc. 2020;95(9):1852-64

Surendra Dasari, PhD; Jason D. Theis, BS; Julie A. Vrana, PhD; Karen L. Rech, MD; Linda N. Dao, MD; Matthew T. Howard, MD; Angela Dispenzieri, MD; Morie A. Gertz, MD; Linda Hasadsri, MD, PhD; W. Edward Highsmith, PhD; Paul J. Kurtin, MD; and Ellen D. McPhail, MD



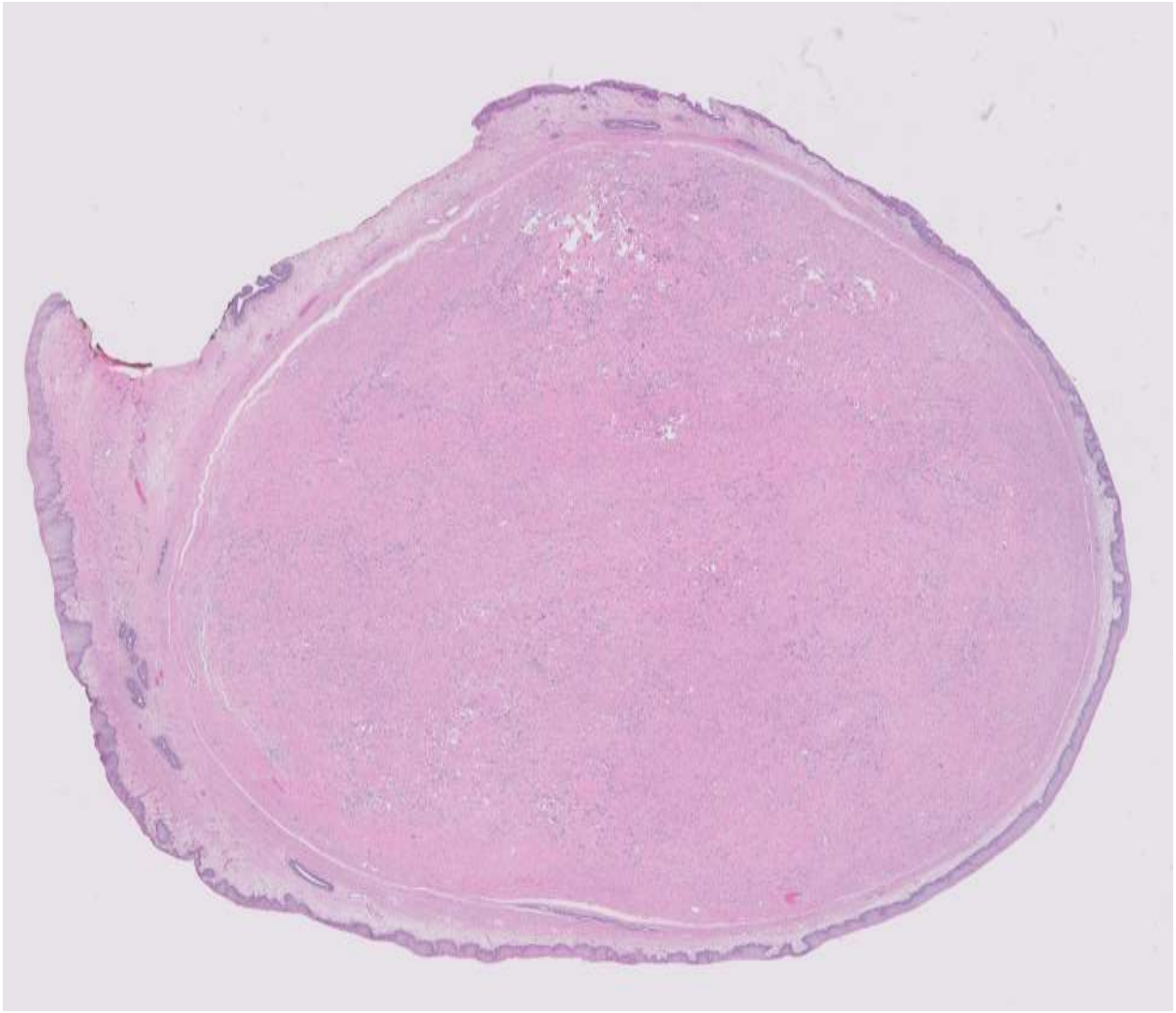
Additional References

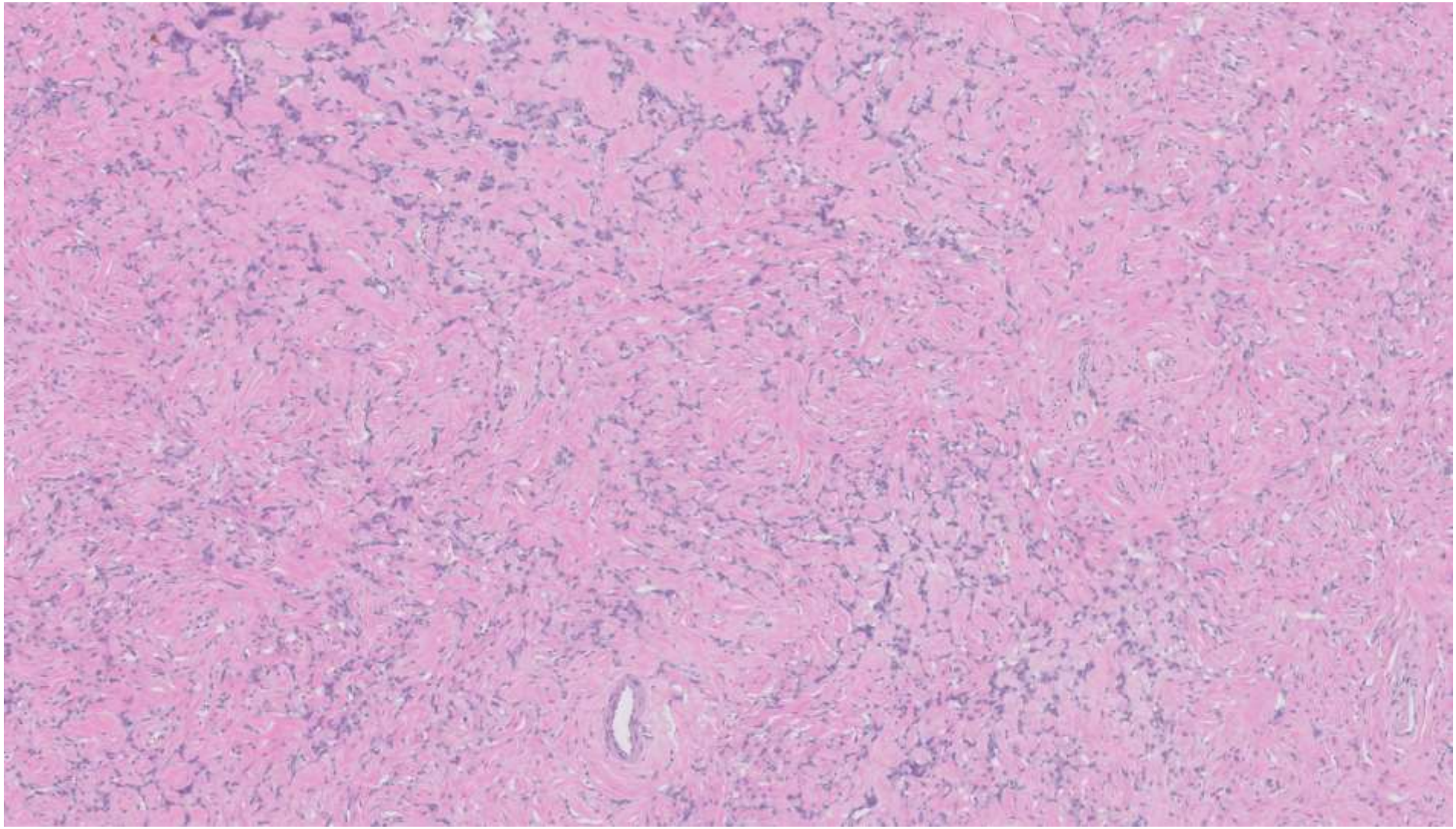
- Said et al. Amyloidosis of the breast: predominantly AL type and over half have concurrent breast hematologic disorders. Modern Pathology. 2013; 26; 232–38.
- Duckworth et al. Amyloid in the breast: retrospective review with clinicopathological and radiological correlation of 32 cases from a single institution. Histopathology 2021; 79:57–66.
- Rocken et al. Amyloidosis of the Breast. Virchows Arch. 2002;440:527–535

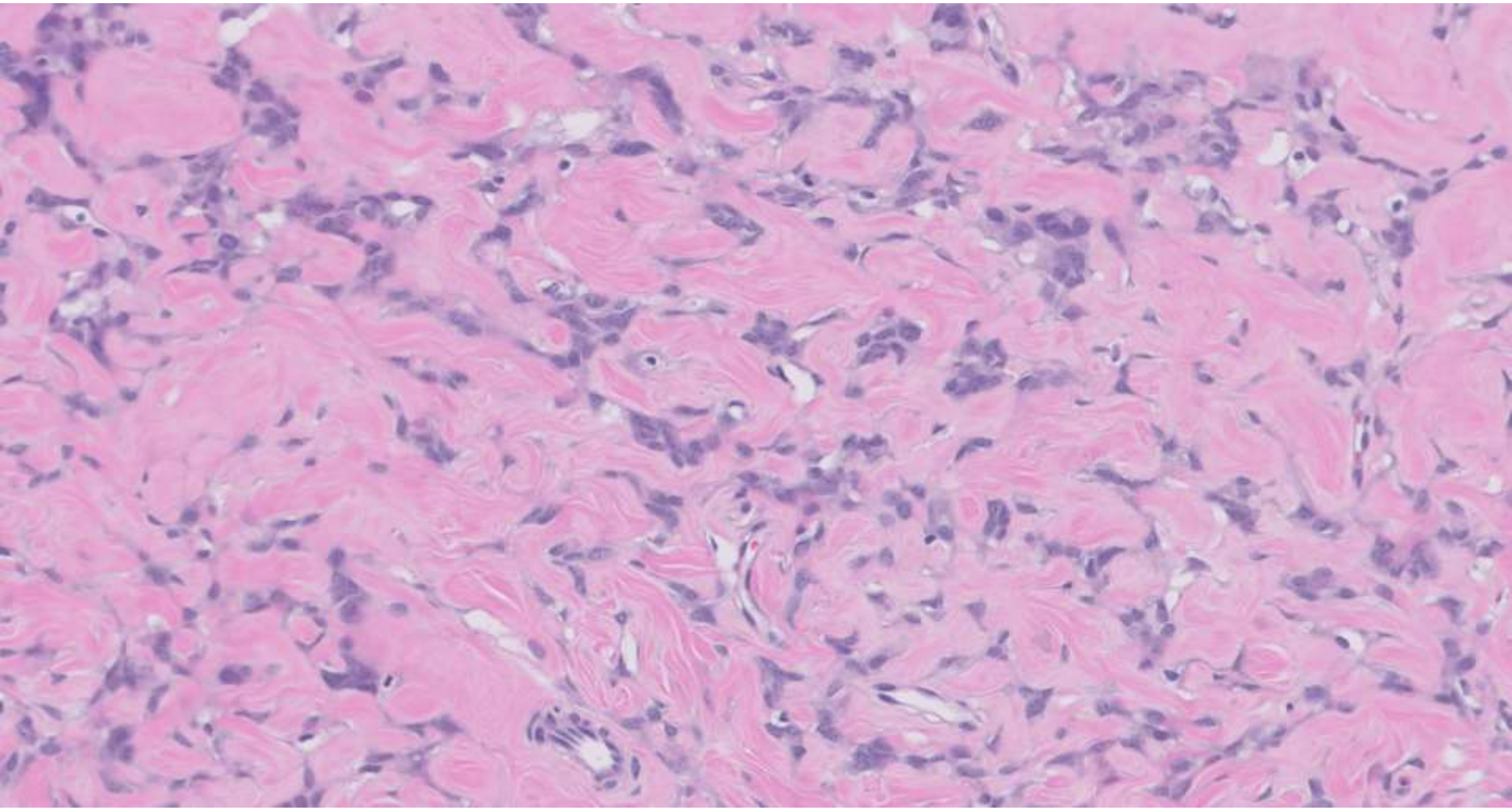
22-1203

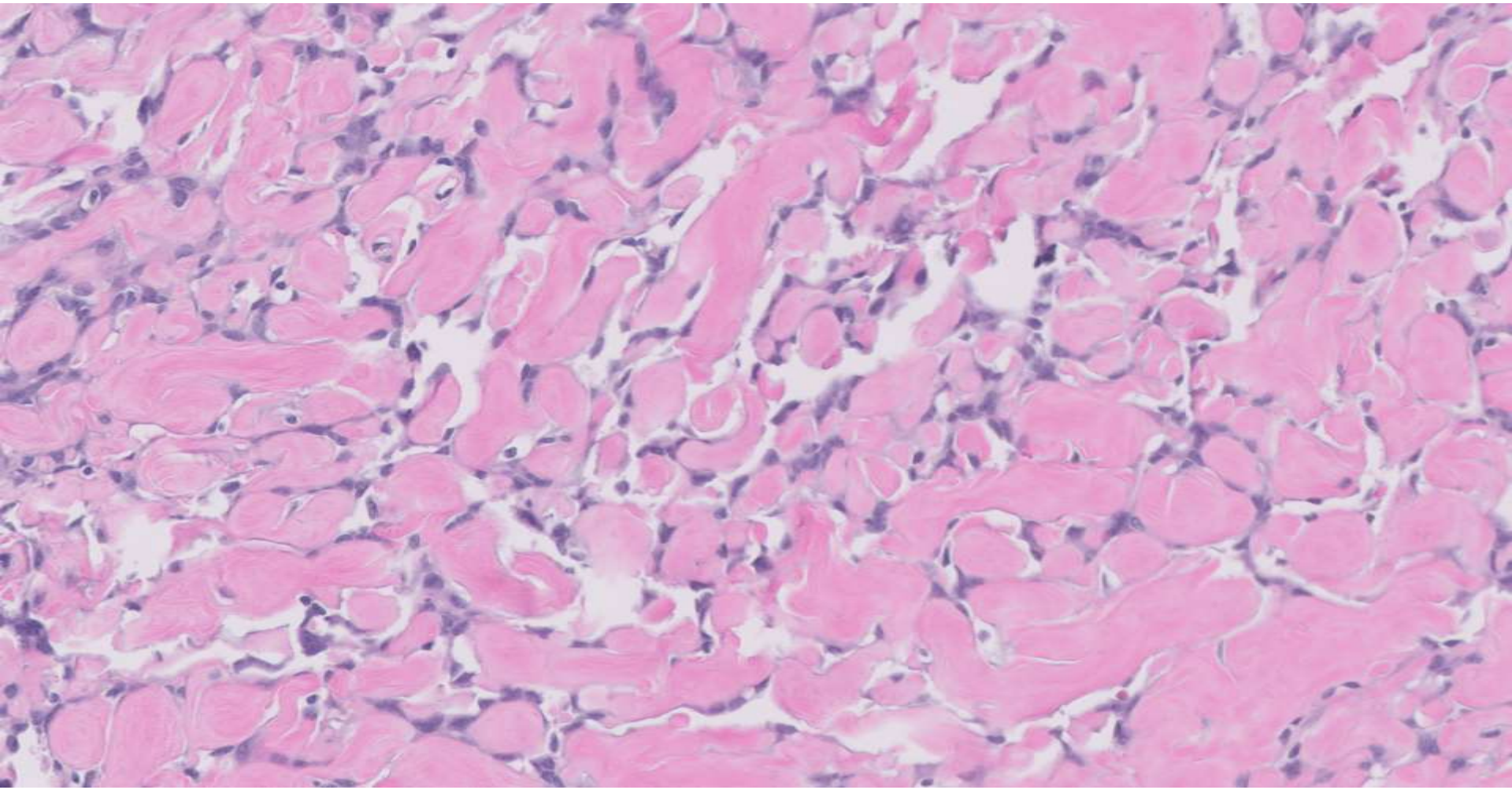
Troy Tenney/Teri Longacre; Stanford

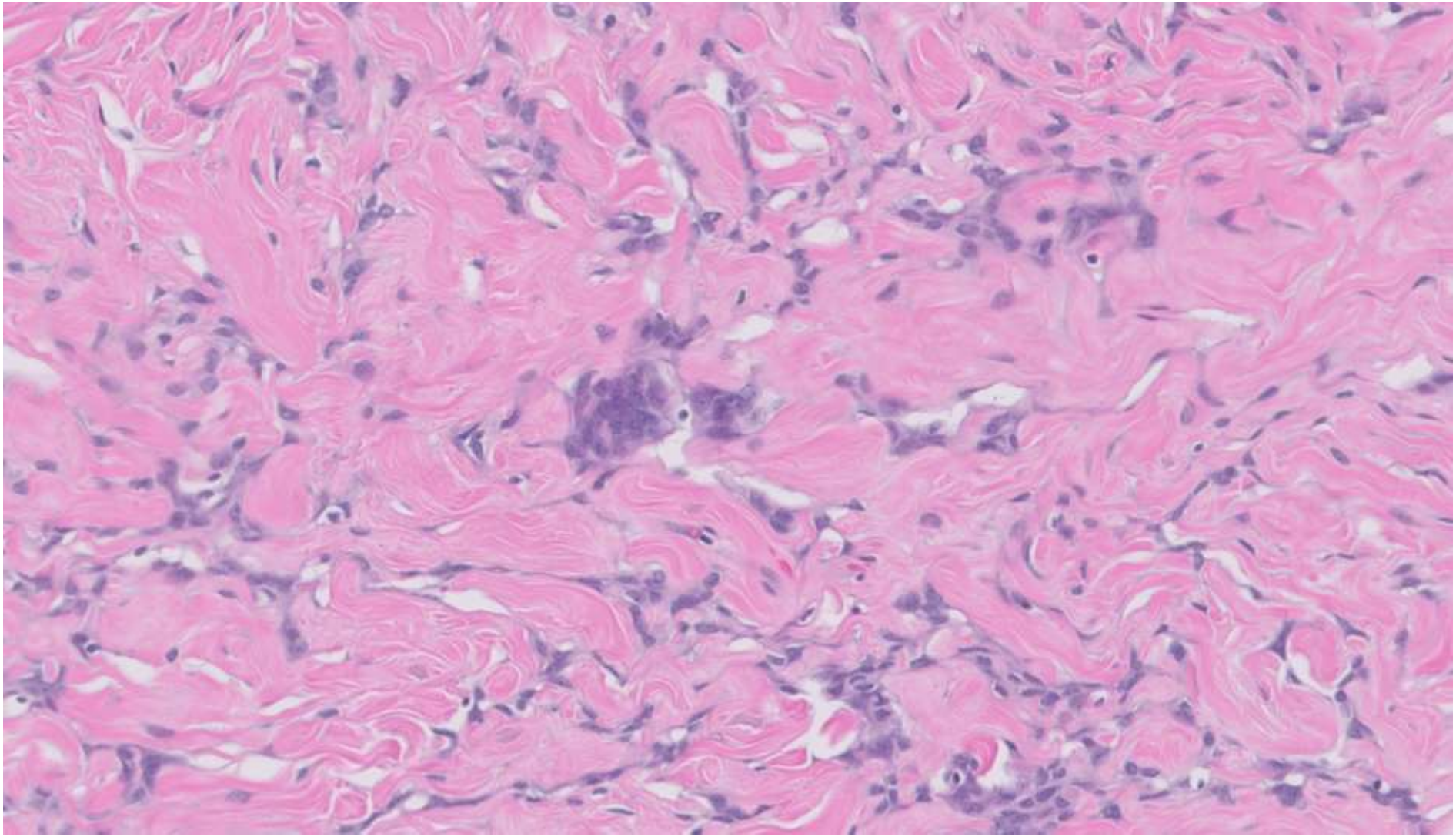
Post-menopausal F with h/o vaginal mass and hematuria. Vaginal mass submitted.

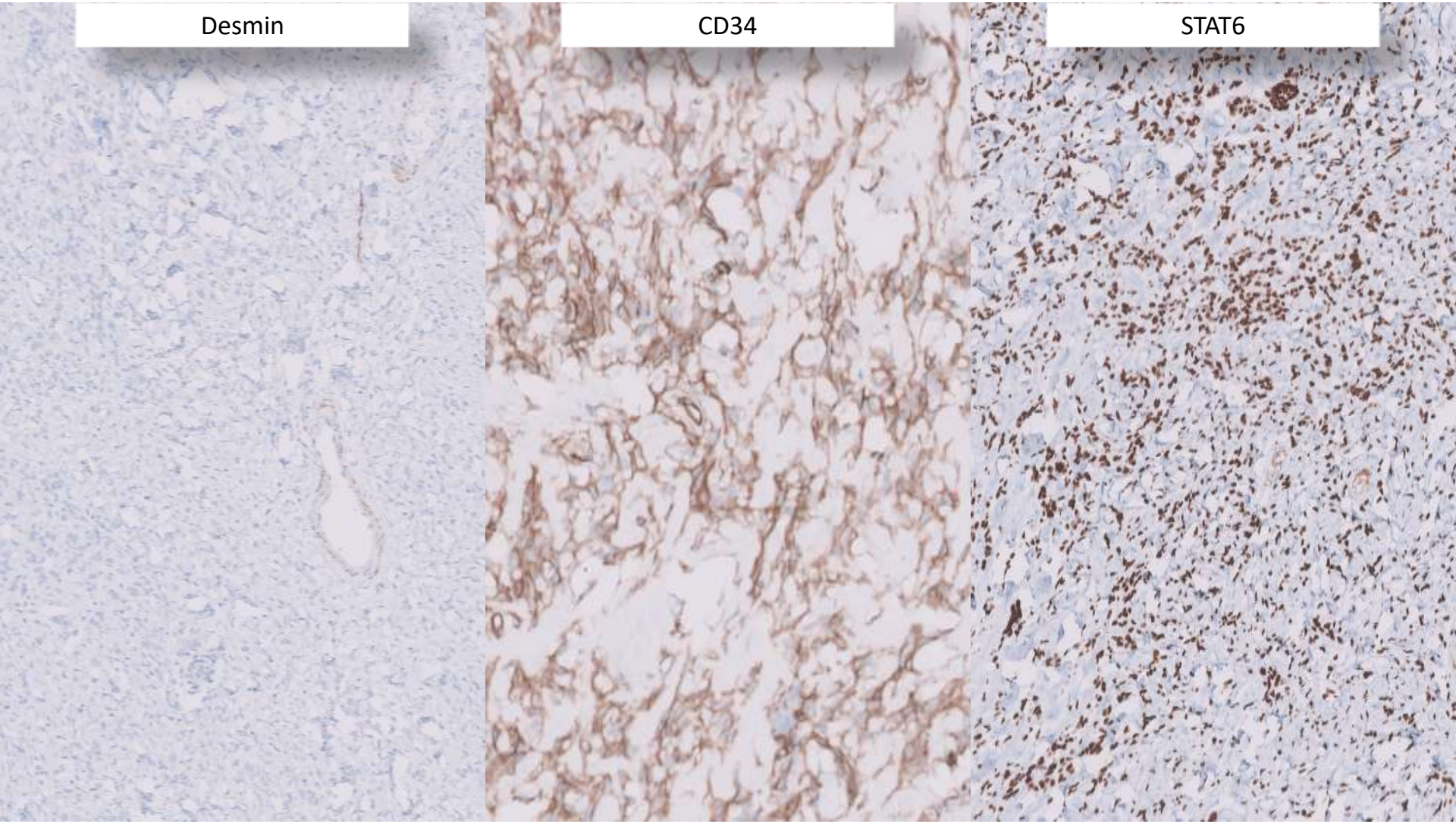











Desmin
CD34
STAT6

Solitary Fibrous Tumor of the Female Genital Tract

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An uncommon tumor in an uncommon site

Fibroblastic neoplasm, originally described in the pleura

Now well established extrapulmonary sites

Most common site (in the GYN tract): Vulva

Size: 1 to 13.5 cm (most <5cm)

SFT 90% nuclear expression of STAT6

Most other tumor types were negative for STAT6

- Focal weak staining in:
- Inflammatory myofibroblastic tumours (1/3; 33%)
- Fibroma/thecoma (3/56; 5%)
- Sclerosing stromal tumour (1/3; 33%)

Table 1. Clinical features of gynaecological solitary fibrous tumour (SFT)

Case	Age (years)	Clinical presentation	Location	Size (mm)	Histological features	Mitoses/ 10 HPFs	STAT6 IHC	CD34 IHC	Referring pathologist's differential diagnosis	Final diagnosis	Treatment	Metastasis	Follow -up interval	Outcome
1	22	Labial mass slowly increasing in size over 2 years	Vulva	50	Classic features with cytological atypia	4	Positive	Positive	Angiomyofibroblastoma, cellular angiofibroma, epithelioid sarcoma	Atypical SFT	Excision, positive margin	None	NA	NA
2	57	Vulvar mass, present for 2 years, recent rapid increase in size	Vulva	100	Classic	5	Positive	Positive	Monophasic synovial sarcoma	Malignant SFT	Excision, positive margin	None	NA	NA
3	39	Vulvar mass	Vulva	45	Classic	7	NA	NA	Cellular angiofibroma	Malignant SFT	Excision, positive margin	None	NA	NA
4	60	Vulvar mass, slowly increasing in size	Vulva	135	Classic	8	Positive	Positive	SFT (haemangiopericytoma)	Malignant SFT	Excision, followed by radical vulvectomy with negative margin	None	26 months	Alive, NED
5	40	Vulvar mass	Vulva	27	Classic	7	NA	Positive	SFT (haemangiopericytoma)	Malignant SFT	Excision, marginal	None	NA	NA
6	47	Vulvar mass, present for 2 months	Vulva	47	Classic	6	Positive	Positive	SFT (haemangiopericytoma)	Malignant SFT	Excision, marginal	None	NA	NA
7	75	Vulvar mass, slowly increasing in size over 1 year	Vulva	51	Fat-forming, diffusely cellular, cytological atypia	15	Positive	Positive	Malignant SFT with areas of adipocytic differentiation versus atypical lipomatous tumour	Malignant fat-forming SFT	Excision, positive margin	None	3 months	Alive, NED
8	30	Vulvar mass	Vulva	45	Classic	<1	Positive	Positive	Mammary-type myofibroblastoma	SFT	Excision, marginal	None	NA	NA
9	43	Vulvar mass, new	Vulva	44	Classic	<1	Positive	Positive	Atypical spindle cell lesion	SFT	Excision, positive margin	None	NA	NA
10	33	Vulvar mass, present for 3 years without significant change in size	Vulva	10	Myxoid stroma	<1	Positive	Positive	Benign vascular proliferation	Myxoid SFT	Excision, marginal	None	NA	NA
11	70	Vulvar mass, slowly increasing in size	Vulva	28	Diffusely cellular	1	Positive	Positive	None provided	Cellular SFT	Excision, marginal	None	NA	NA
12	52	Vulvar mass in the setting of chronic vulvar hydradenitis	Vulva	12	Multinucleated giant cells present	<1	Positive	Positive	Epithelioid haemangioendothelioma	SFT with giant-cell angiofibroma -like features	Excision, unknown margin status	None	NA	NA
13	63	Vulvar mass	Vulva	57	Classic features with cytological atypia	1	Positive	Positive	Angiofibroma, angiomyofibroblastoma	Atypical SFT	Excision, marginal	None	NA	NA

Table 1. *(Continued)*

Case	Age (years)	Clinical presentation	Location	Size (mm)	Histological features	Mitoses/ 10 HPFs	STAT6 IHC	CD34 IHC	Referring pathologist's differential diagnosis	Final diagnosis	Treatment	Metastasis	Follow -up interval	Outcome
14	34	Vulvar mass	Vulva	45	Classic features with mild cytological atypia	1	NA	NA	NA	SFT	Excision	None	NA	NA
15	45	Vaginal mass at introitus	Vagina	60	Classic	<1	Negative	Positive	Cellular angiofibroma, myofibroblastoma	SFT	Excision, positive margin	None	NA	NA
16	72	Abdominal pain, PMB	Uterus, cervix	145	Diffusely cellular	5	Positive	Positive	NA (in-house case)	Malignant SFT	Unresectable, RT	None	29 months	Alive, NED
17	56	Incidental finding in hysterectomy for HSIL	Uterus, corpus	125	Classic	5	Positive	Positive	SFT (haeman-giopericytoma)	Malignant SFT	Hysterectomy	None	NA	NA
18	44	Symptomatic fibroids	Uterus, corpus	35	Classic	11	NA	Positive	Malignant SFT	Malignant SFT	Hysterectomy	None	12 months	Pelvic recurrence
19	34	Symptomatic fibroids	Uterus, corpus	110	Classic	2	NA	Positive	SFT (haeman-giopericytoma)	SFT	Myomectomy	None	NA	NA
20	74	AUB	Uterus, corpus	95	Classic	10	Negative	Negative	Cellular leiomyoma	Malignant SFT	H-BSO, negative margins	None	56 months	Alive, NED
21	81	Lung metastases and long history of 'fibroids'	Uterus, corpus	100	Classic	1	Positive	Positive	NA (in-house case)	SFT	H-BSO, RT, negative margins	Lung (biopsy-proven)	33 months	Alive, developed new bone metastases
22	56	H-BSO for 'fibroids'	Uterus, corpus	200	Myxoid stroma	3	Positive	NA	NA (in-house case)	SFT with myxoid features and concurrent EMCA/1	H-BSO	None	14 months	Alive, NED
23	47	Intraperitoneal tumour possibly arising from the right ovary	Ovary /periovarian soft tissue	35	Fat-forming	2	Positive	Positive	Ovarian fibroma	Fat-forming SFT	Tumour excision	None	NA	NA
24	81	Abdominal pain for 6 months	Ovary	250	Classic features with cytological atypia	56	Positive	Positive	NA (in-house case)	Malignant SFT	H-BSO, CT	Lung	9 months	Alive, developed metastasis to lung and pelvic recurrence
25	58	Prophylactic BSO for BRCA	Fallopian tube	22	Extensive stromal hyalinisation	<1	Positive	Positive	Spindle cell neoplasm	Hyalinized SFT	BSO	None	42 months	Alive, NED

AUB, Abnormal uterine bleeding; BRCA, Breast Cancer Gene; BSO, Bilateral salpingo-oophorectomy; CT, Chemotherapy; EMCA/1, Endometrial adenocarcinoma, endometrioid type, grade 1; H-BSO, Hysterectomy and bilateral salpingo-oophorectomy; HPF, High-power field; HSIL, High grade squamous intraepithelial lesion; IHC, Immunohistochemistry; NA, Not available; NED; No evidence of disease; PMB, Postmenopausal bleeding; RT, Radiotherapy.

Solitary Fibrous Tumor of the Female Genital Tract

An uncommon tumor in an uncommon site

Fibroblastic neoplasm, originally described in the pleura

- Now well established extrapulmonary sites

Most common site (in the GYN tract): Vulva

Size: 1 to 13.5 cm (most <5cm)

Classic morphology and variant morphology*

- Haphazardly arranged spindled-to-ovoid cells
- Variably collagenous stroma
- Branching, staghorn-shaped (HPC-like) vessels

Immunoprofile: CD34+, STAT6+, Desmin-

Molecular: *NAB2-STAT6 fusion*

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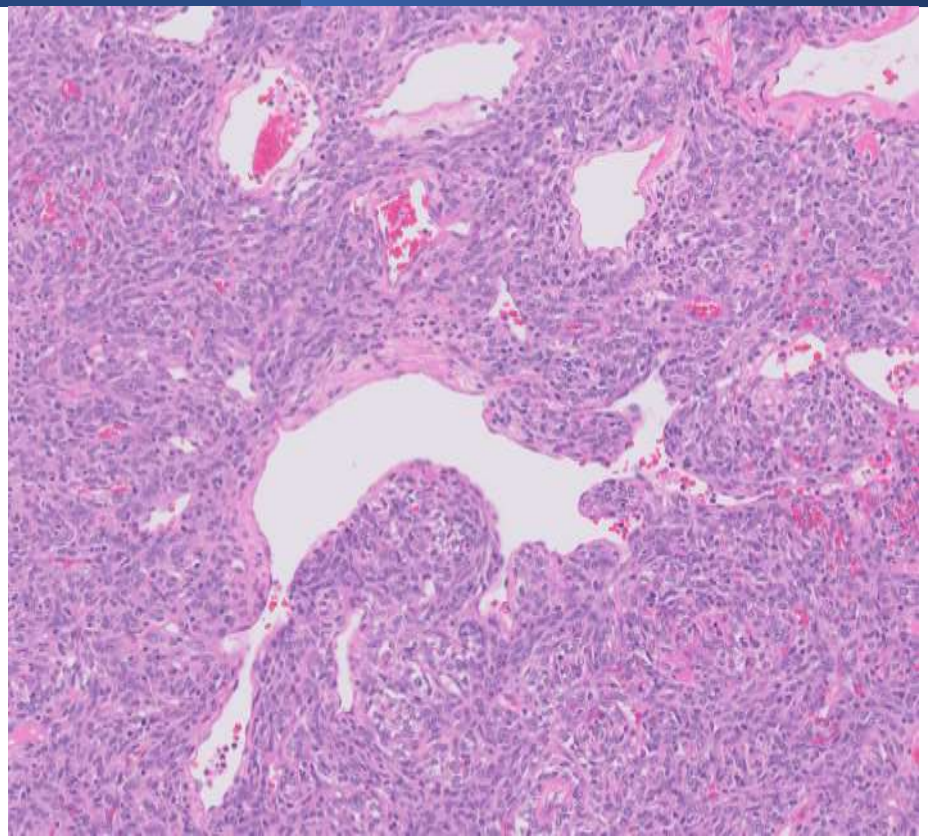

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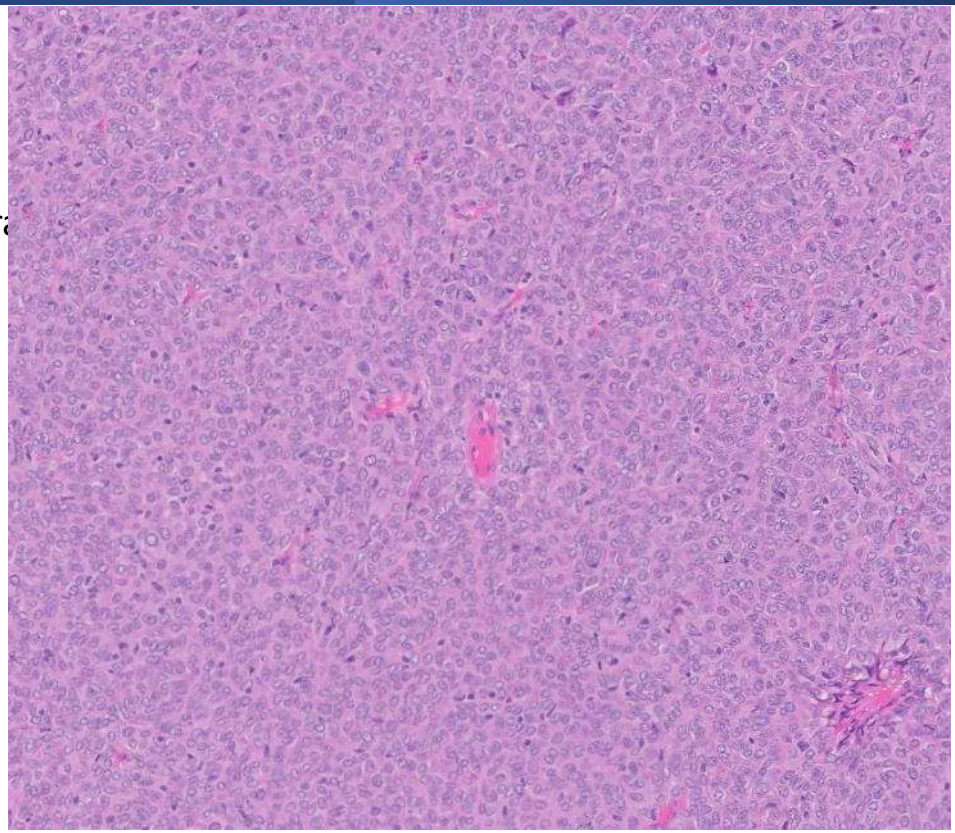

Solitary Fibrous Tumor of the Female Genital Tract

An uncommon tumor in an uncommon site

Fibroblastic neoplasm, originally described in the pleura

Now well established extrapulmonary sites

Most common site (in the GYN tract): Vulva

Size: 1 to 13.5 cm (most <5cm)

Classic morphology and **variant morphology***

- Diffuse hypercellularity
- **Fat-forming (lipomatous)**
- Myxoid stroma
- Extensive stromal hyalinization

Immunoprofile: CD34+, STAT6+, Desmin-

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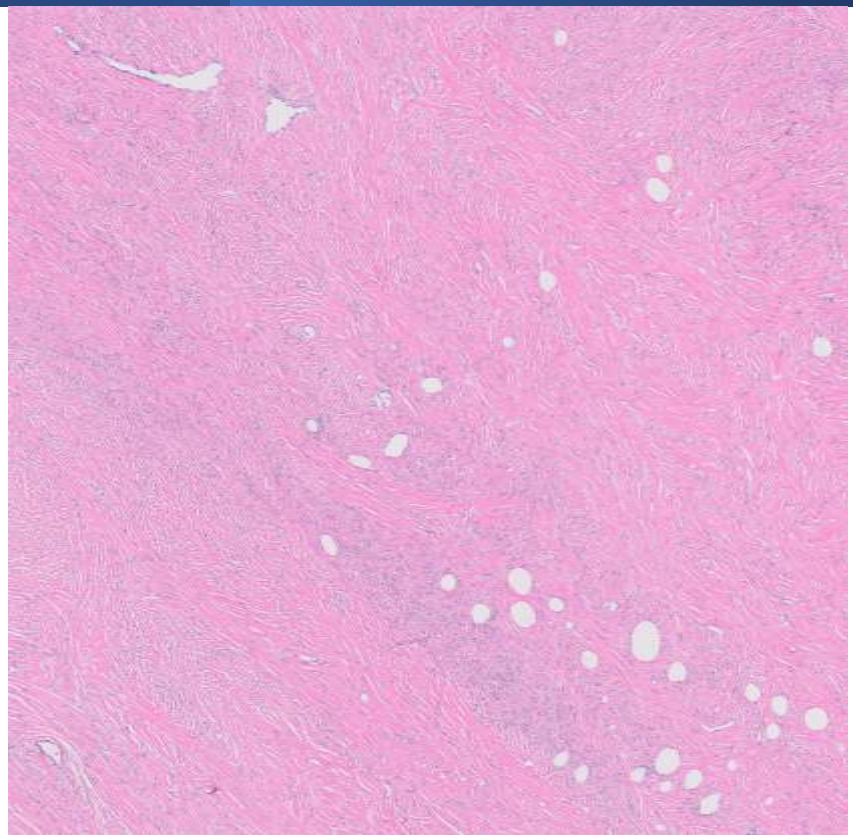

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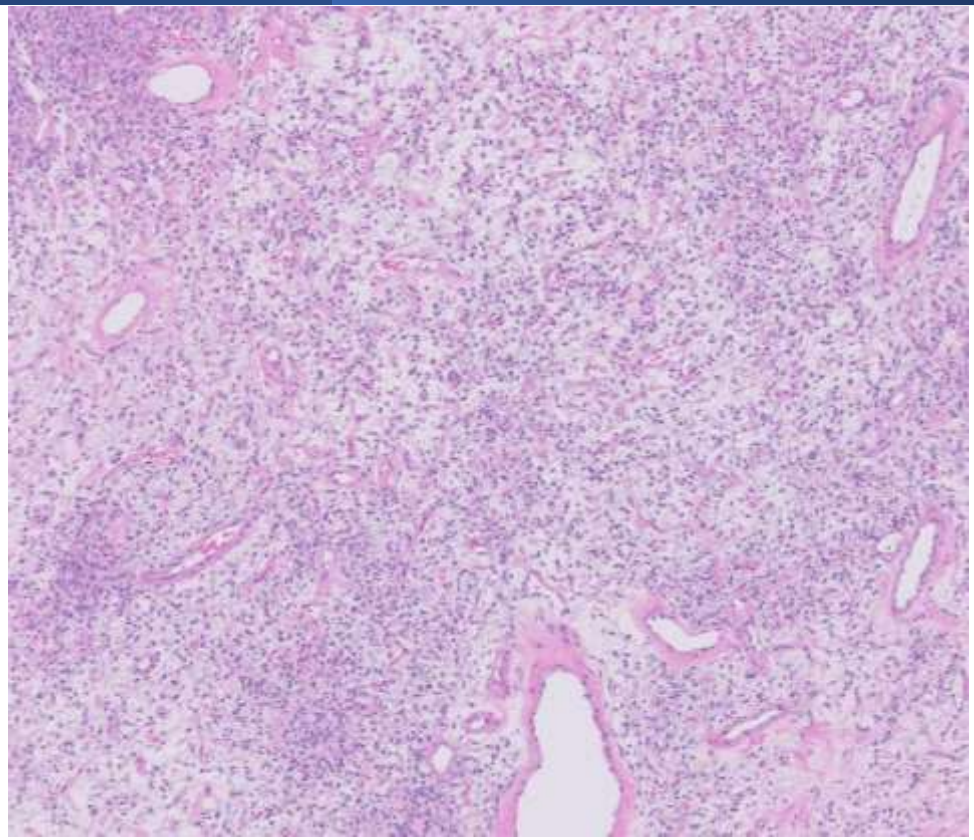

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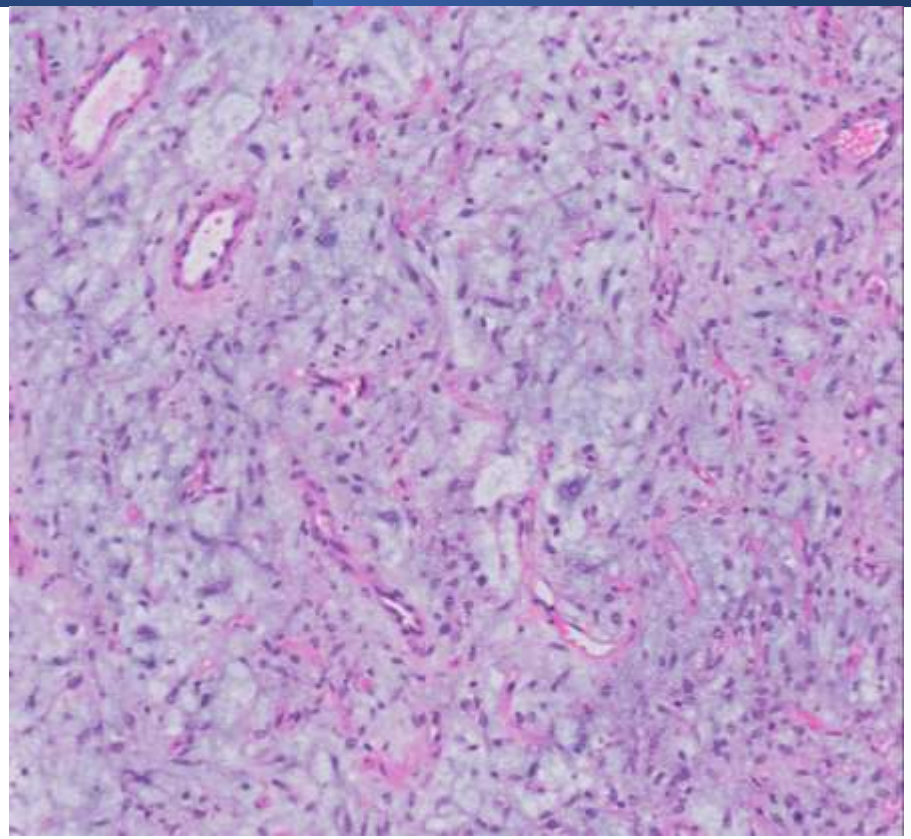

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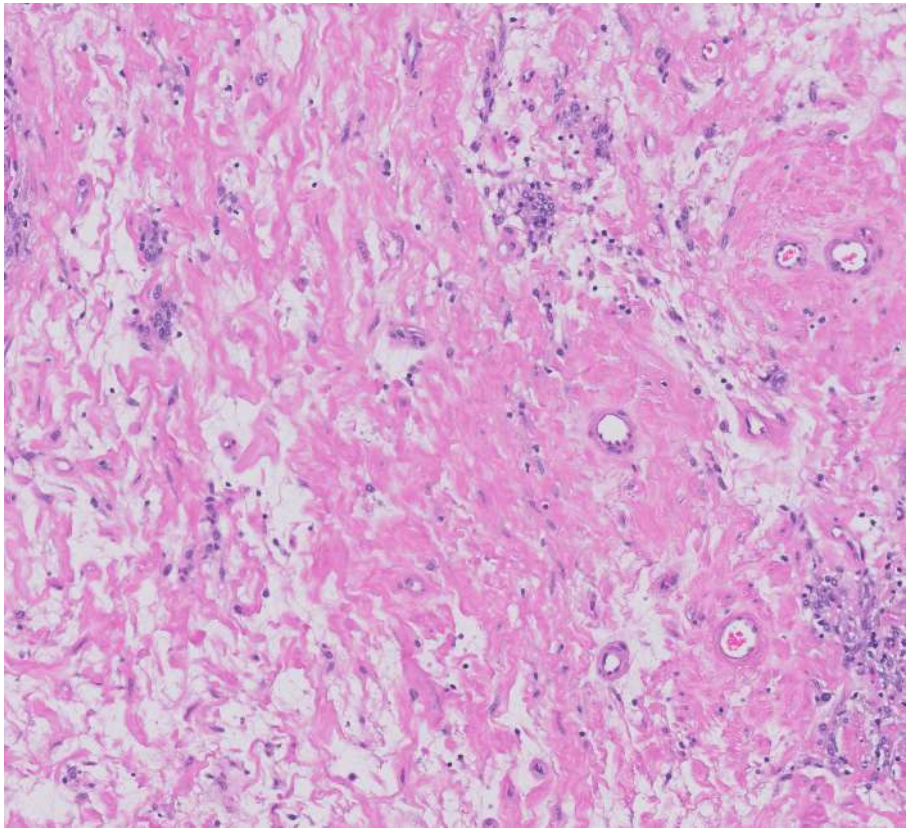


Solitary Fibrous Tumor of the Female Genital Tract

Broad differential diagnosis

Varies by site of presentation and histologic pattern

WHO classification of tumours series, 5th ed.; vol. 4

14. Mesenchymal tumours of the lower genital tract

Mesenchymal tumours of the lower genital tract: Introduction

Adipocytic tumours
- Lipoma
- Lipoblastoma-like tumour of the vulva
- Liposarcoma

Fibroblastic and myofibroblastic tumours
- Postoperative spindle cell nodule
- Fibroepithelial stromal polyp
- Prepubertal fibroma
- Superficial myofibroblastoma
- Myofibroblastoma
- Cellular angiofibroma
- Angiomyofibroblastoma
- Solitary fibrous tumour of the lower genital tract
- Dermatofibrosarcoma protuberans
- NTRK-rearranged spindle cell neoplasm (emerging)

Vascular tumours
- Kaposi sarcoma
- Angiosarcoma

Smooth muscle tumours
- Leiomyoma of the lower genital tract
- Smooth muscle tumour of uncertain malignant potential of the lower genital tract
- Leiomyosarcoma of the lower genital tract

Skeletal muscle tumours
- Rhabdomyoma
- Rhabdomyosarcoma

Peripheral nerve sheath tumours
- Benign peripheral nerve sheath tumours
- Granular cell tumour

Tumours of uncertain differentiation
- Superficial angiomyxoma
- Deep (aggressive) angiomyxoma
- Epithelioid sarcoma
- Alveolar soft part sarcoma

Undifferentiated small round cell sarcomas
- Ewing sarcoma

Referring pathologist's differential diagnosis	
Angiomyofibroblastoma, cellular angiofibroma, epithelioid sarcoma	NA
Monophasic synovial sarcoma	Cellular angiofibroma, myofibroblastoma
Cellular angiofibroma	NA (in-house case)
SFT (haemangiopericytoma)	SFT (haemangiopericytoma)
SFT (haemangiopericytoma)	Malignant SFT
SFT (haemangiopericytoma)	SFT (haemangiopericytoma)
Malignant SFT with areas of adipocytic differentiation versus atypical lipomatous tumour	Cellular leiomyoma
Mammary-type myofibroblastoma	NA (in-house case)
Atypical spindle cell lesion	NA (in-house case)
Benign vascular proliferation	Ovarian fibroma
None provided	NA (in-house case)
Epithelioid haemangioendothelioma	Spindle cell neoplasm
Angiofibroma, angiomyofibroblastoma	

Cellular Angiofibroma

51 yo F

Well circumscribed vulvar mass

Bland ovoid spindle cells

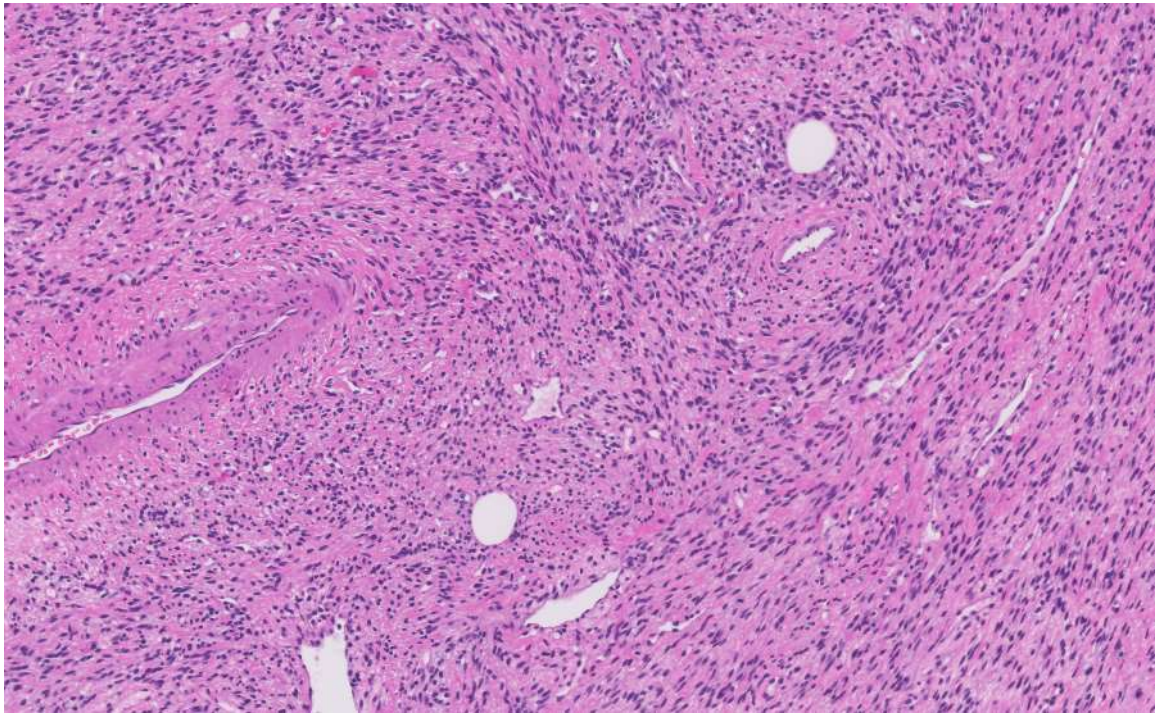
Interspersed delicate collagen bundles

Large thin and tick-walled vessels

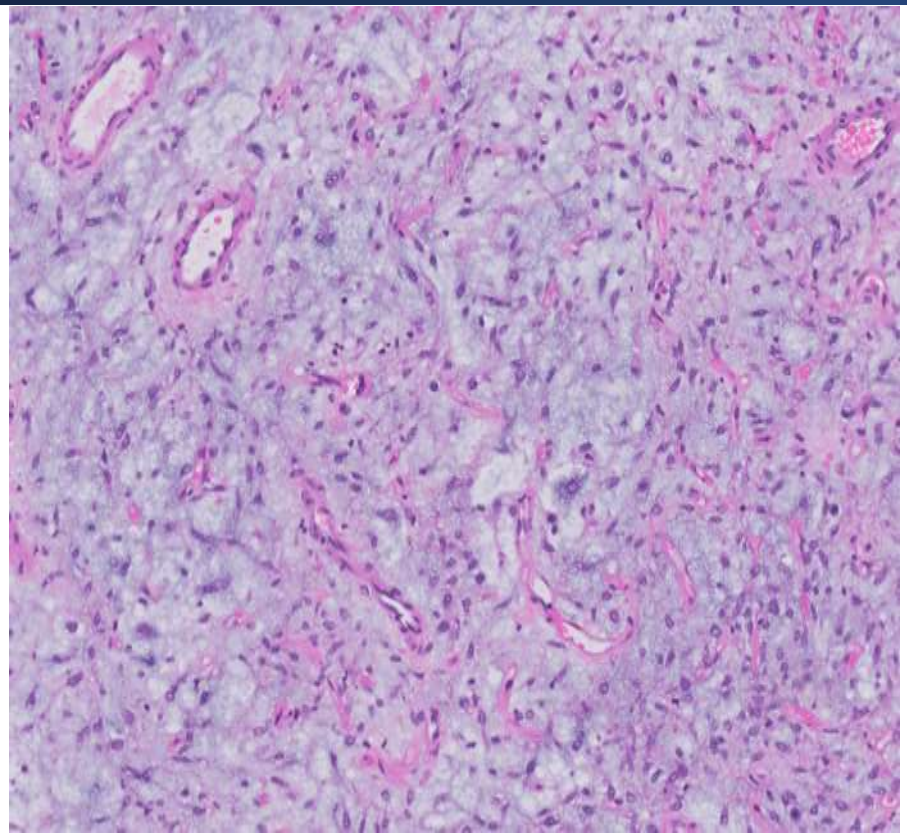
Focal adipocytic differentiation

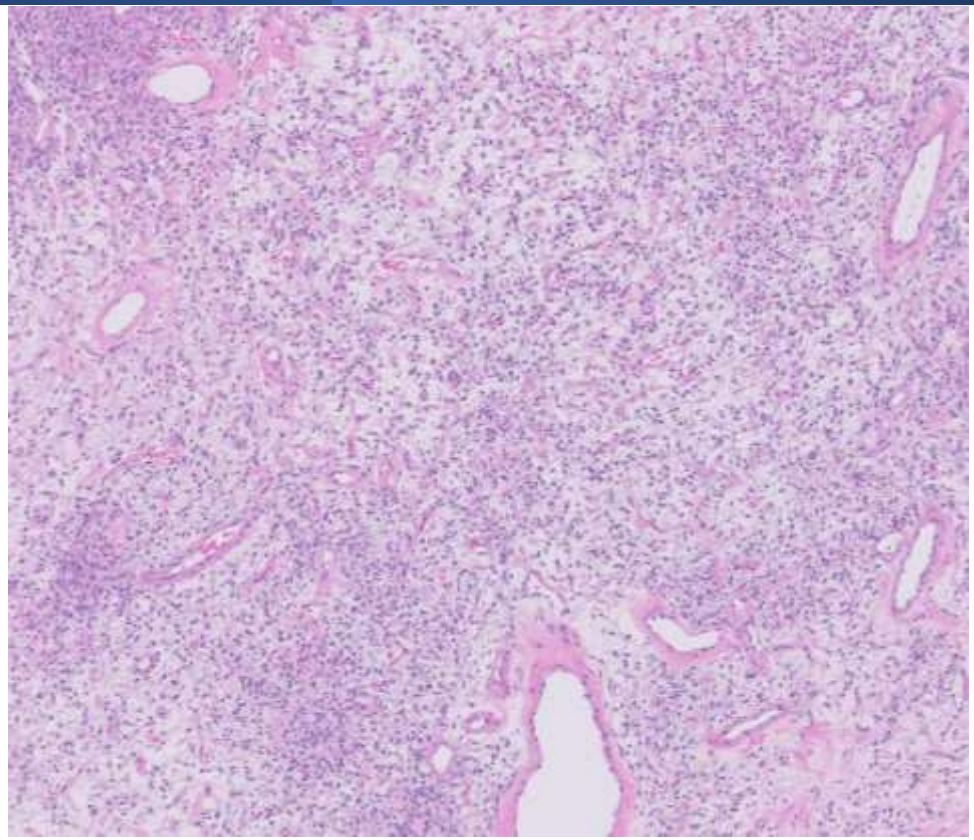
Desmin-, CD34+(focal)

STAT6-, RB1 loss



Think about …. Deep (aggressive) or superficial angiomyxoma





Risk Assessment – Demicco et al

Risk factor	*Score*
Age	
<55	0
≥55	1
Tumor size (cm)	
<5	0
5 to <10	1
10 to <15	2
≥15	3
Mitotic count (/10 high-power fields)	
0	0
1–3	1
≥4	2
Tumor necrosis	
<10%	0
≥10%	1
Risk class	*Total score*
Low	0–3
Intermediate	4–5
High	6–7

Risk Assessment – Demicco et al

Risk group	*Score*	*Test set (n=82)*			*Validation set (n=50)*		
		N(%)	*Metastasis-free*		N(%)	*Metastasis-free*	
			5 years	*10 years*		*5 years*	*10 years*
Three-variable model							
Low risk	0–1	28 (34)	100%	100%	23 (46)	100%	100%
Intermediate risk	3–4	31 (38)	77%	64%	17 (34)	93%	93%
High risk	5–6	23 (28)	15%	0%	10 (20)	49%	—
Four-variable model							
Low risk	0–3	37 (45)	100%	100%	28 (56)	100%	100%
Intermediate risk	4–5	30 (37)	69%	50%	15 (30)	90%	90%
High risk	6–7	15 (18)	0%	0%	7 (14)	27%	—

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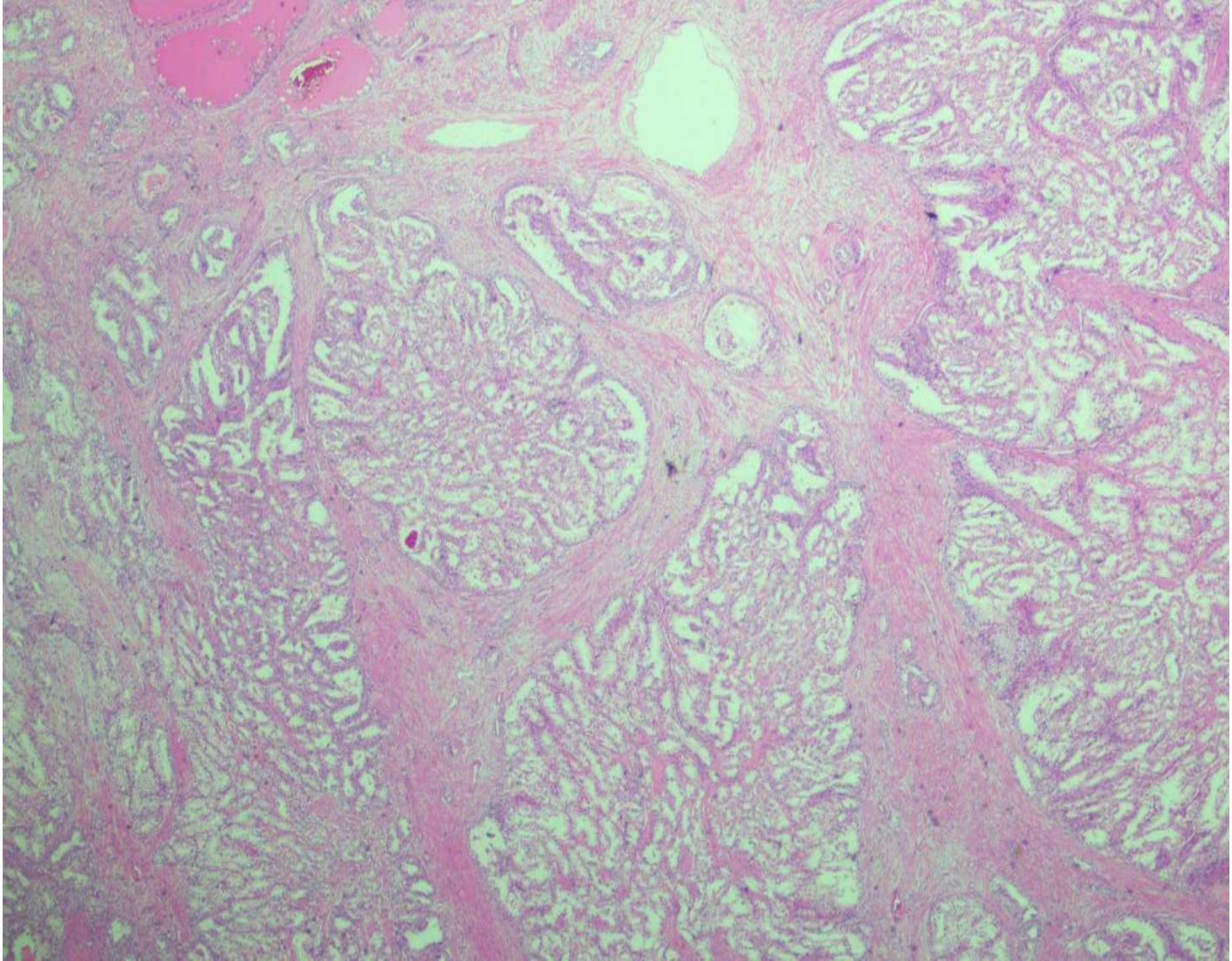
Demicco EG, Wagner MJ, Maki RG, Gupta V, Iofin I, Lazar AJ, Wang WL. Risk assessment in solitary fibrous tumors: validation and refinement of a risk stratification model. Mod Pathol. 2017 Oct;30(10):1433-1442. doi: 10.1038/modpathol.2017.54. Epub 2017 Jul 21. PMID: 28731041.

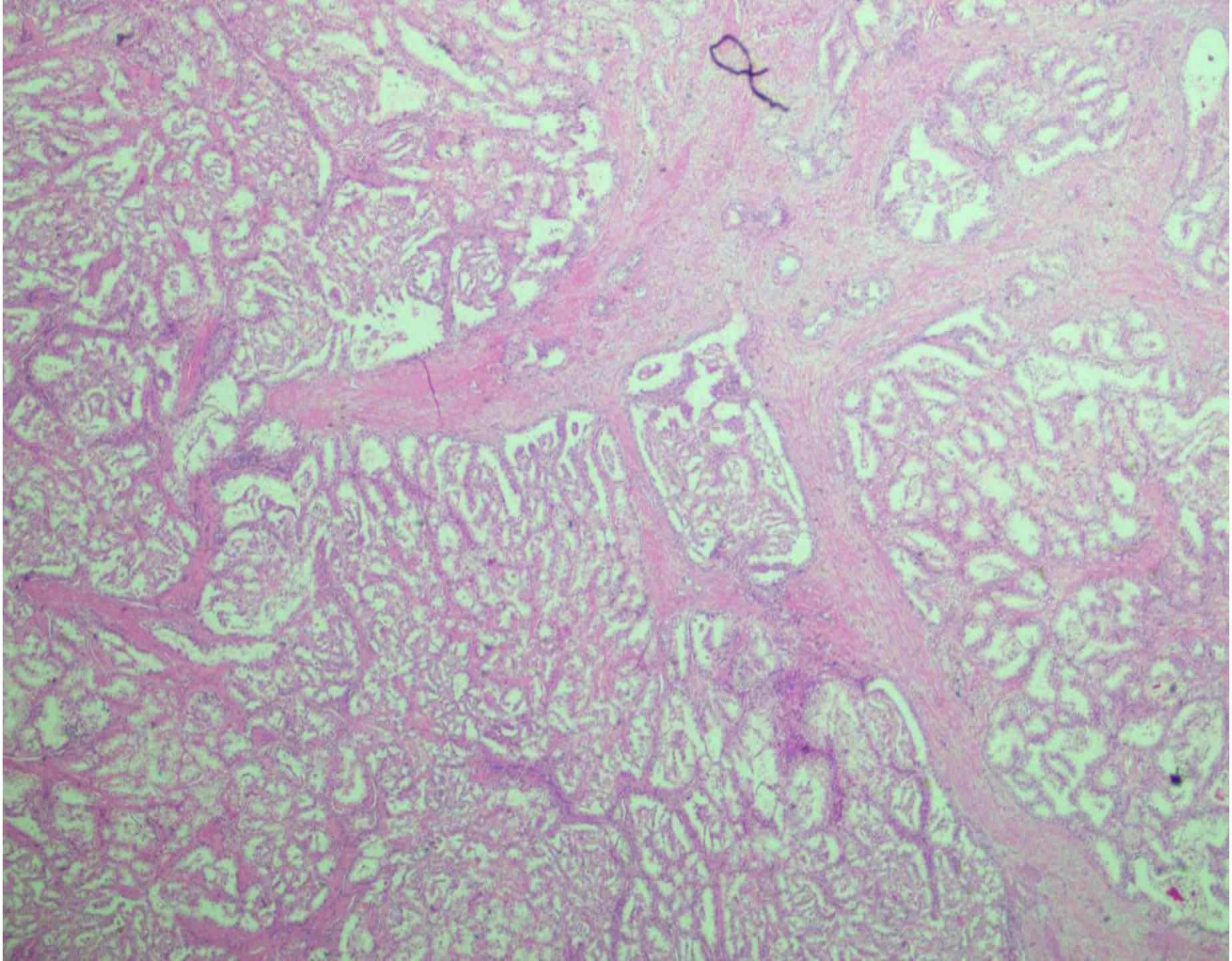
22-1204

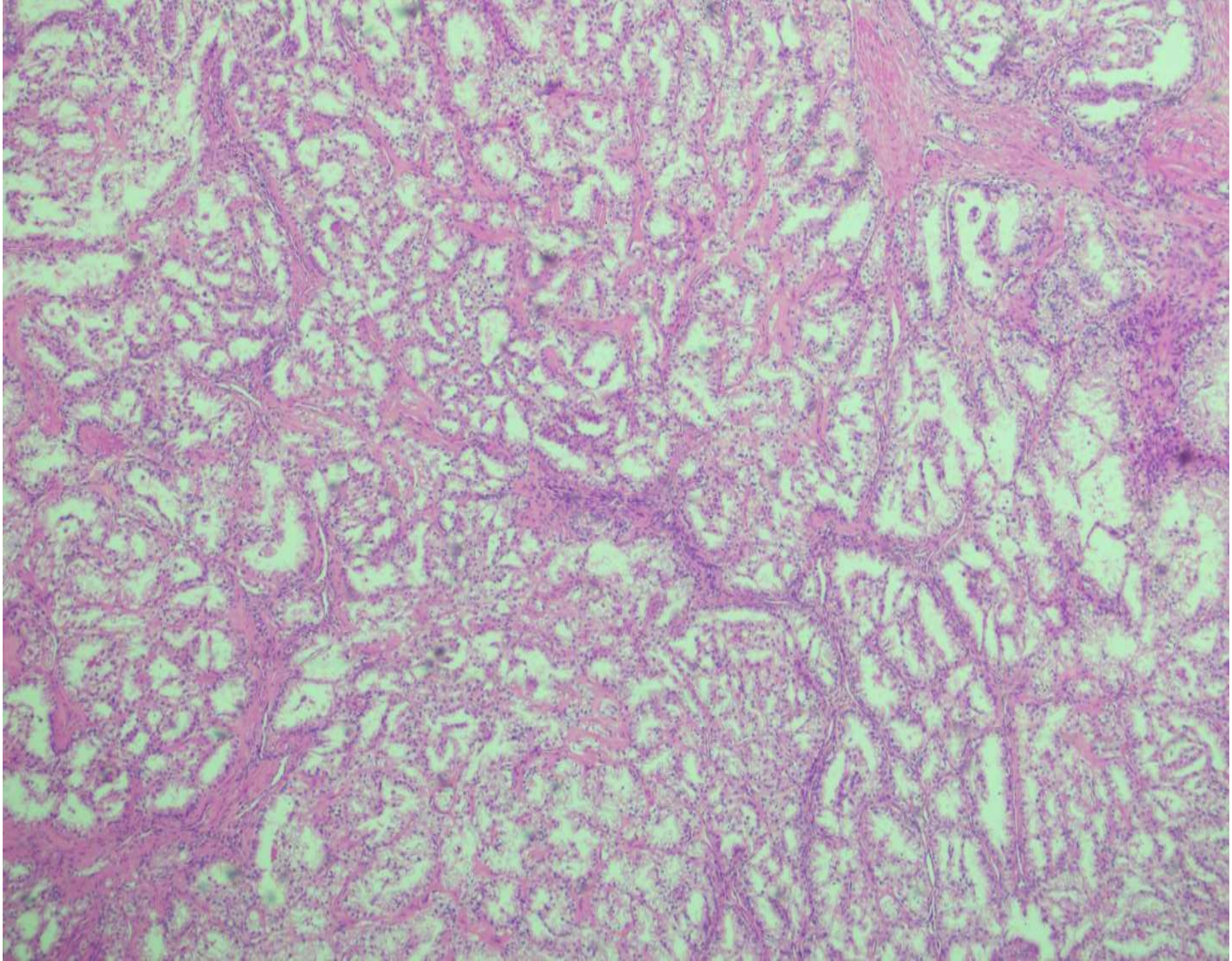
Direct link to scanned slide:
https://pathpresenter.net/public/display?token=5ac976f2

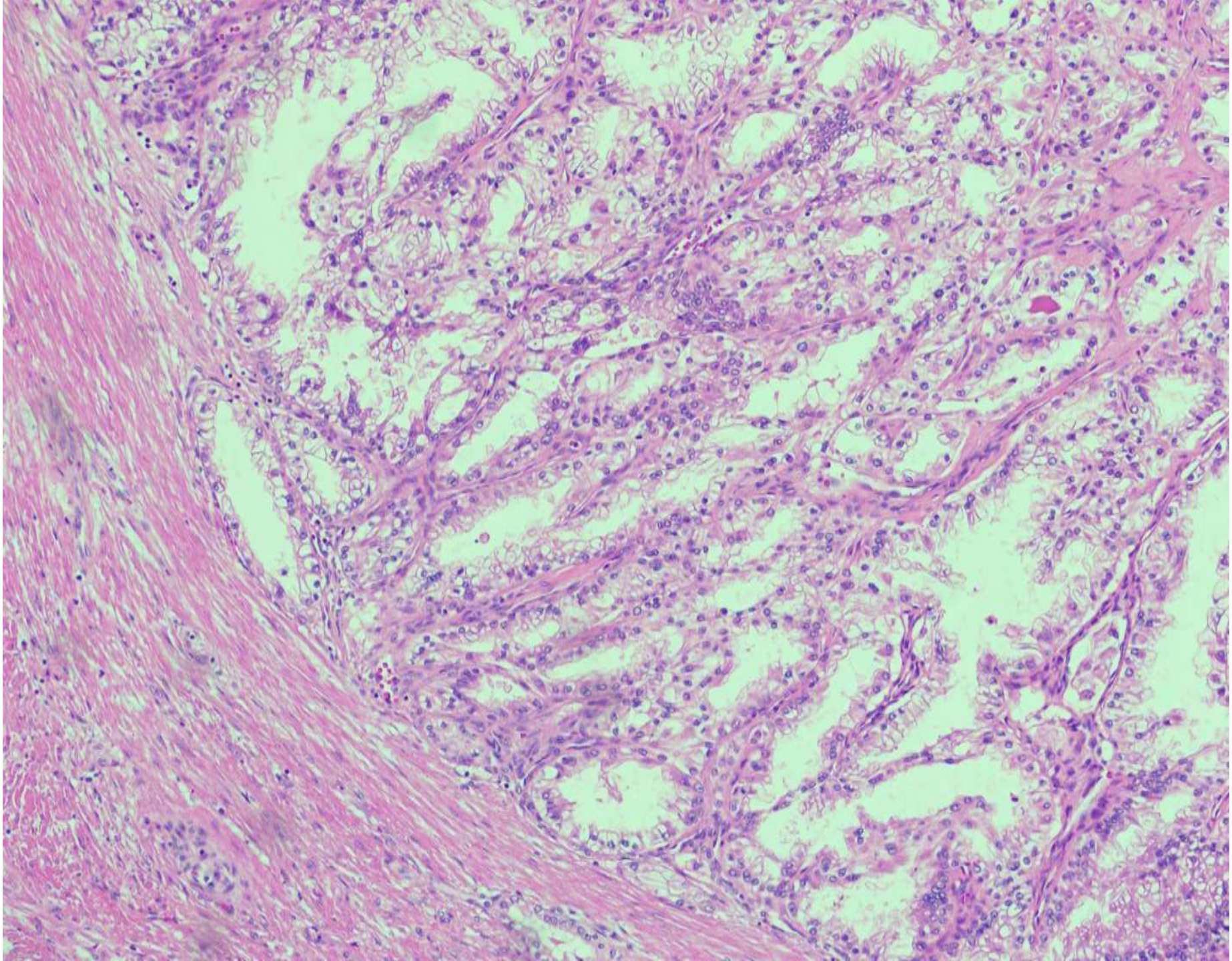
Armen Khararjian; Walnut Creek

Middle-aged M with 6.3cm renal mass.









RCC with Fibromyomatous Stroma

RCC with Fibromyomatous/Leiomyomatous Stroma

- Usually present as small tumors
- Low power nodular architechture
- Epithelium consists of elongated tubules with frequent branching
- Cells have voluminous clear to eosinophilic cytoplasm
- Key feature: epithelium is separated by variable smooth muscle rich stroma
- Generally behave indolently

TABLE 1. The Clinicopathologic and Follow-up Information of 18 RCCLMS Cases

Case No.	Age (y)	Sex	Clinical Presentation	Surgery	Size (cm)	ISUP/WHO Grade	Stage	Status	Follow-up (mo)
1	NA	NA	NA	NA	NA	2	NA	LIF	NA
2	NA	NA	NA	NA	NA	2	NA	LIF	NA
3	NA	NA	NA	NA	NA	2	NA	LIF	NA
4	55	Female	Incidental	PN	2.3	2	NA	LIF	NA
5	68	Female	Incidental	RN	NA	3	T1a	NED	58
6	56	Female	Incidental	PN	2	3	T1b	NED	25
7	43	Male	Incidental	PN	1.5	2	T1a	NED	39
8	33	Female	Incidental	PN	1.4	2	T1a	NED	1
9	69	Female	Incidental	PN	2	2	T1a	NED	17
10	49	Male	Incidental	PN	1.3	2	T1a	NED	8
11	54	Female	Incidental	PN	1.5	2	T1a	NED	9
12	63	Male	Incidental	PN	3.5	2	T1a	NED	NA
13	41	Female	Incidental	Bx	NA	2	NA	ND	NA
14	68	Male	Incidental	PN	2.9	2	T1a	ND	31
15	36	Female	Incidental	PN	3	2	T1a	NED	12
16	45	Male	NA	PN	1.1	2	T1a	LIF	NA
17	37	Female	NA	RN	4.5	3	NA	LIF	NA
18	62	Female	Incidental	Bx	2.4	3	NA	NED	36

Bx indicates biopsy; LIF, lost in follow-up; NA, not available; ND, new diagnosis; NED, no evidence of disease; PN, partial nephrectomy; RN, radical nephrectomy.

Shah et al. PMID: 31850909

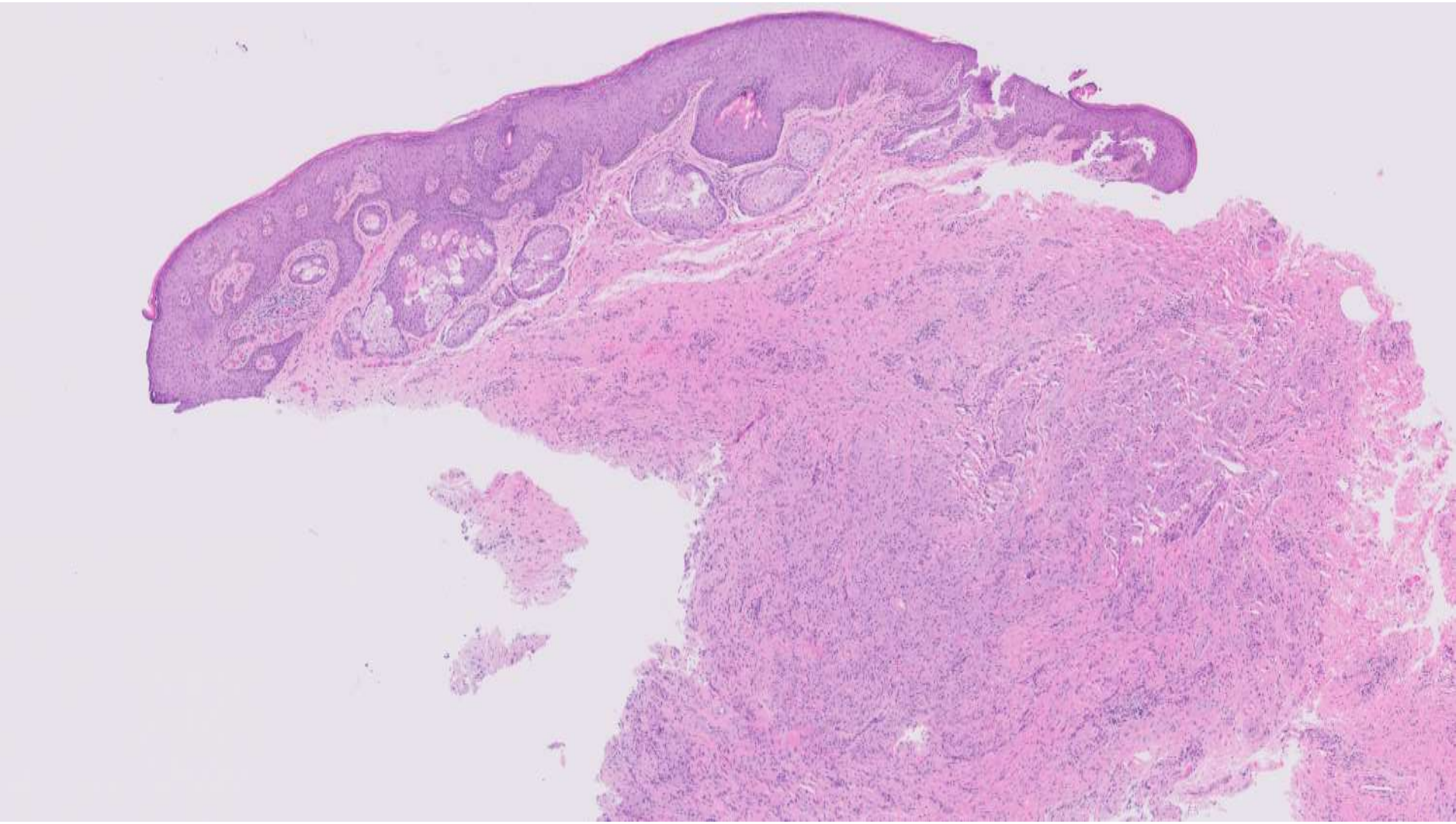
IHC/Molecular

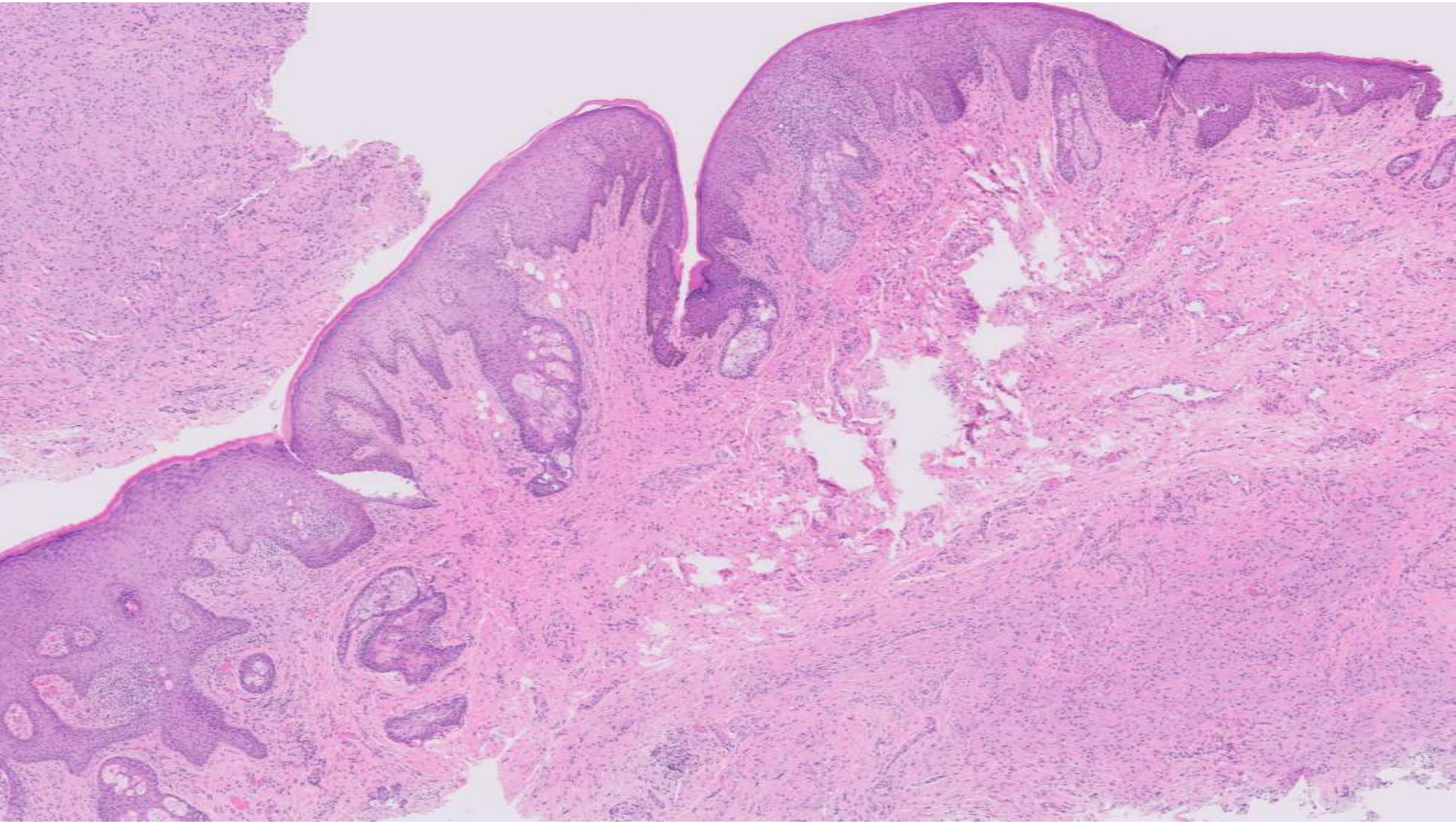
- Diffuse CK7
- CAIX positive – can show cup-like staining
- Recurrent TSC/MTOR mutations – both sporadic and hereditary

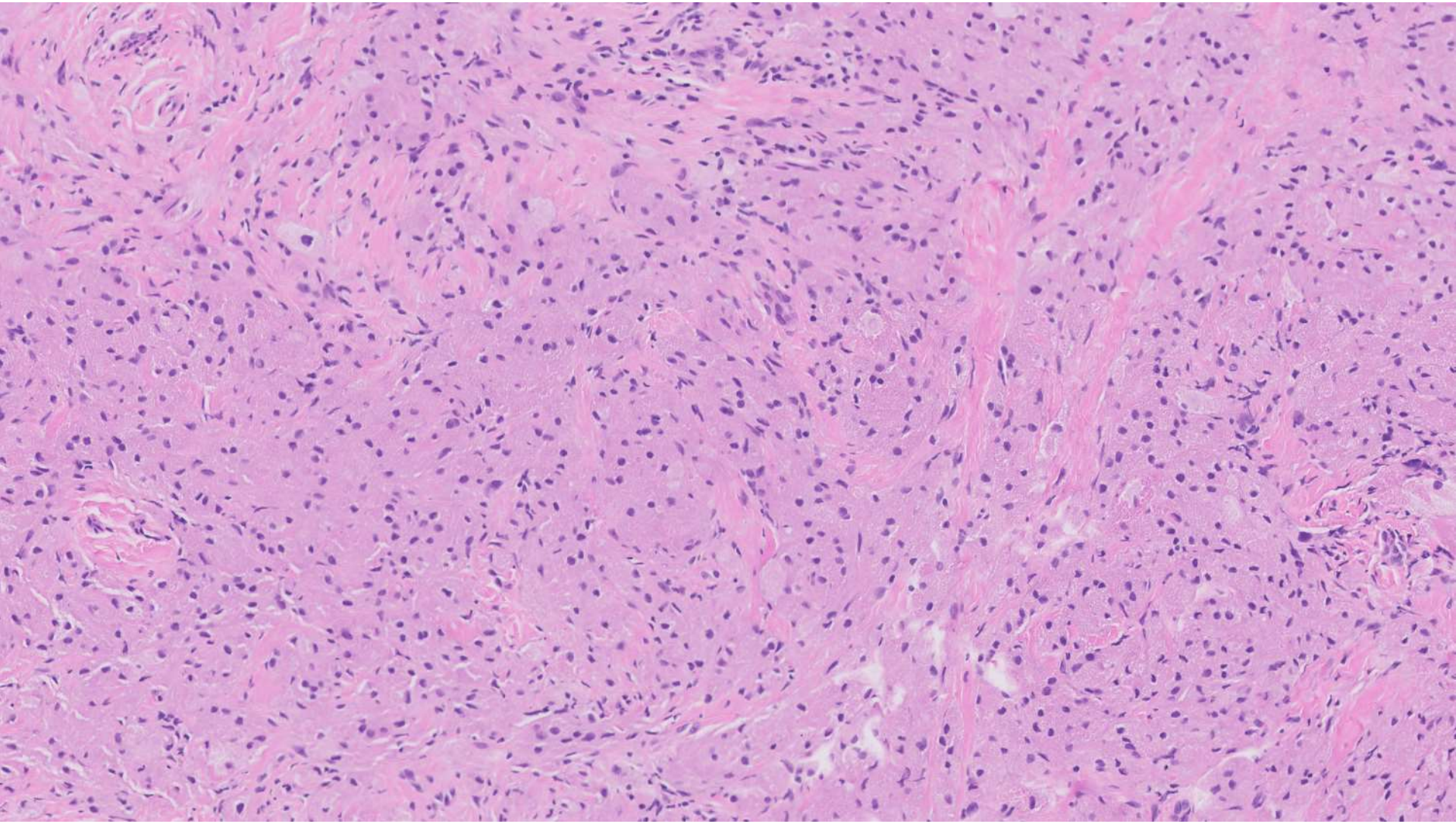
22-1205

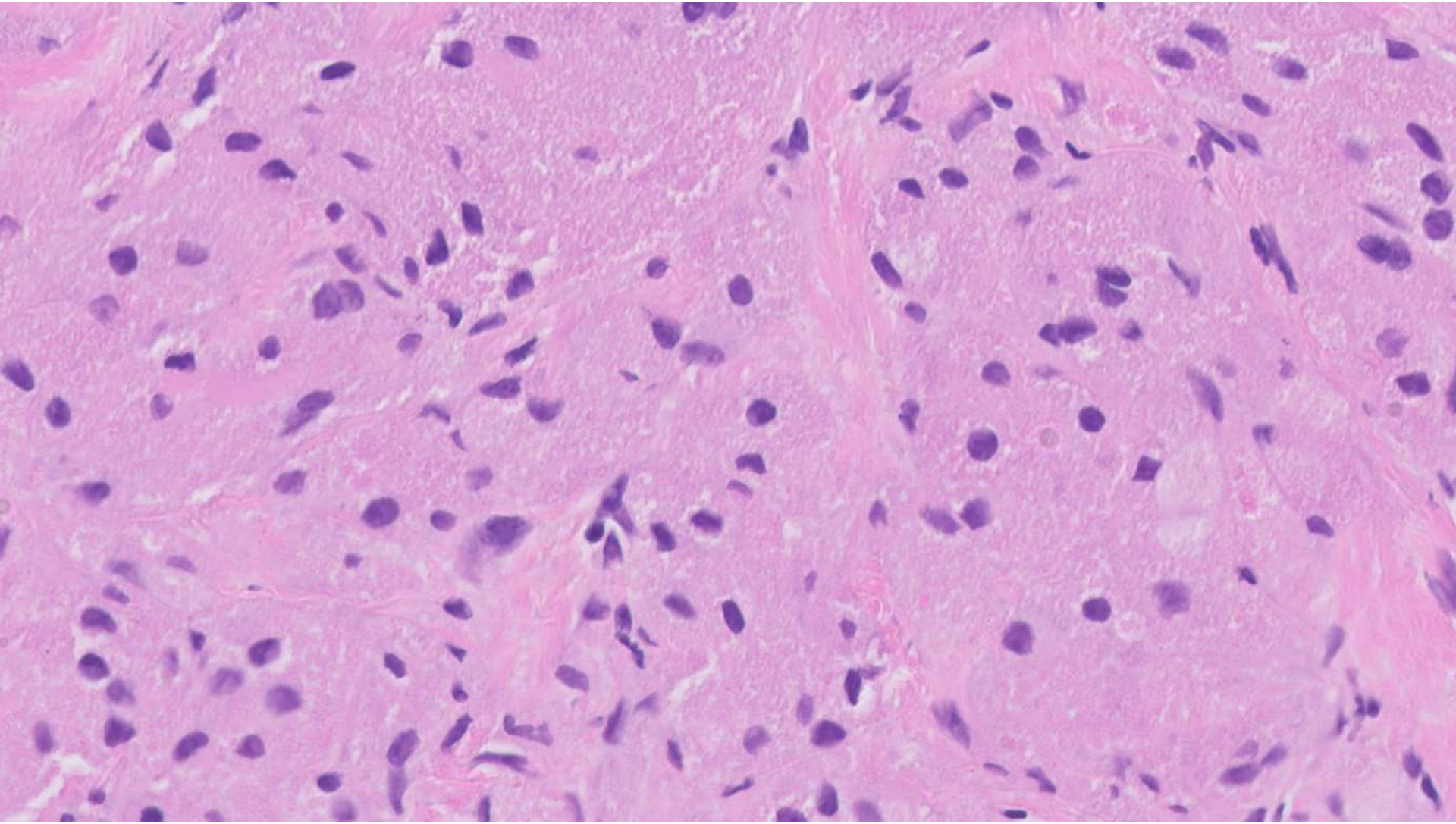
Troy Tenney/Teri Longacre; Stanford

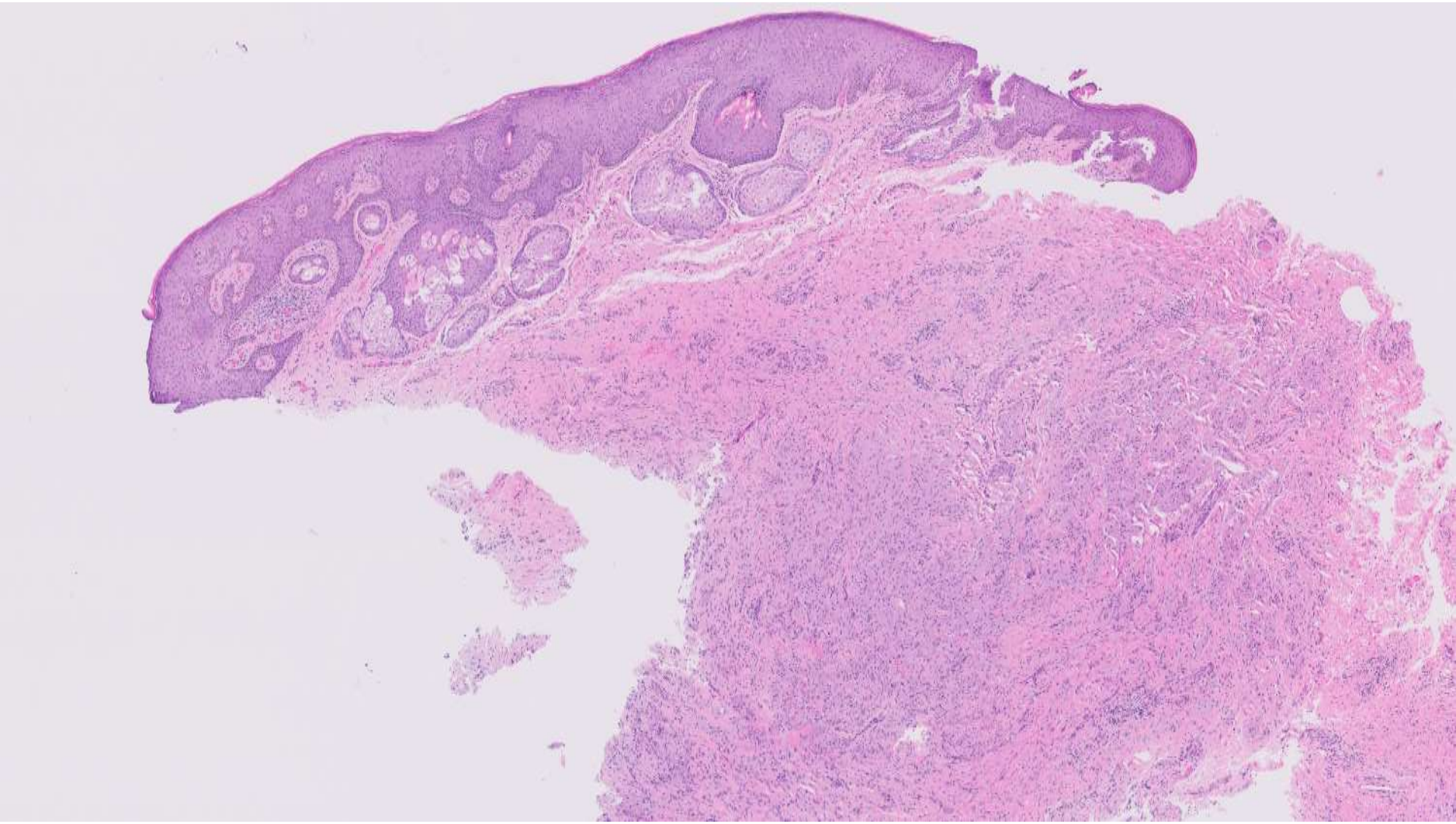
50ish F with “vulvar cyst”.

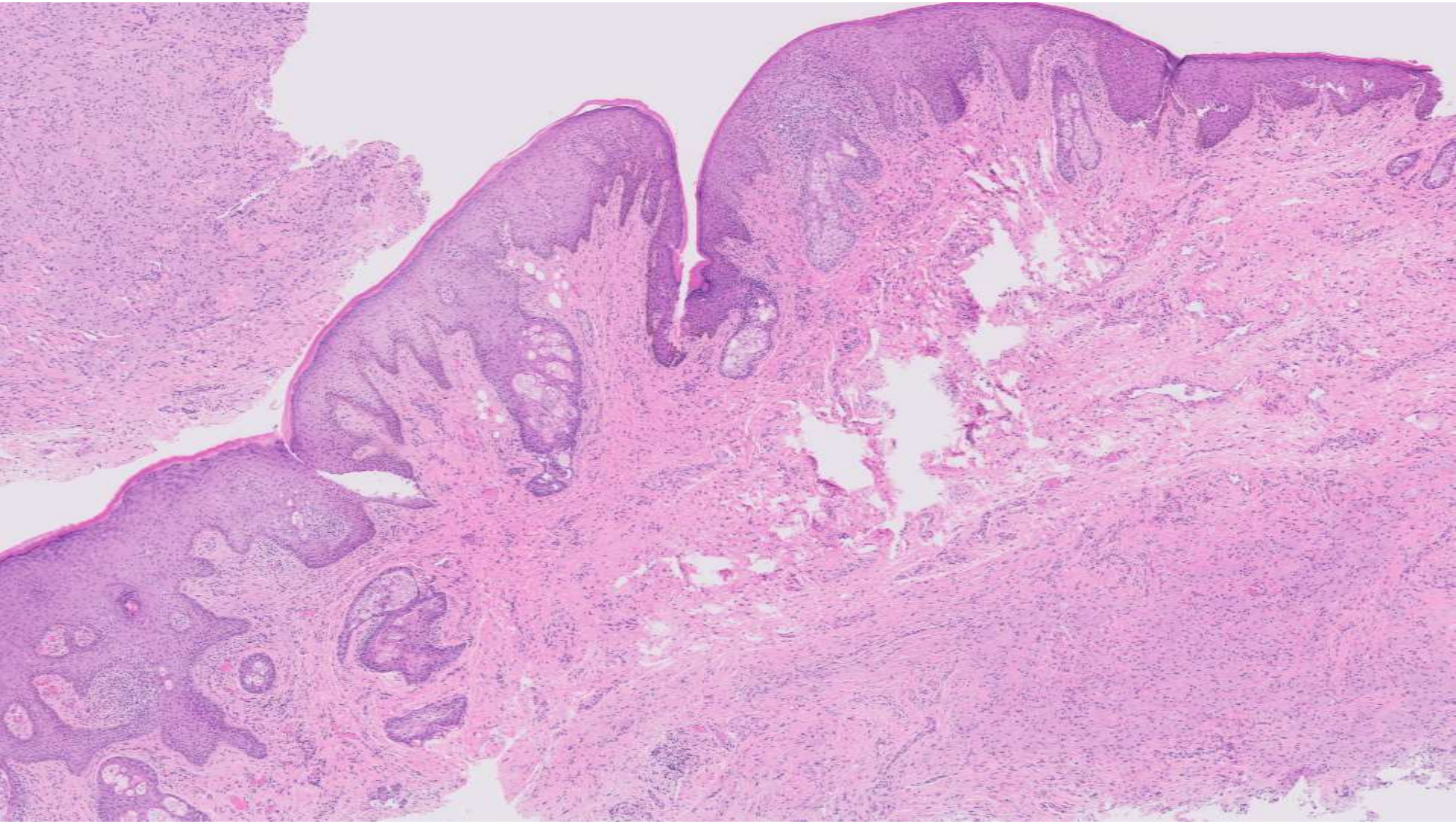


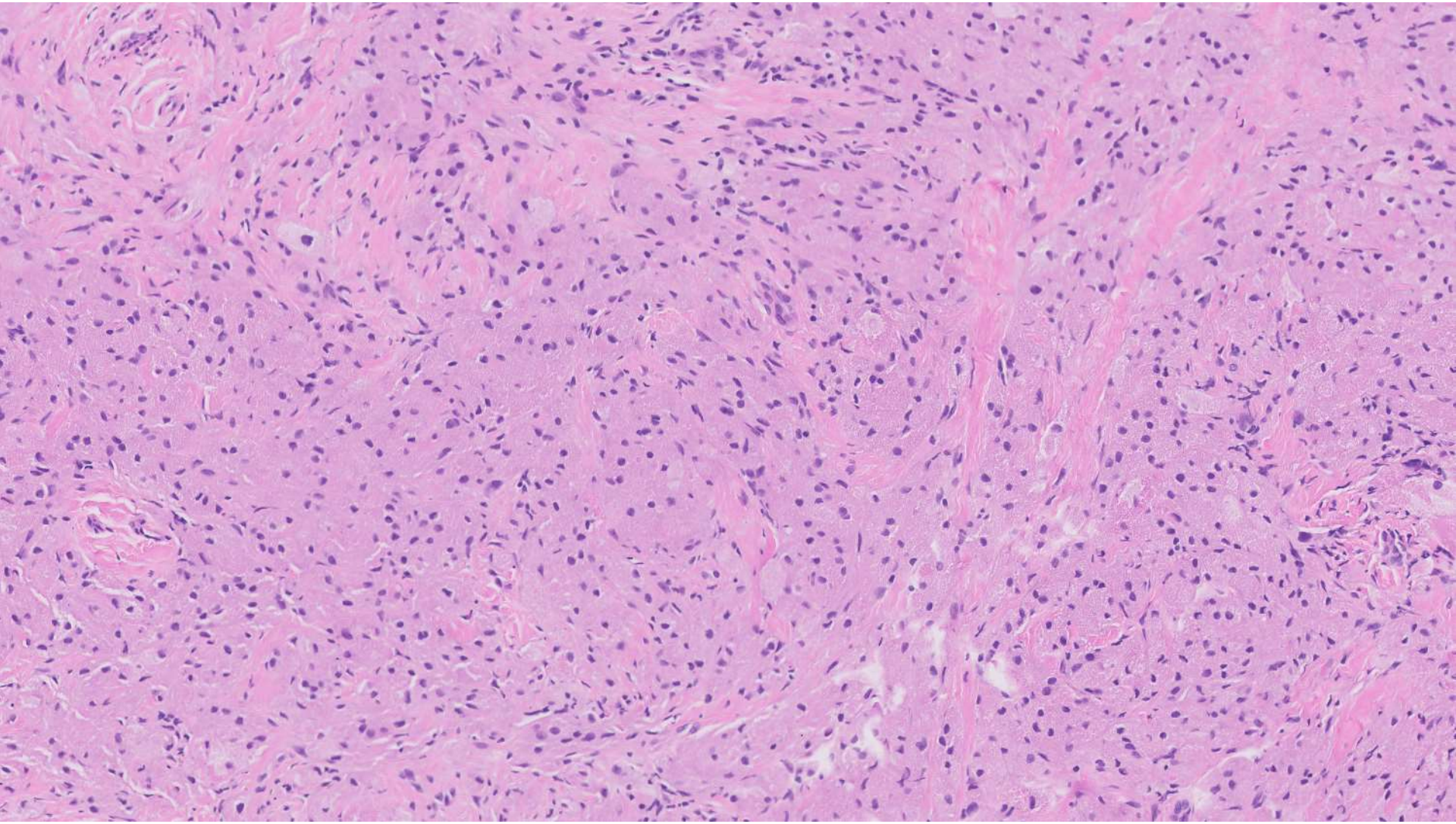


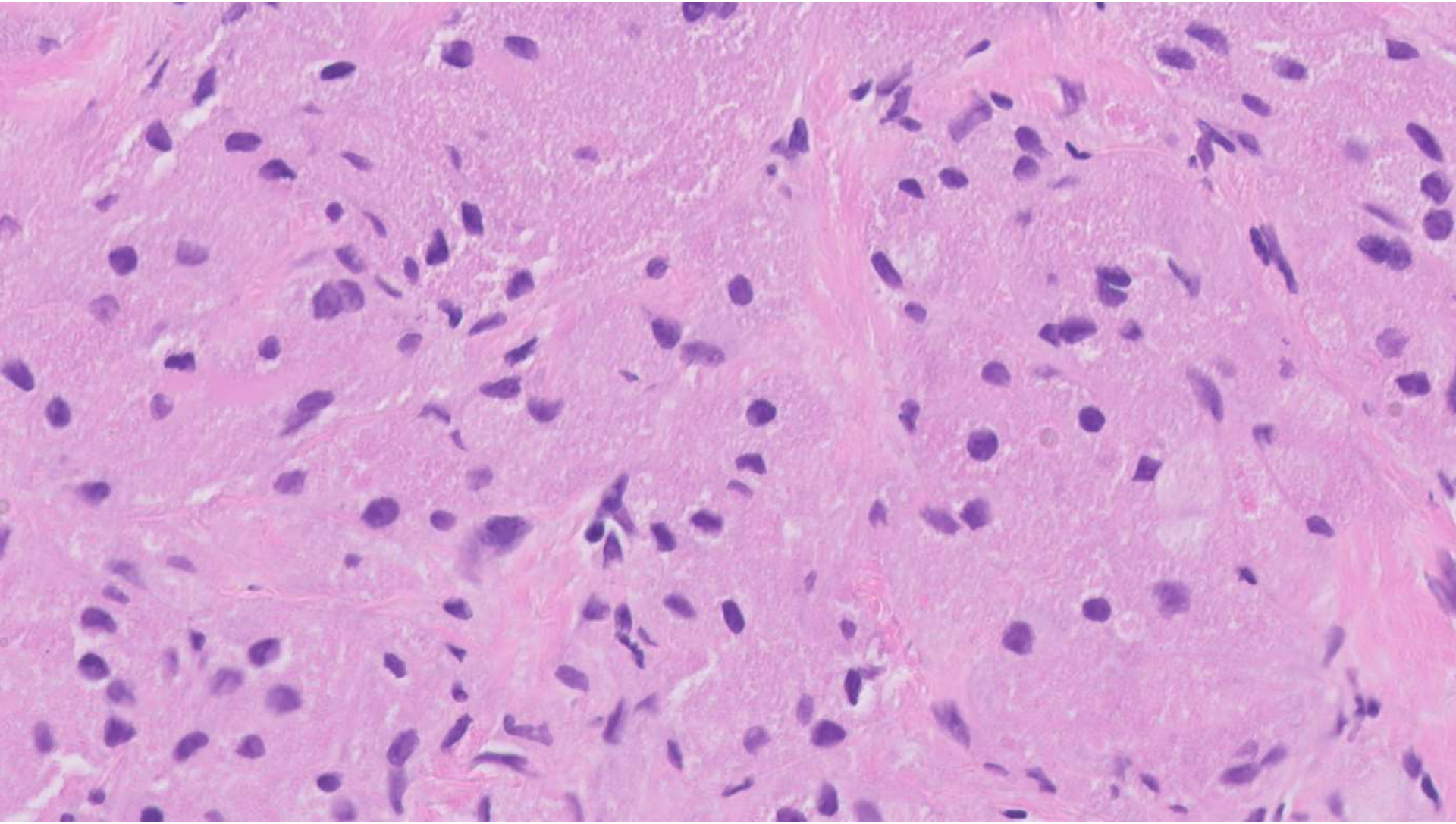


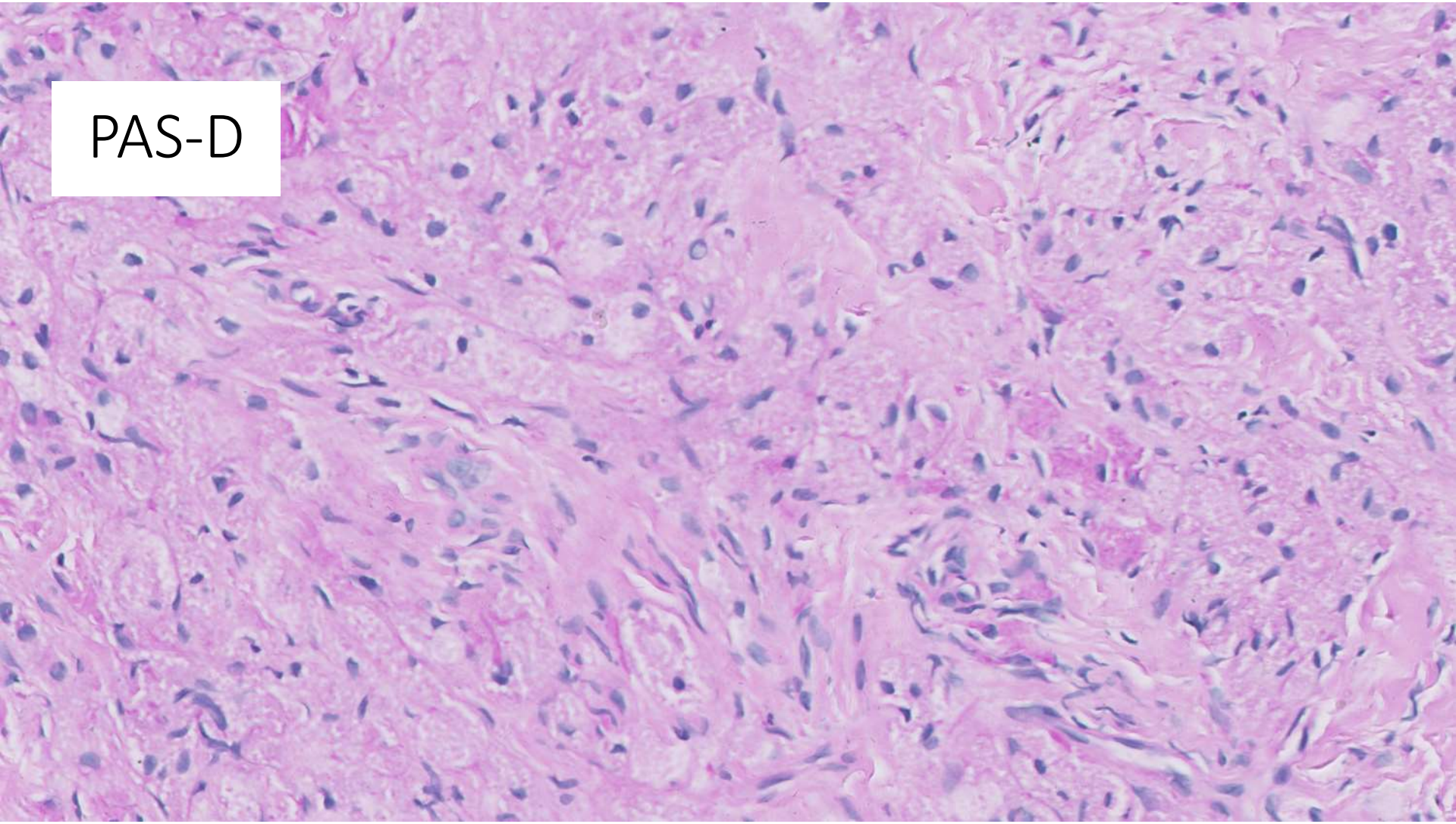


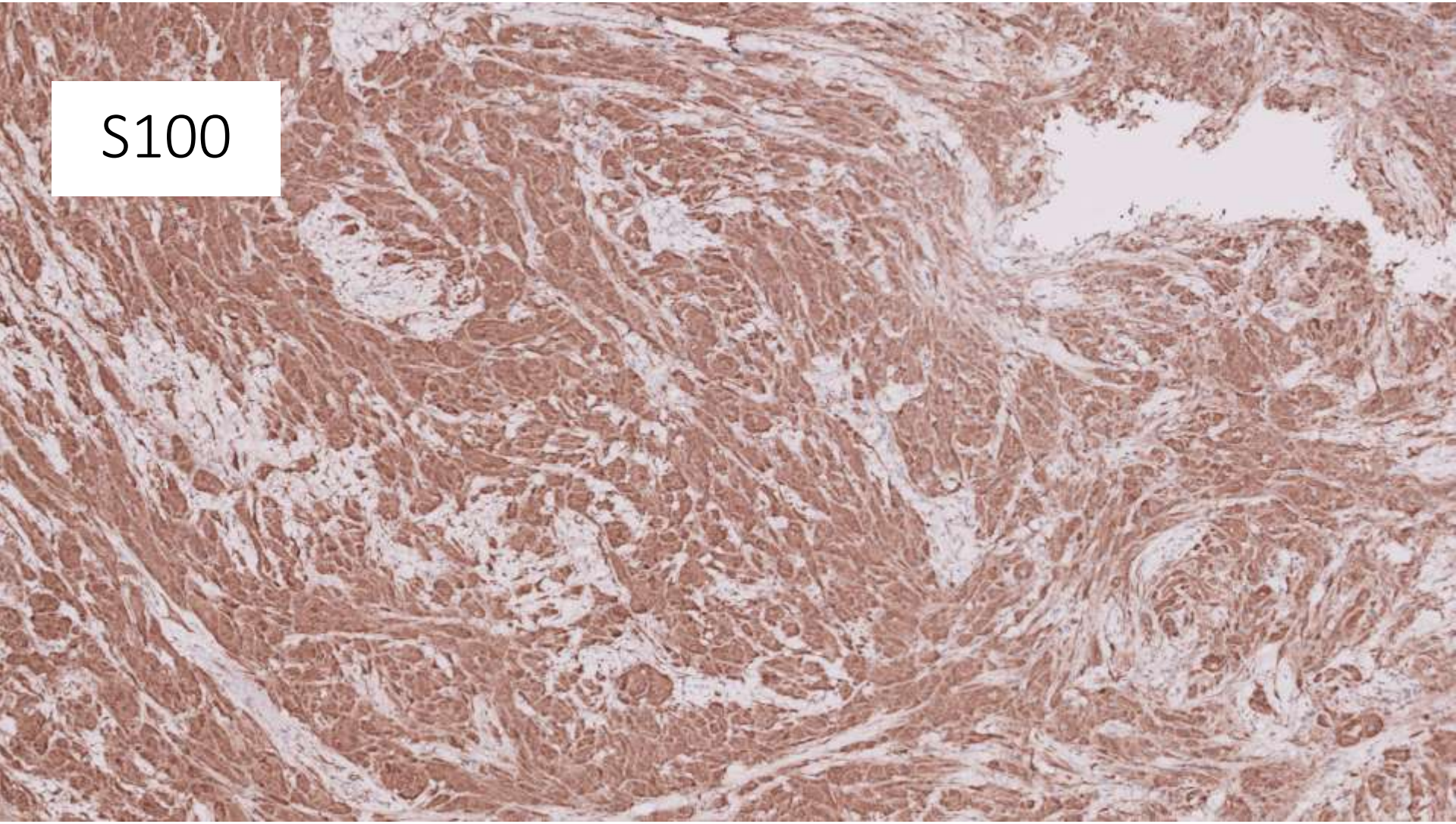









PAS-D


S100

Granular Cell Tumor

Granular Cell Tumor

(Another) somewhat uncommon tumor in an uncommon site

Schwannian (neuroectodermal) differentiation

Involving skin/subcutis or submucosa of various sites:

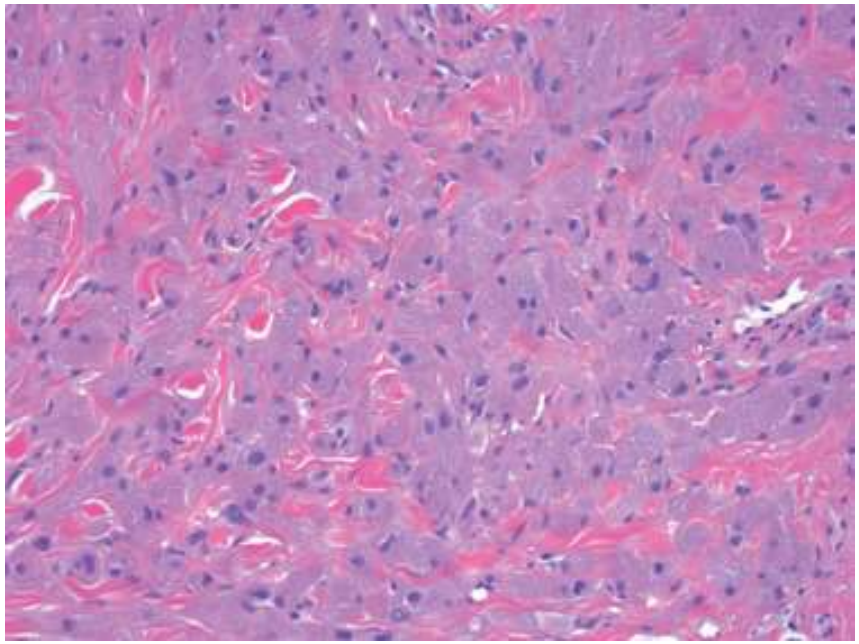
- Tongue, breast, trunk, extremities
- 5-15% involve vulva

May recur if incompletely excised

Histopathology:

- Irregular nests and sheets of eosinophilic, granular cells
- bland nuclei
- <2 mf/10 hpf
- Can be intermingled with strands of collagen
- Pushing or infiltrative border.

PAS+, S100+, α-inhibin+, and calretinin+

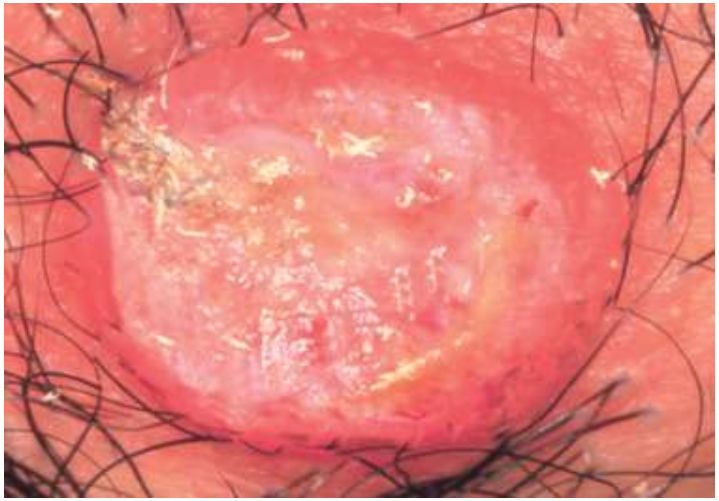


Non-Neoplastic Lesions and Benign and Locally Aggressive Tumors of the Vulva. Atlas of Gynecologic Surgical Pathology. Fig. 1.63

Granular Cell Tumor

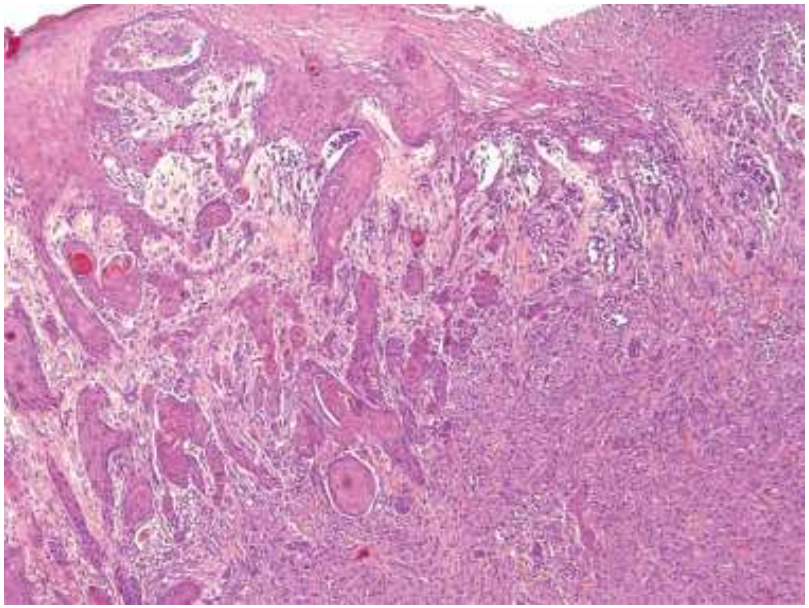
Differential Diagnosis

- Rhabdomyoma
- Reactive histiocytic lesions
- Alveolar soft part sarcoma



Pitfall

Pseudoepitheliomatous hyperplasia may mimick Squamous cell carcinoma



Non-Neoplastic Lesions and Benign and Locally Aggressive Tumors of the Vulva. Atlas of Gynecologic Surgical Pathology. Fig. 1.61 and 1.64

Granular Cell Tumor

Solitary or multifocal

Sporadic or syndromic (Noonan syndrome, LEOPARD syndrome, NF1)

Benign or malignant

Granular Cell Tumor

Fanburg-Smith criteria:

Necrosis, tumor cell spindling, vesicular nuclei with large nucleoli, > 2 mitoses/10 high power fields, high nuclear to cytoplasmic ratio and pleomorphism

0: benign

1 - 2: atypical

≥ 3: malignant

References

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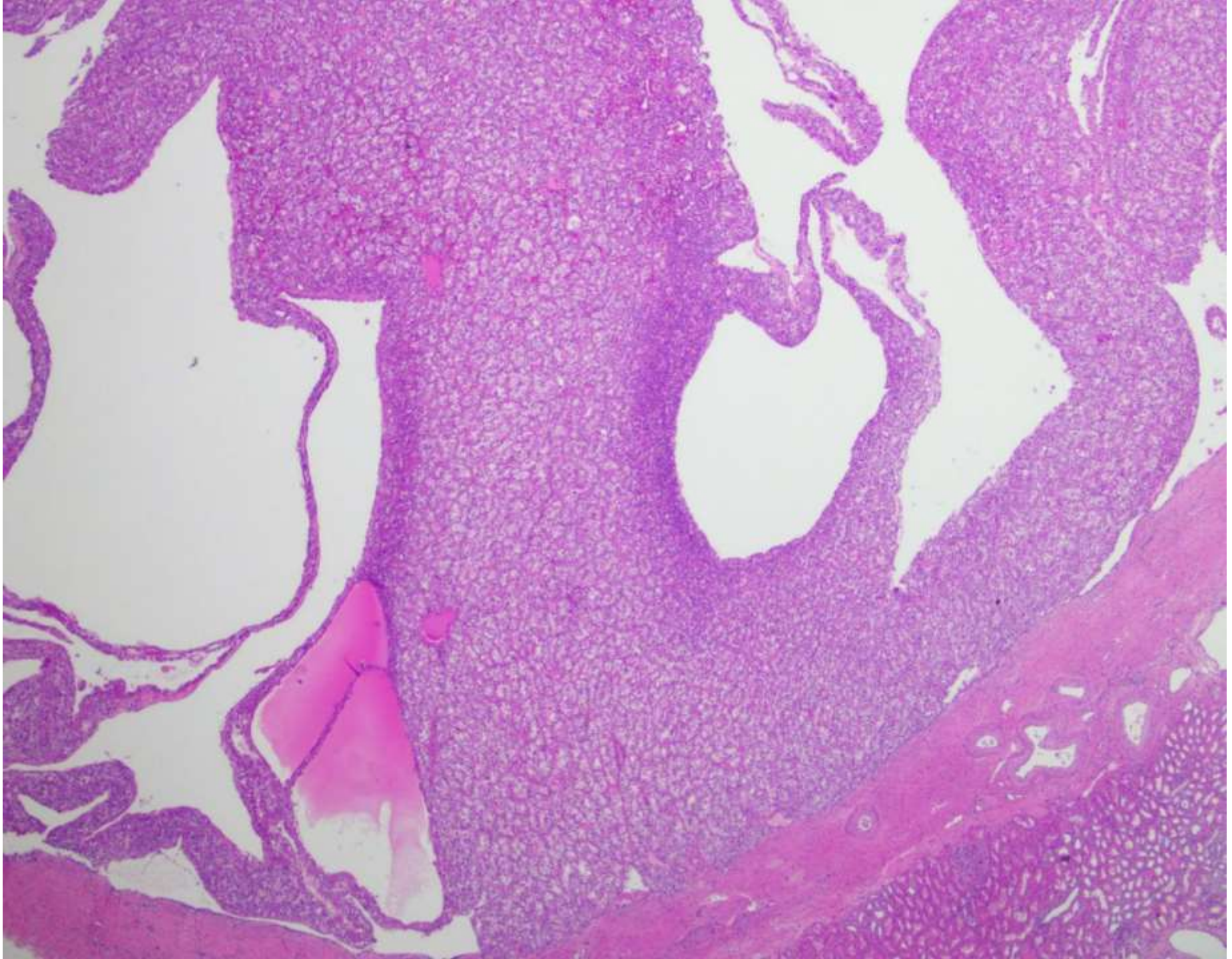
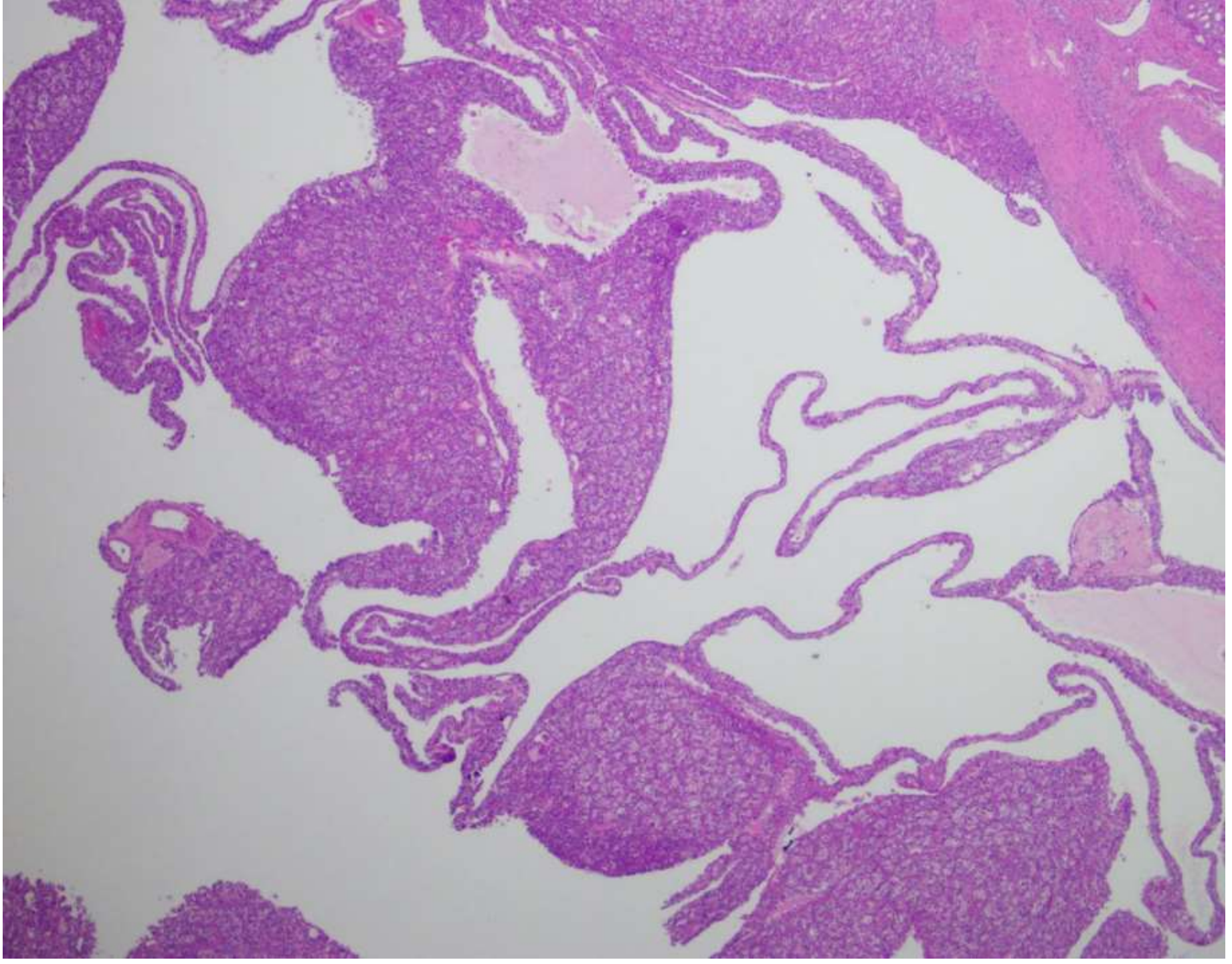
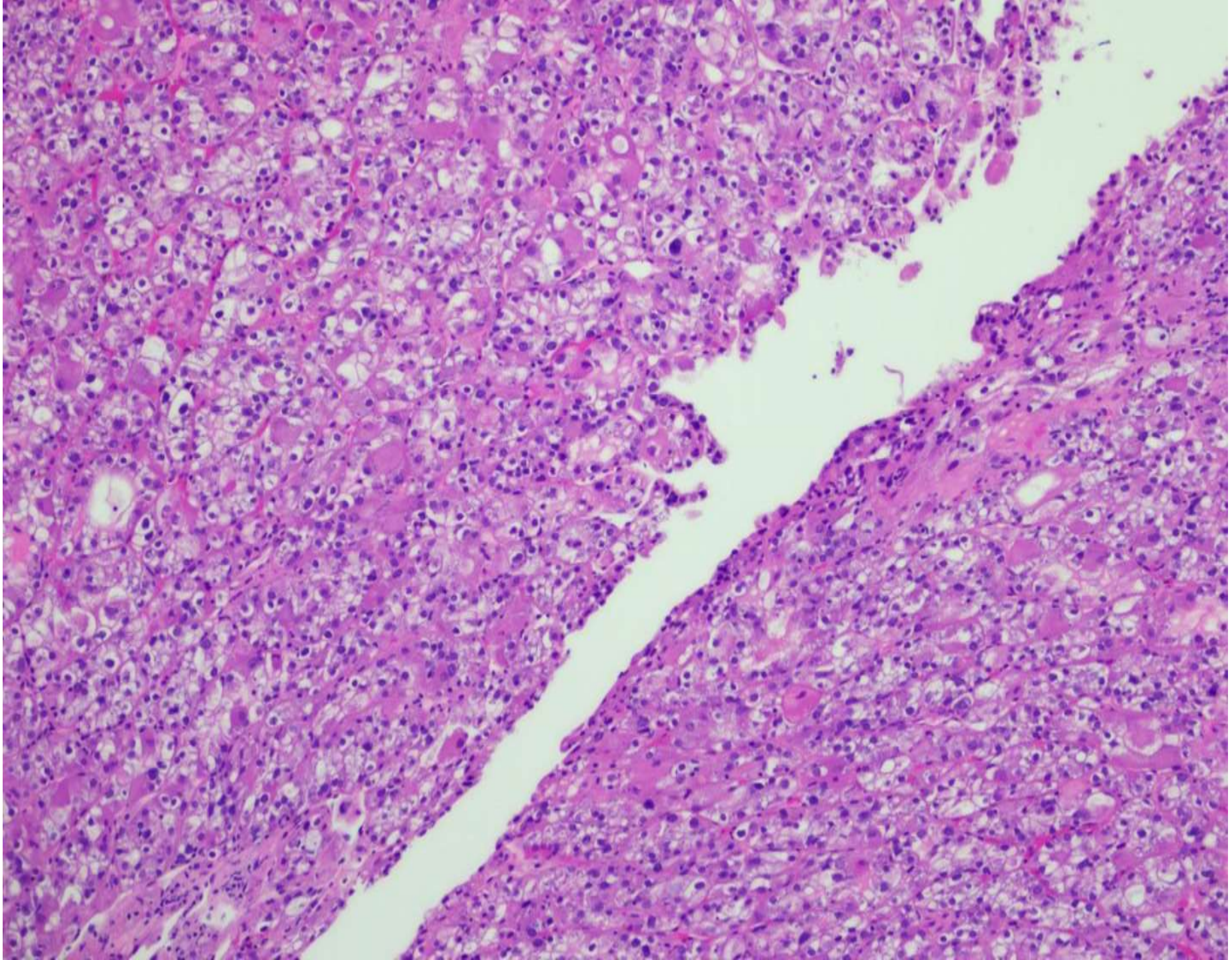
22-1206

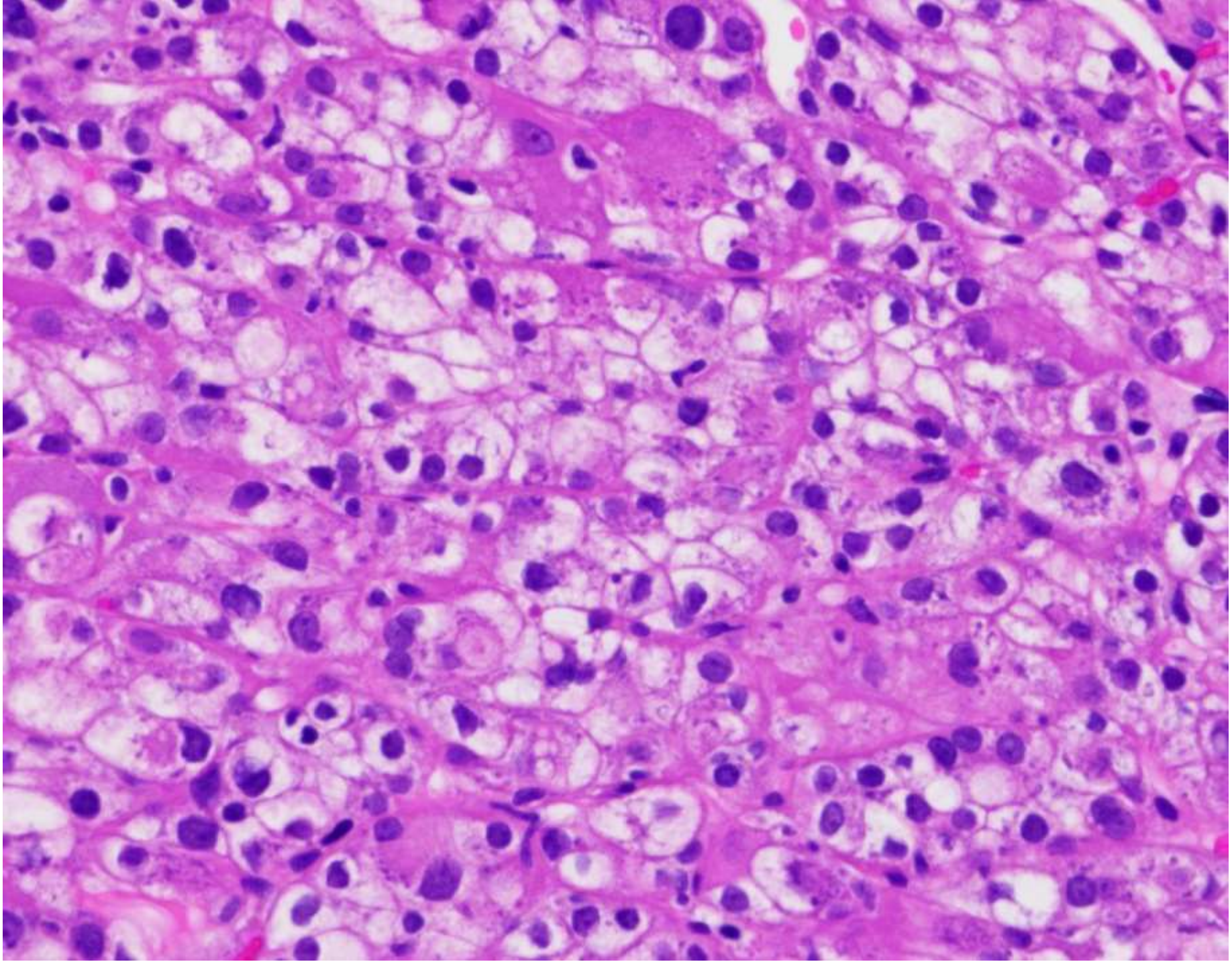
Armen Khararjian; Walnut Creek

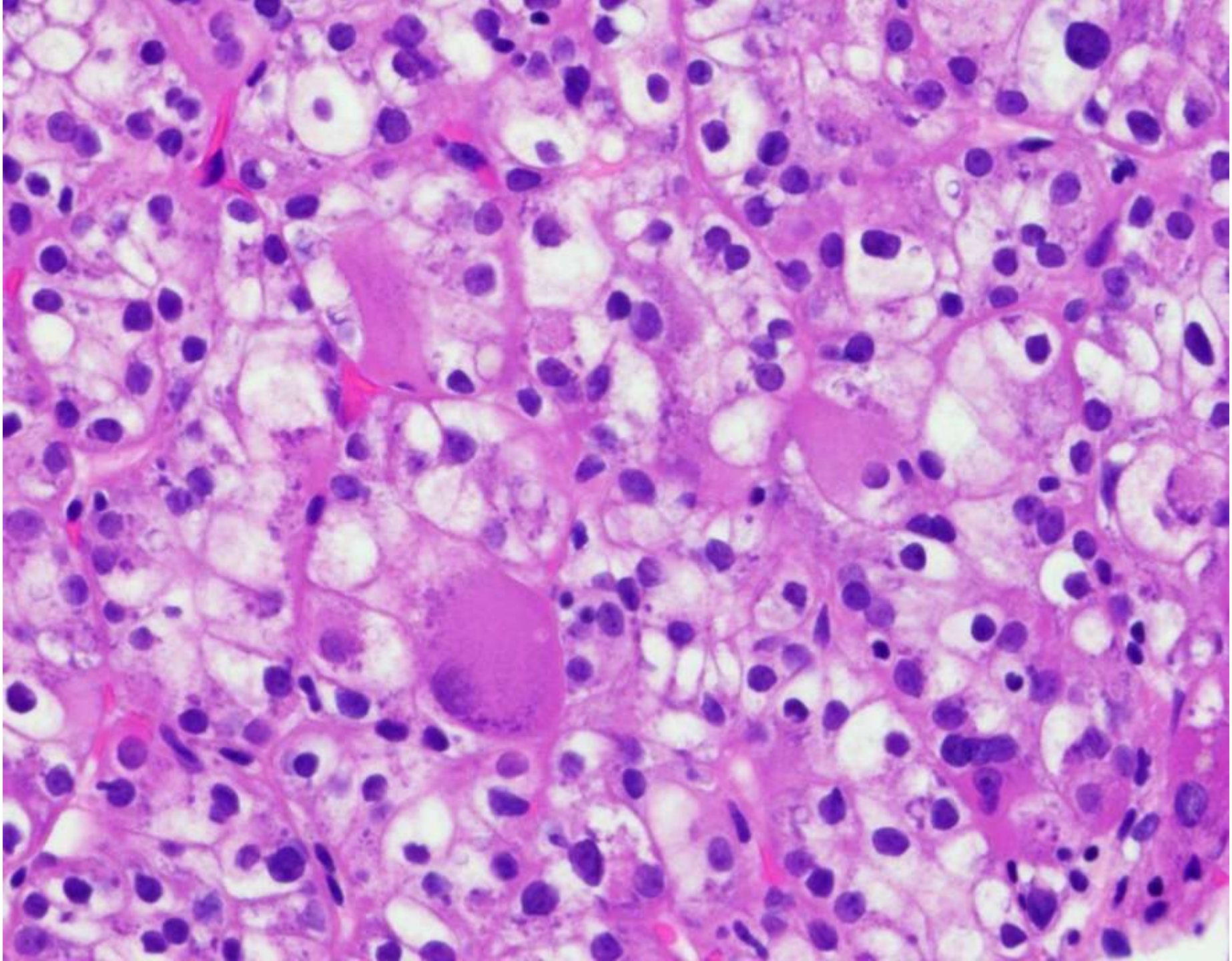
Reproductive age F with 2cm renal mass.











Stains

- Pancyto: positive
- CK7: negative
- CK20: positive
- CAIX: negative

Eosinophilic Solid and Cystic RCC

Eosinophilic Solid and Cystic RCC

- Solid and cystic components
- Subset of cells with voluminous eosinophilic cytoplasm with basophilic stippling
  - Sometimes can look similar to leishmaniasis
- Can have papillary architecture

IHC/Molecular

- CK20 positive
- CK7 negative
- CAIX negative
- AMACR patchy
- CD117 negative
- Frequent somatic loss of function mutations of TSC1 or TSC2

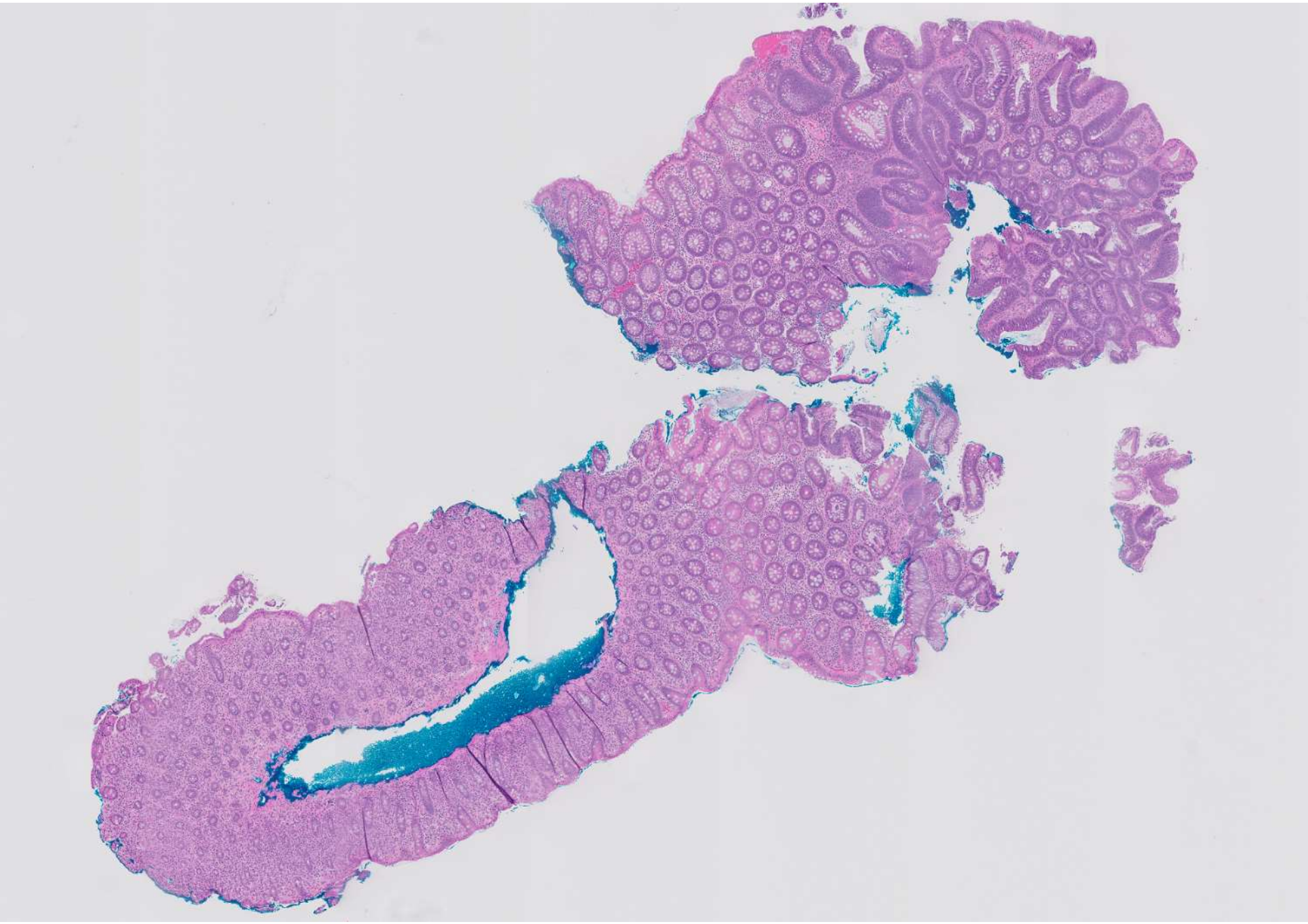
ESC

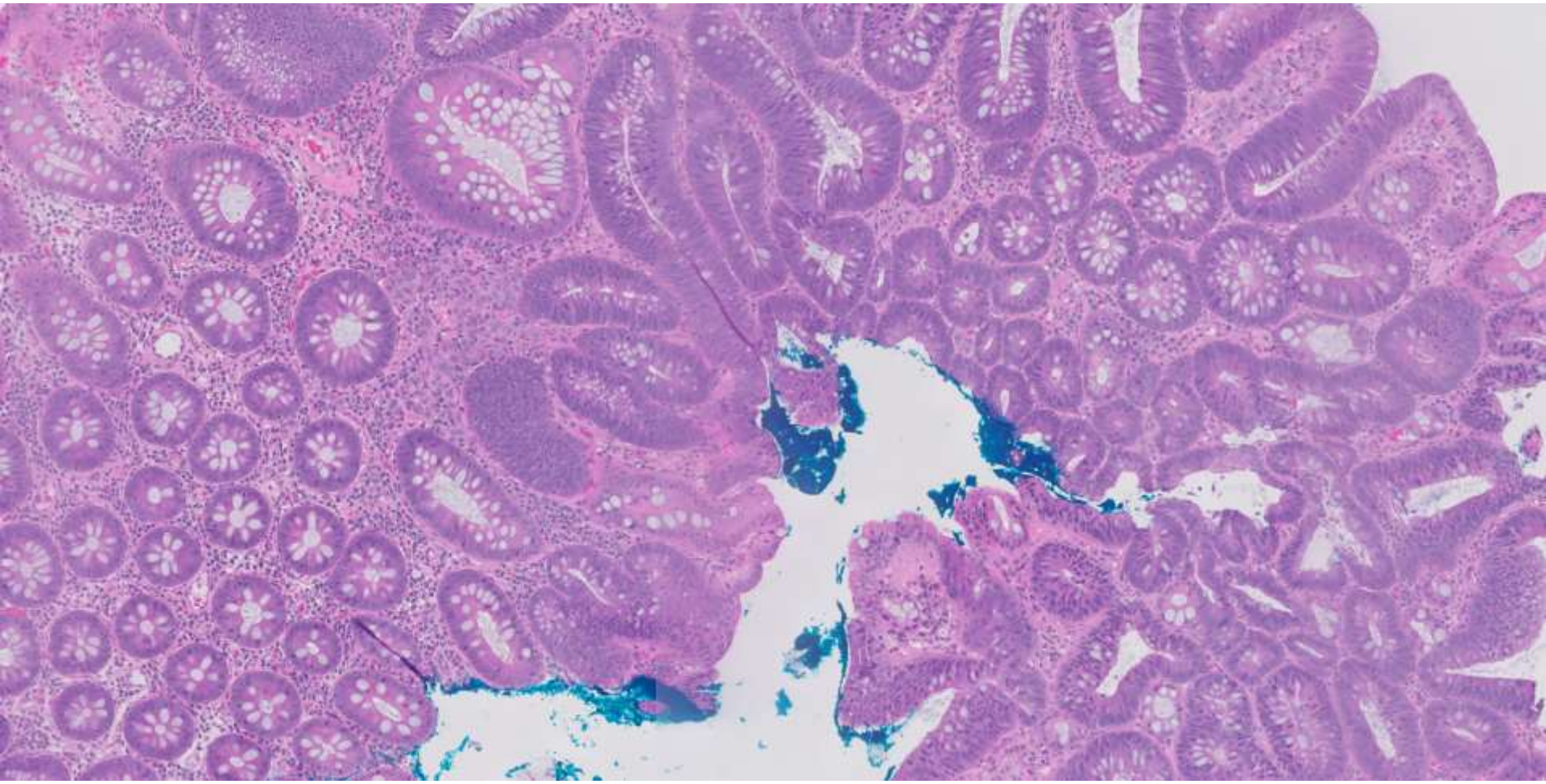
- Females > males
- Broad age range
- Usually display indolent behavior
- Rarely locally aggressive/metastasize

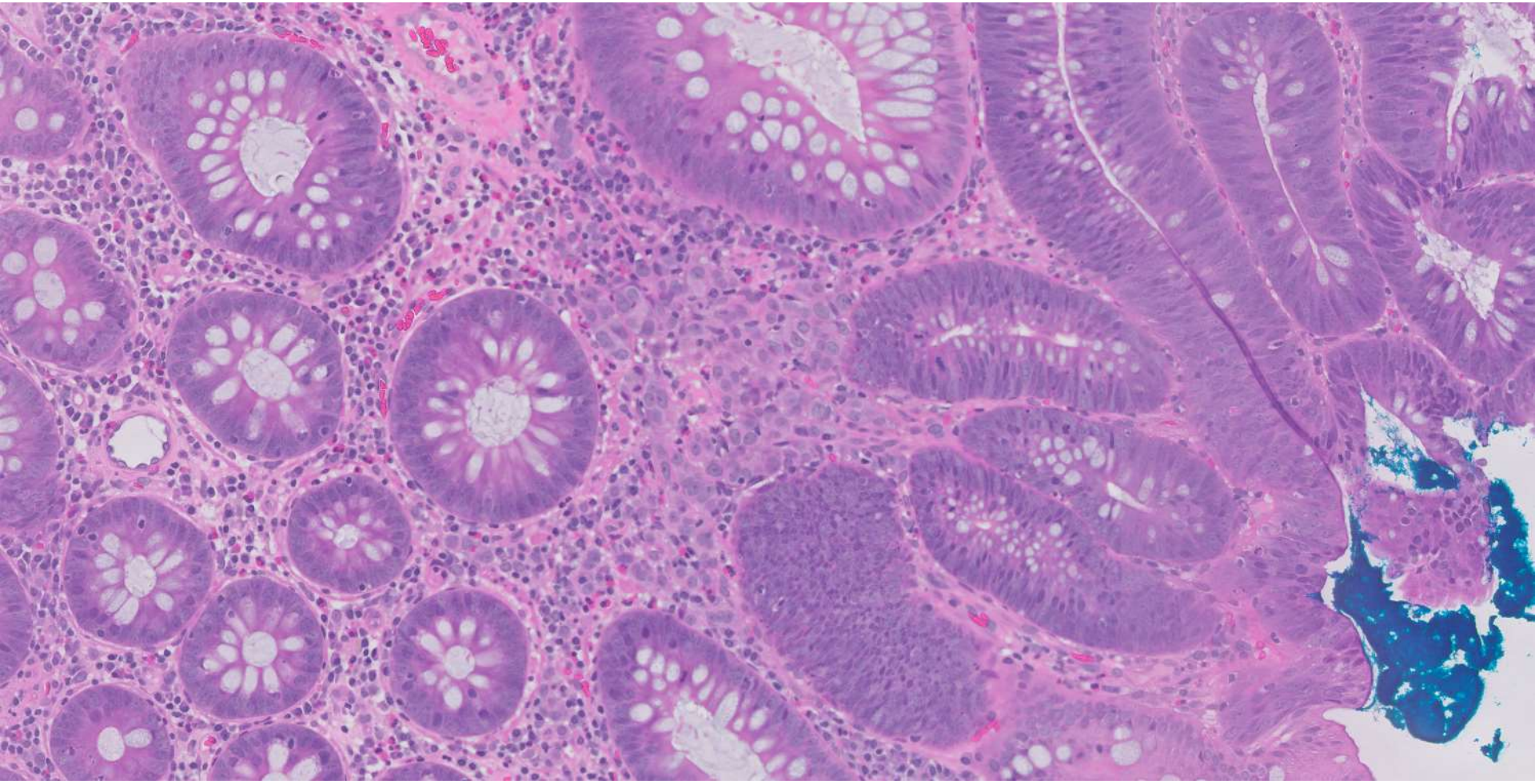
22-1207

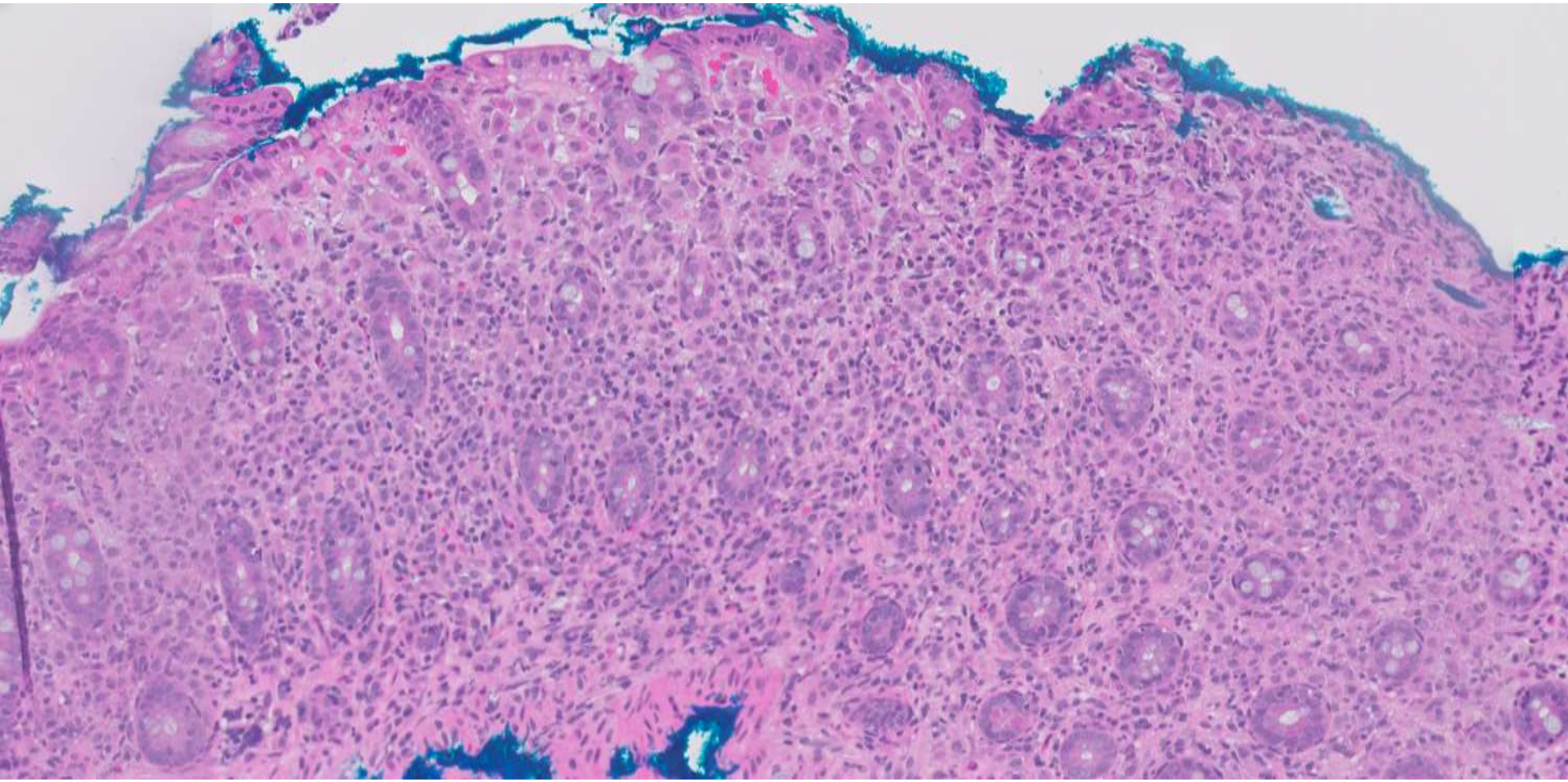
Dave Bingham; Stanford

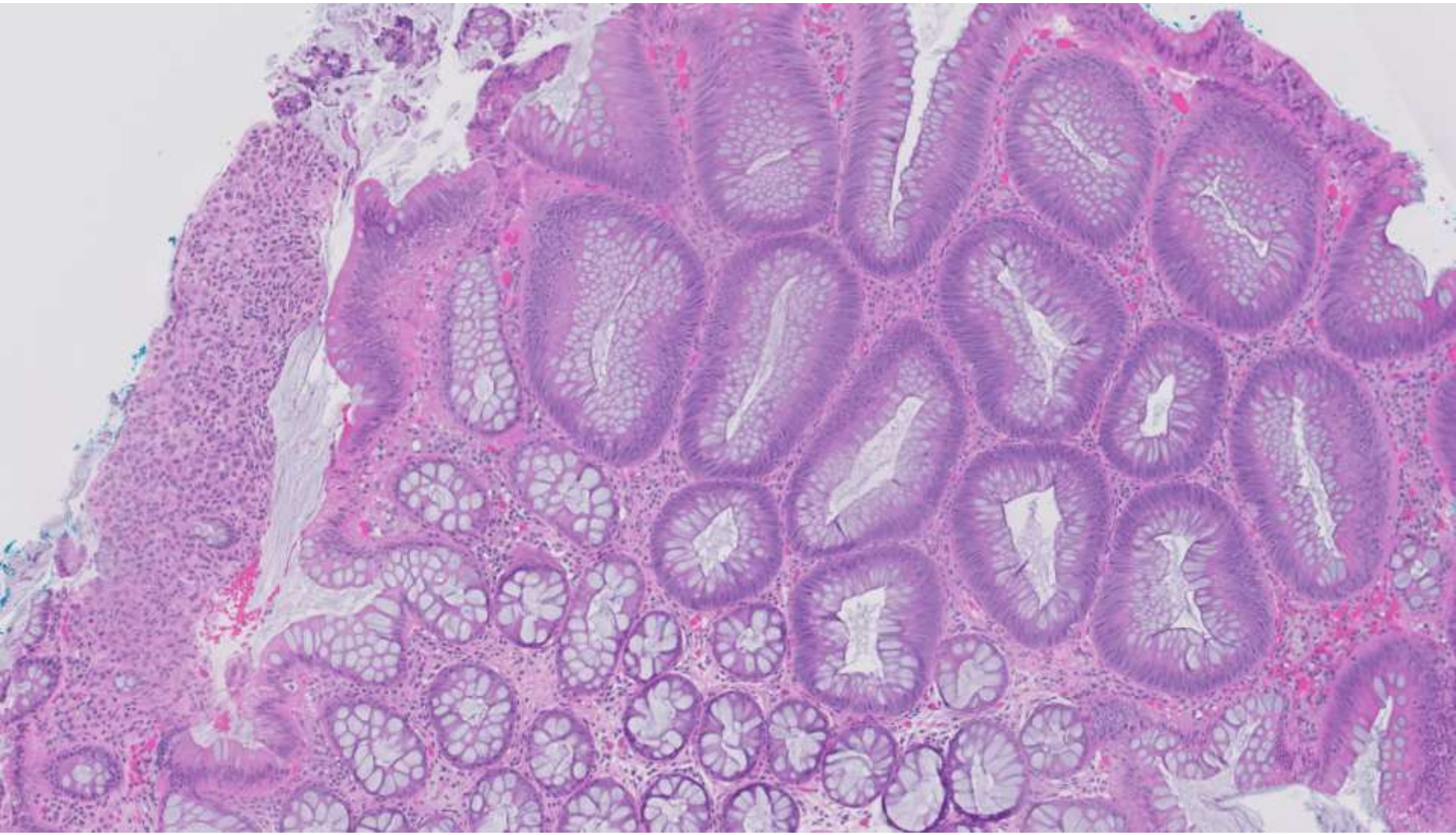
70ish F undergoes screening colonscopy.

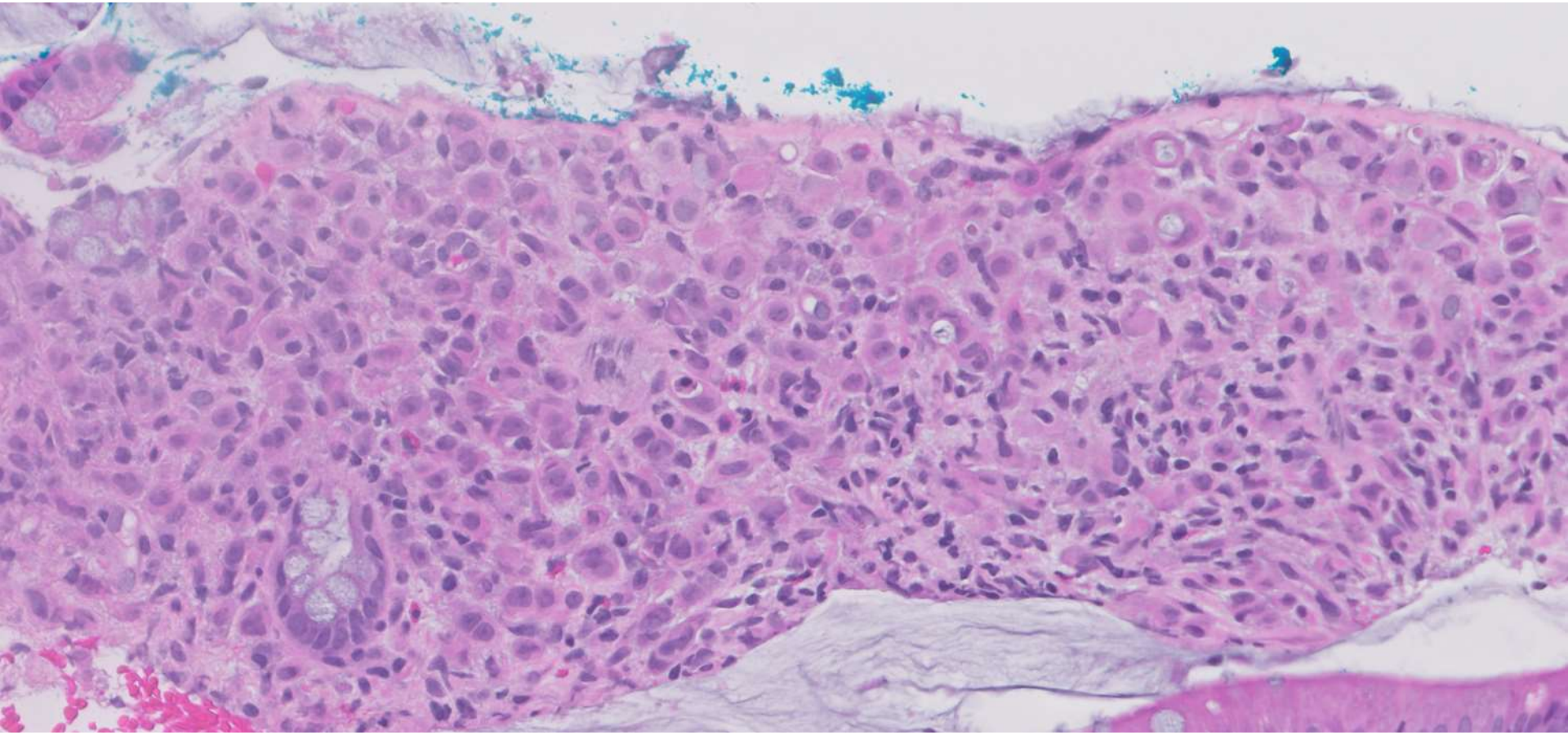






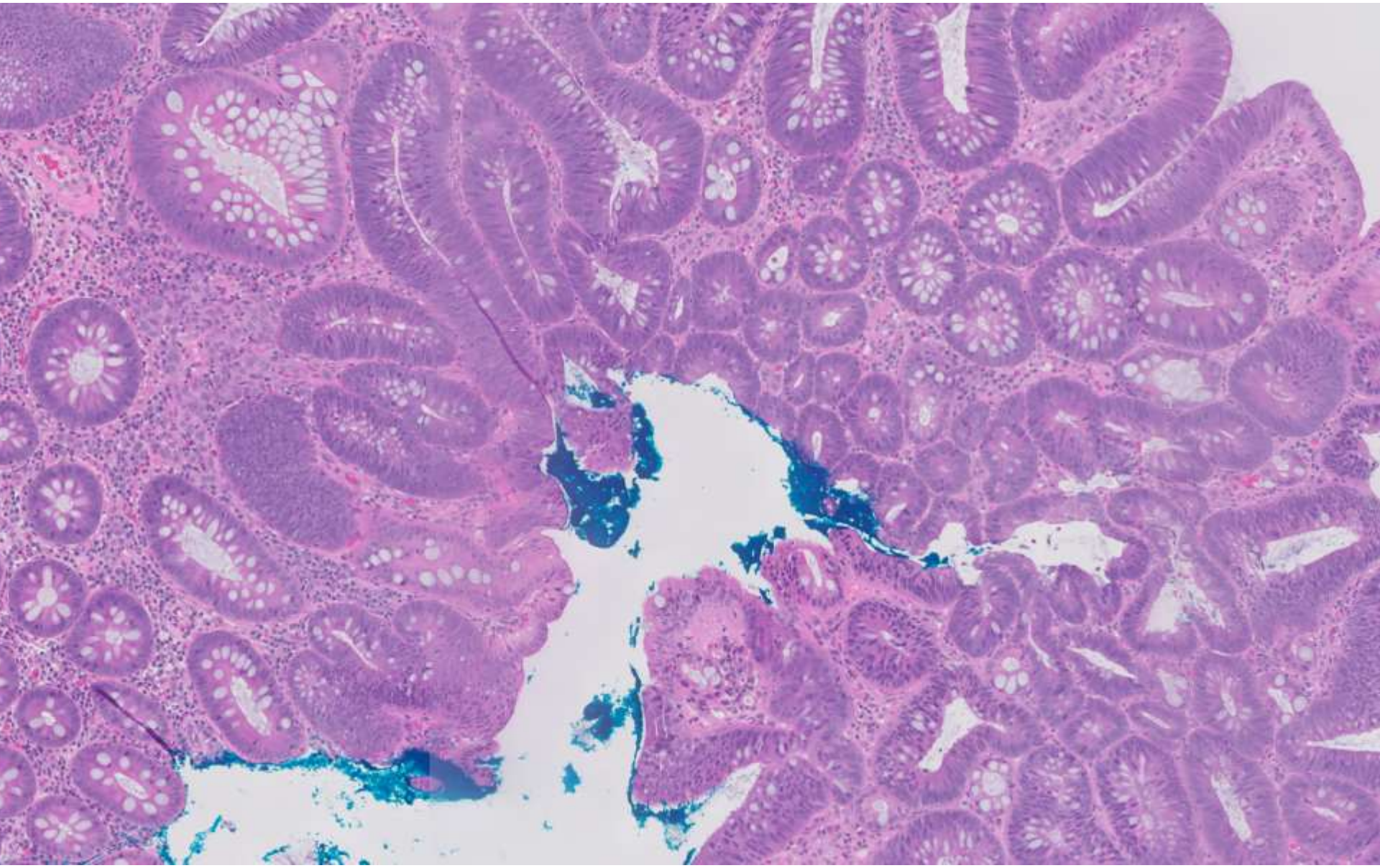


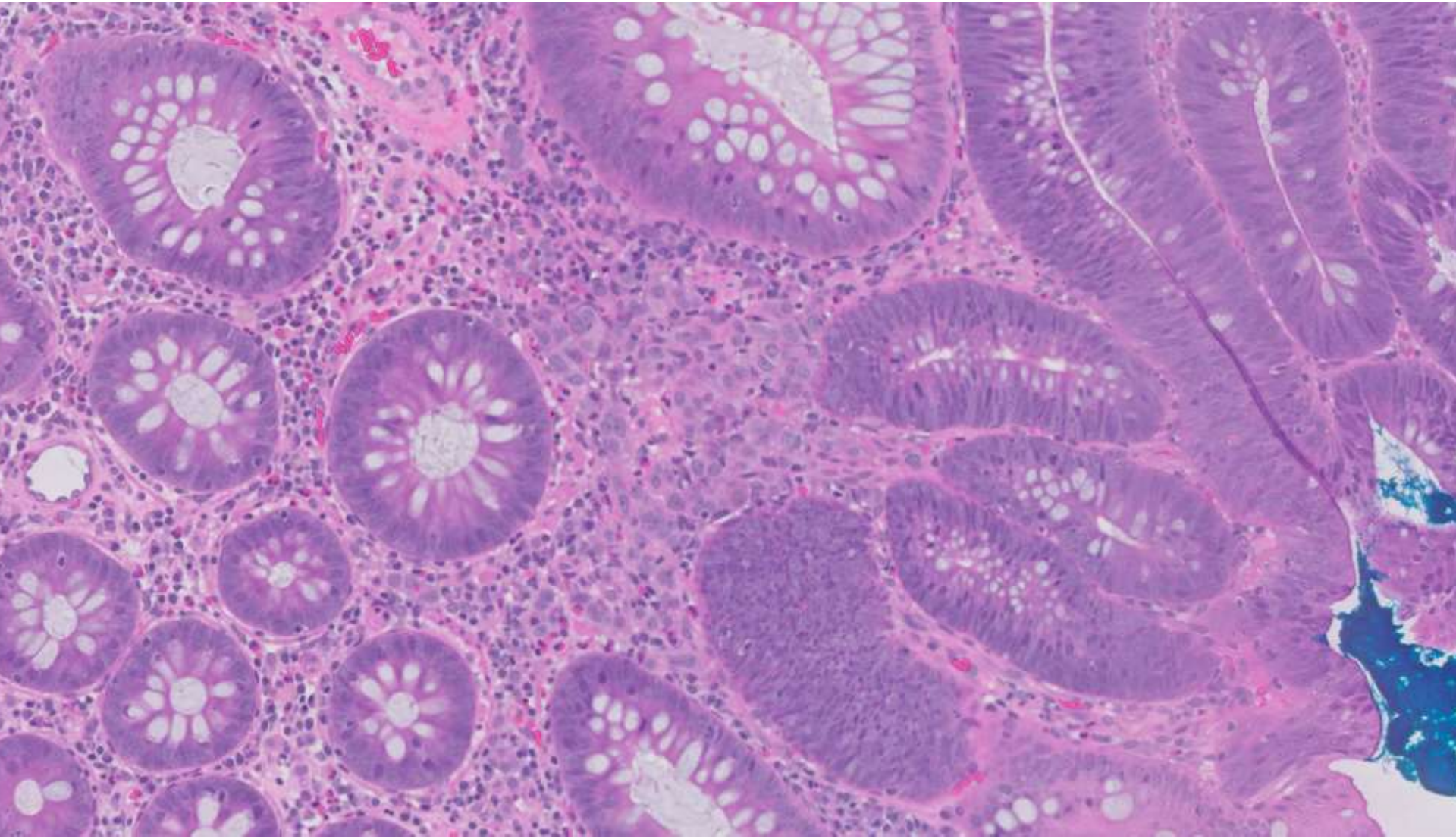


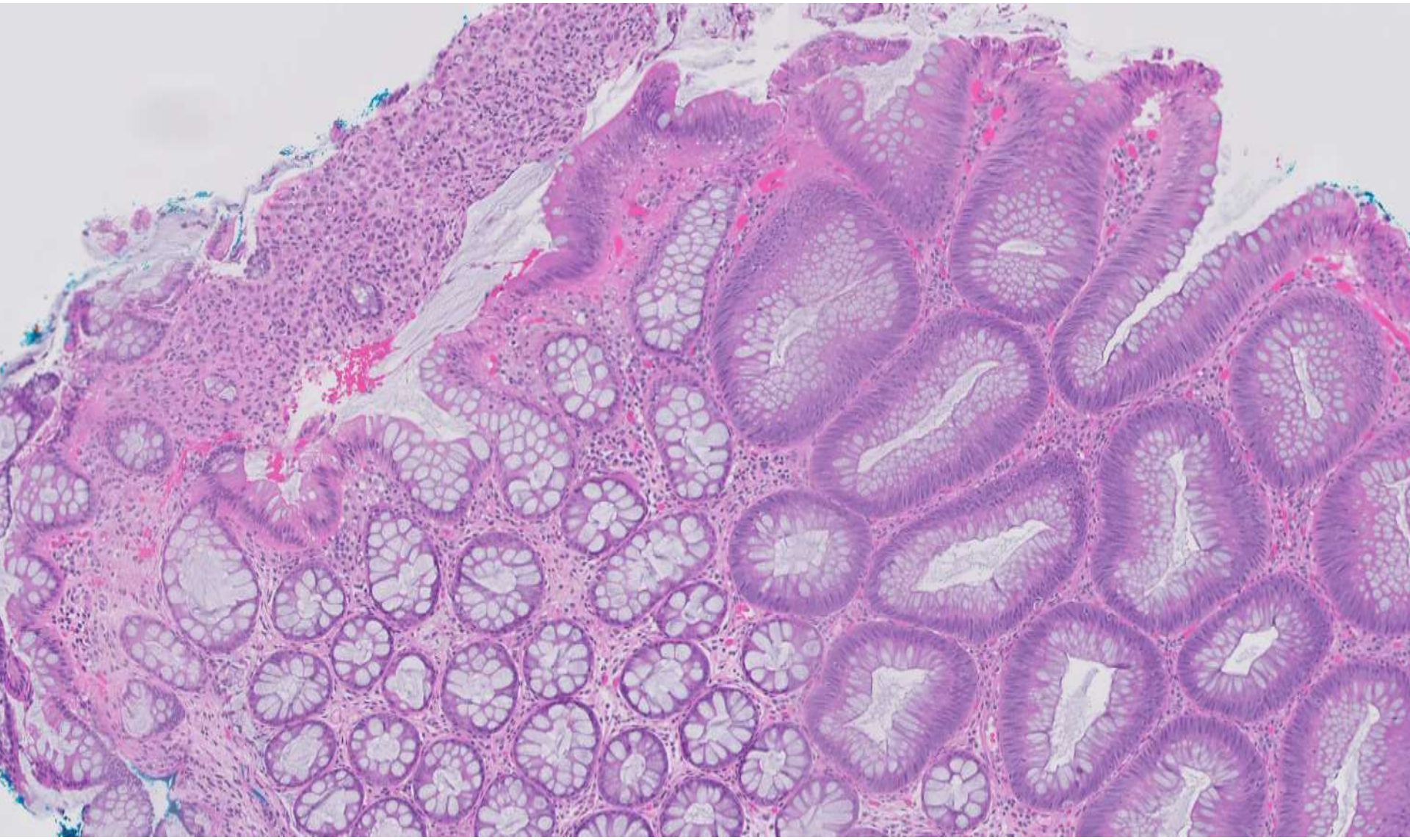


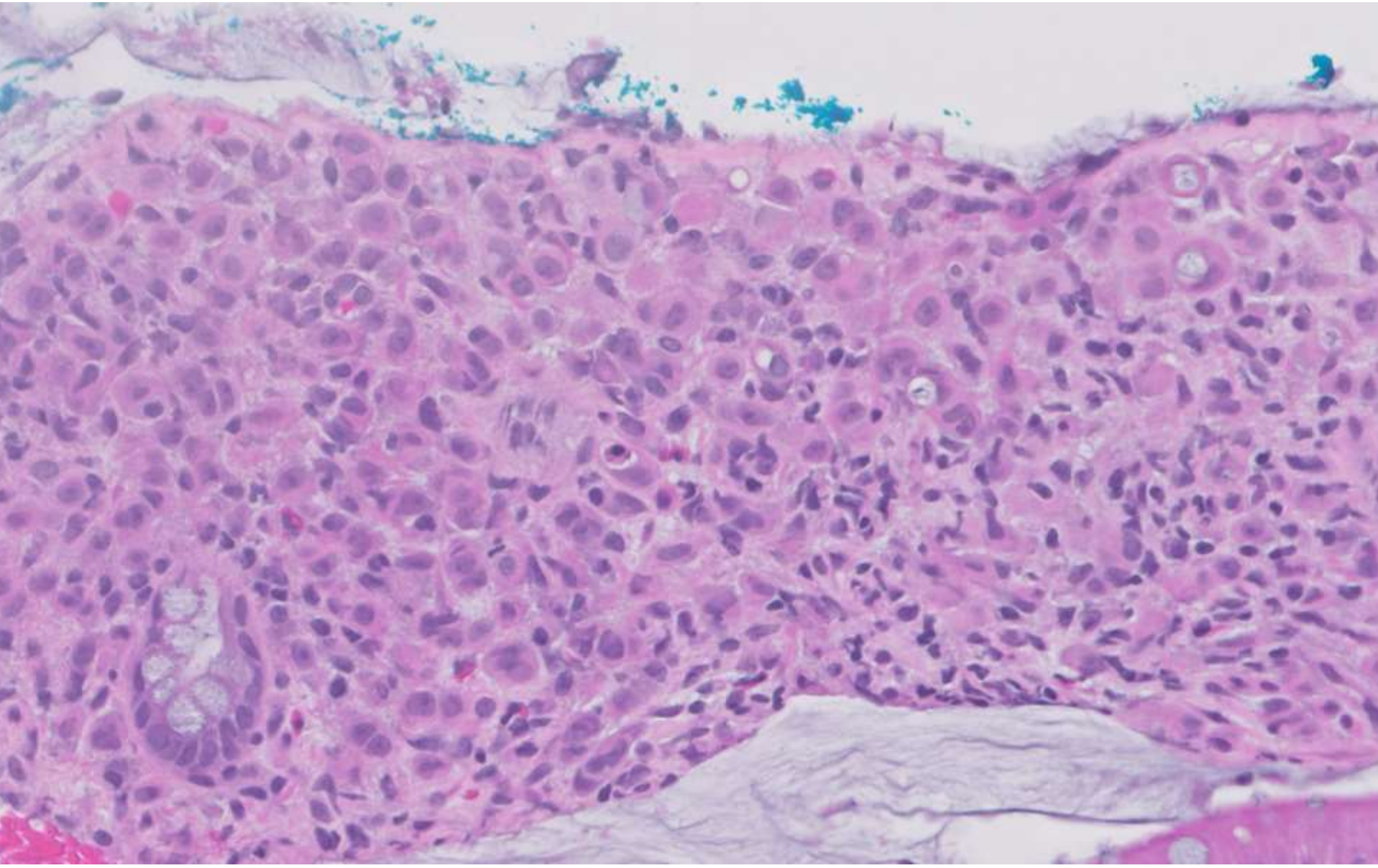
Metastatic Breast Carcinoma to a Tubular Adenoma

(Tumor to tumor metastasis)









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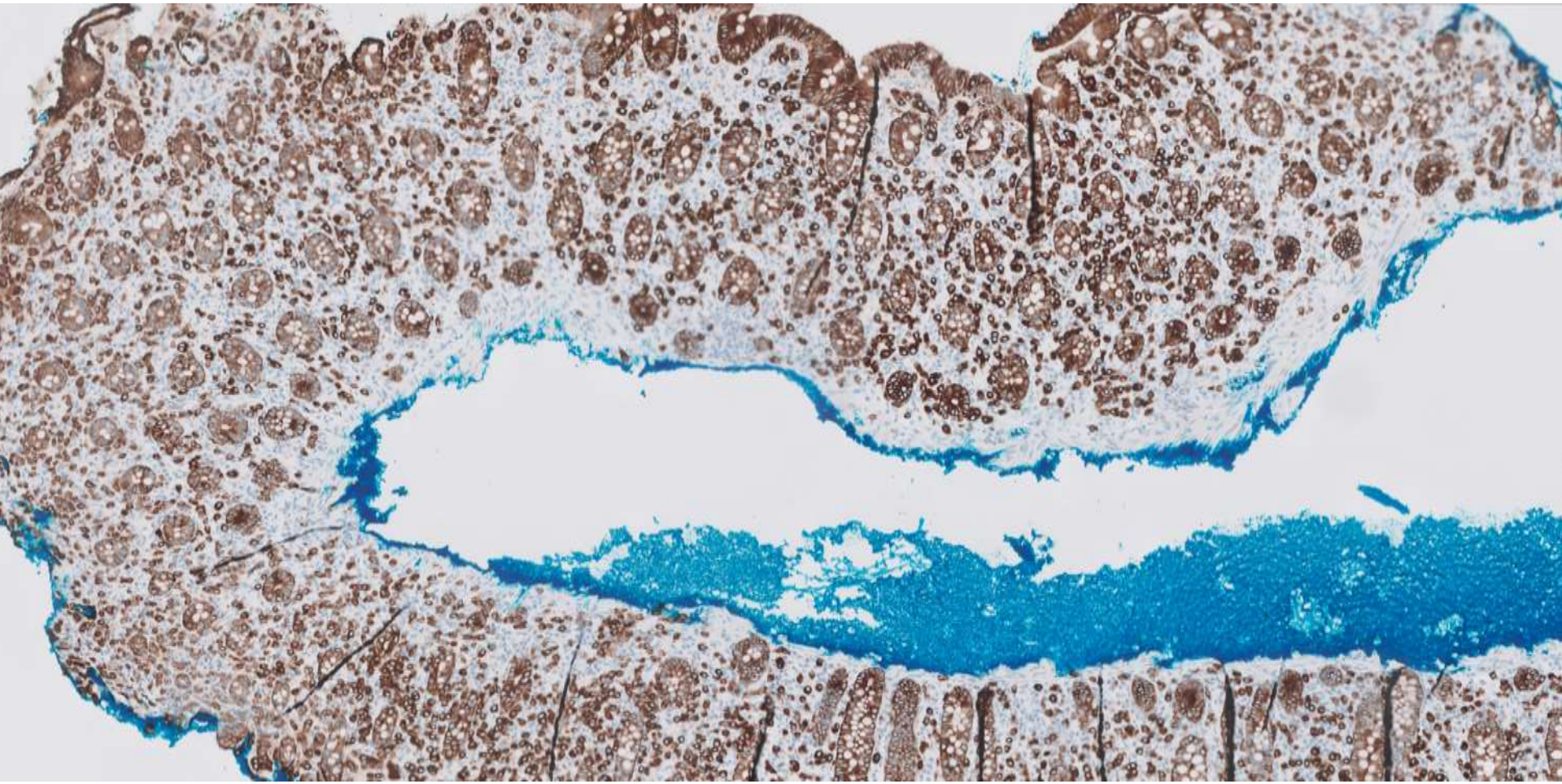

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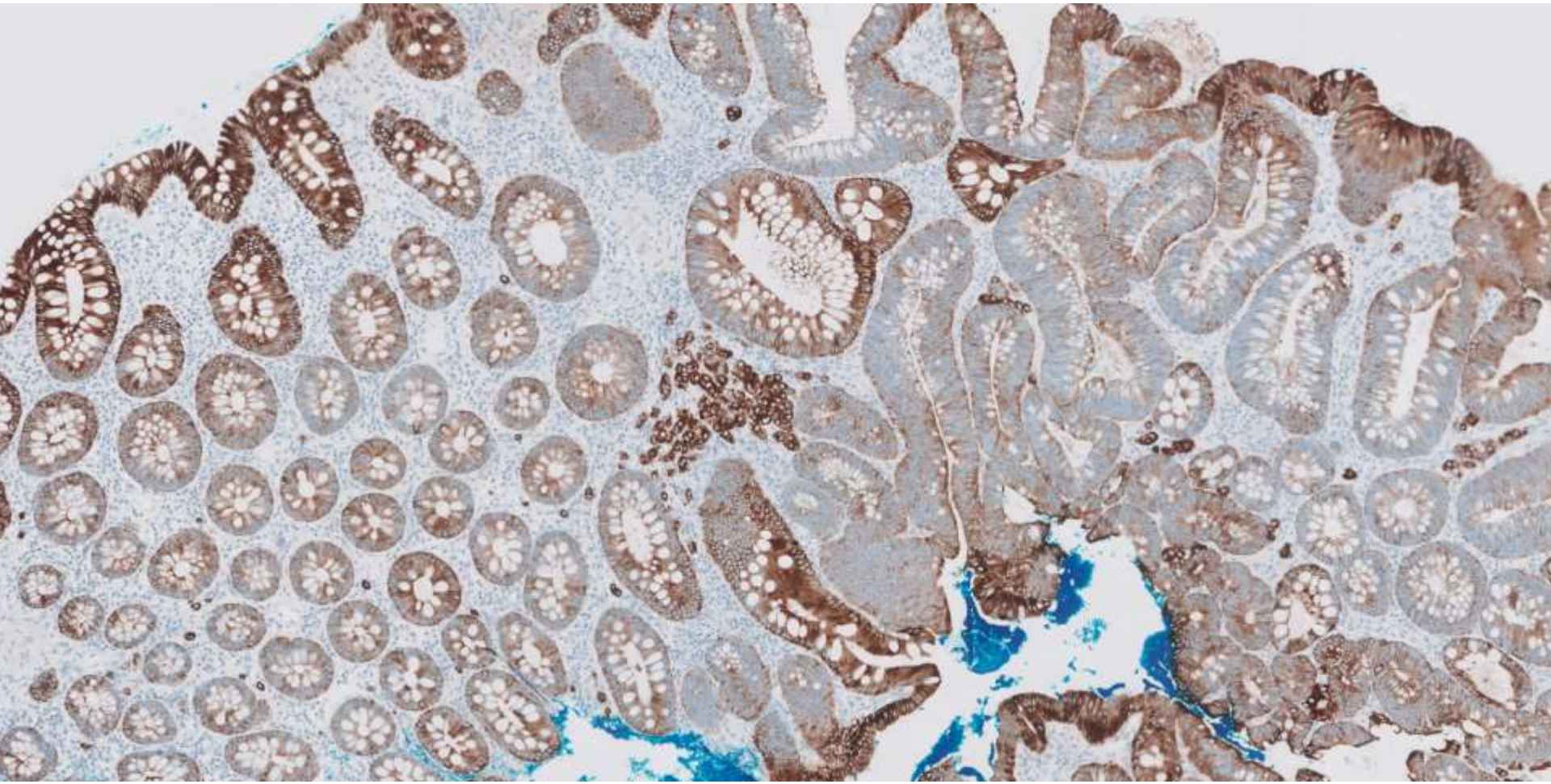
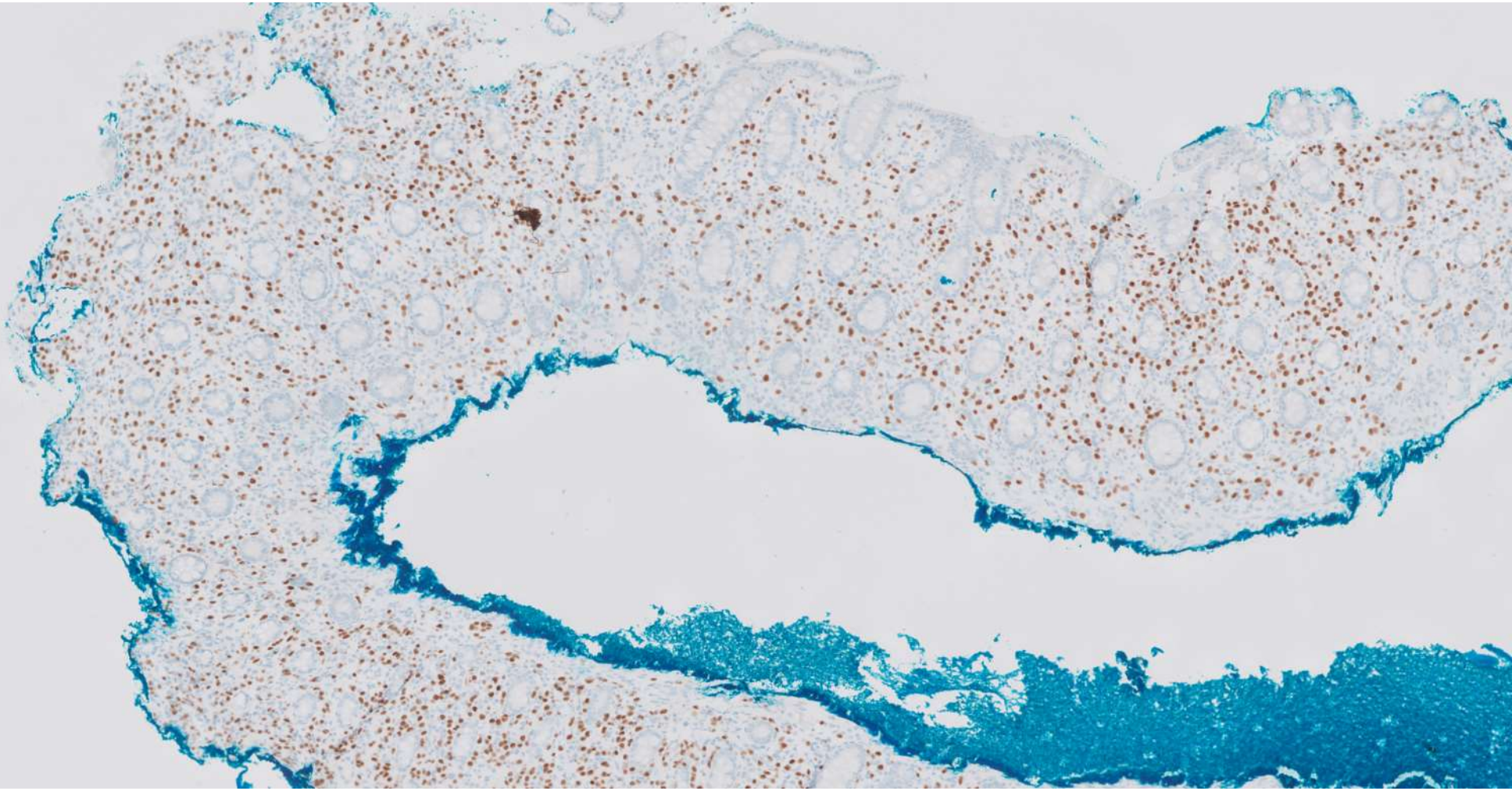


Estrogen receptor



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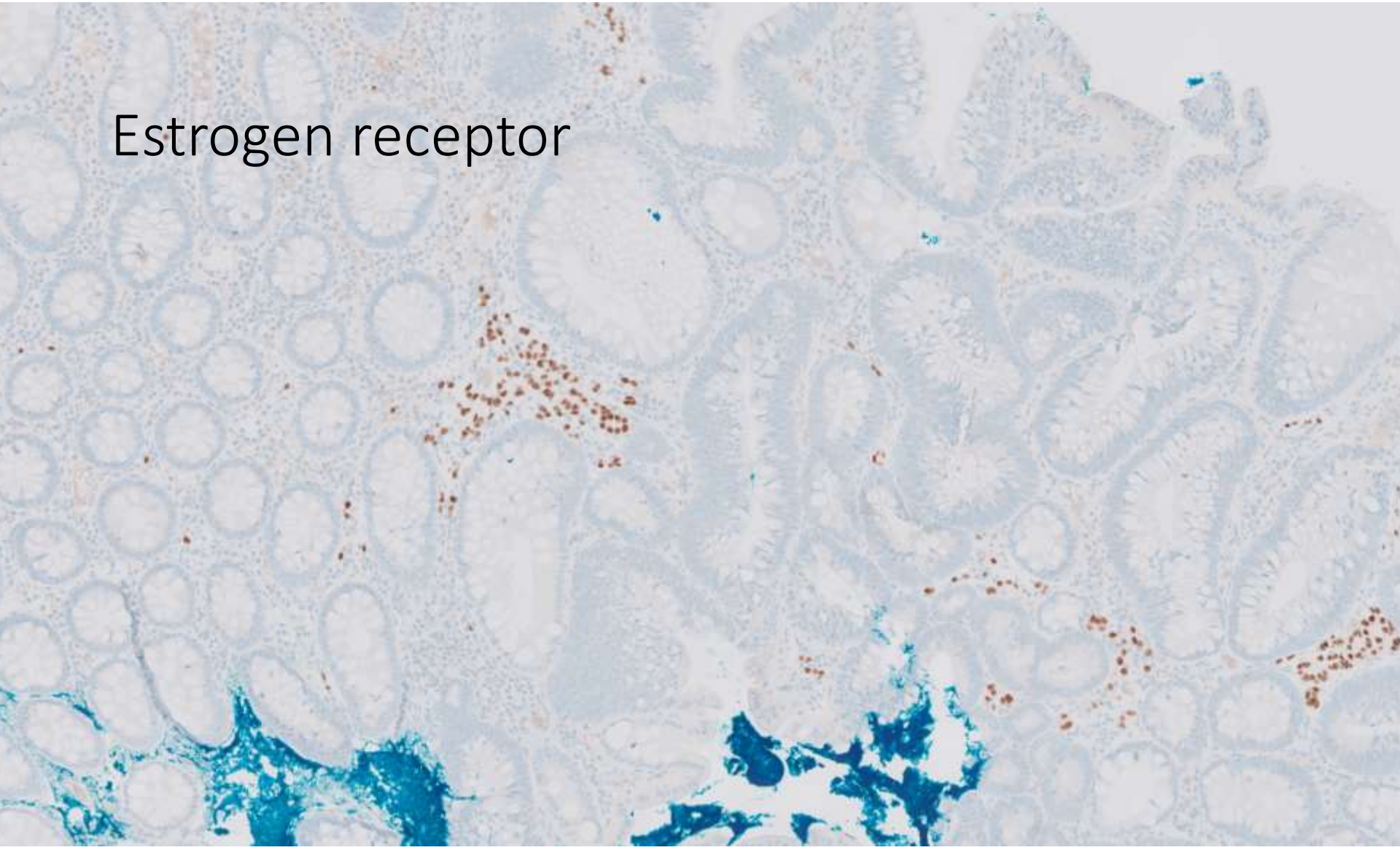
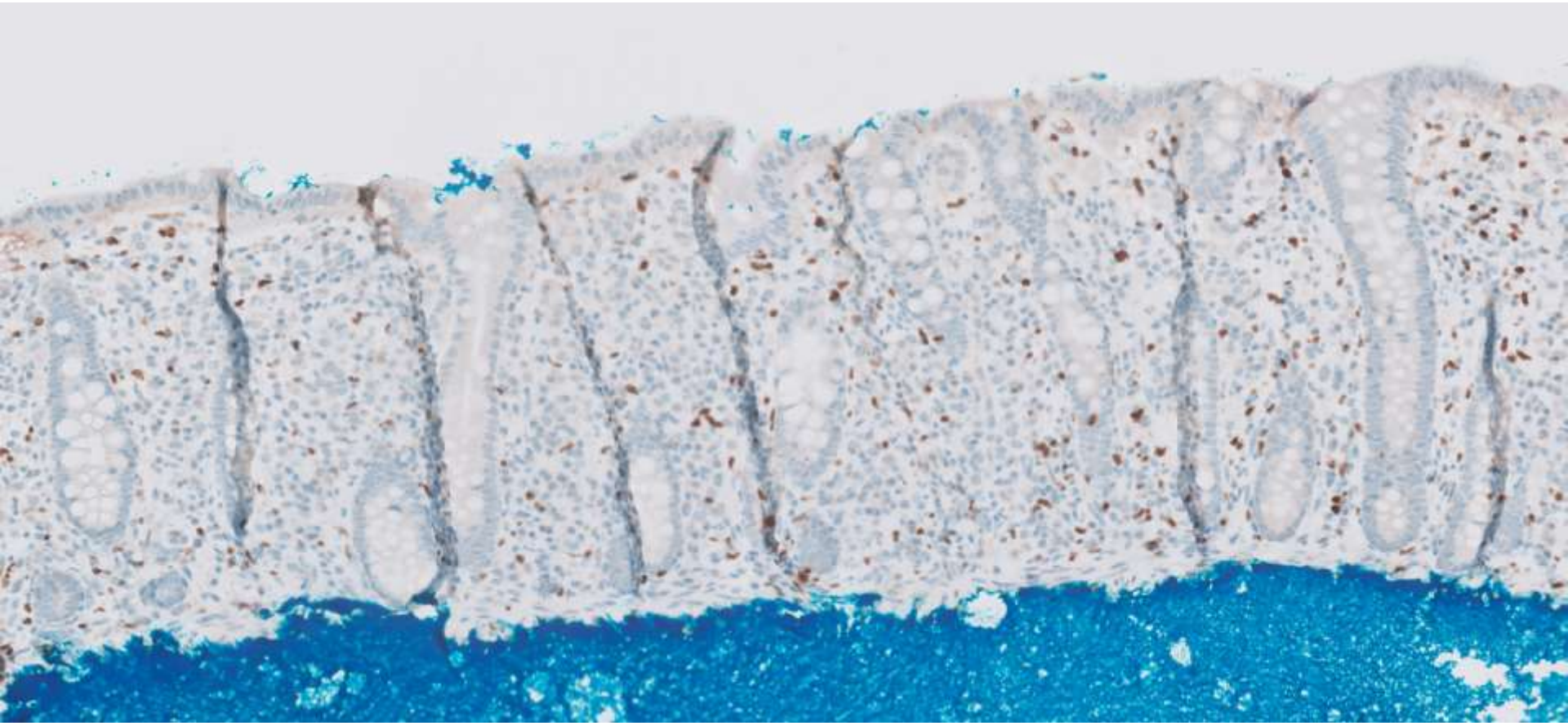
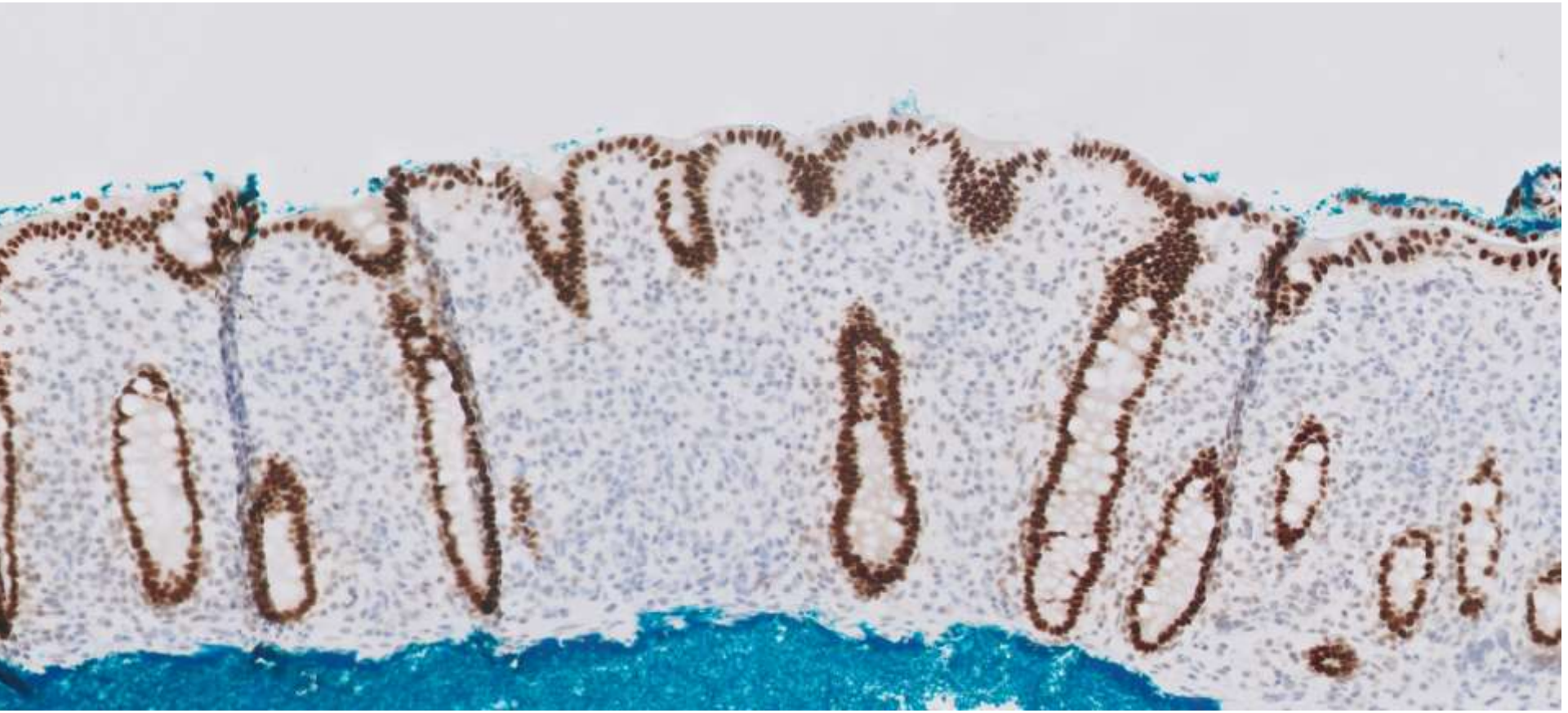


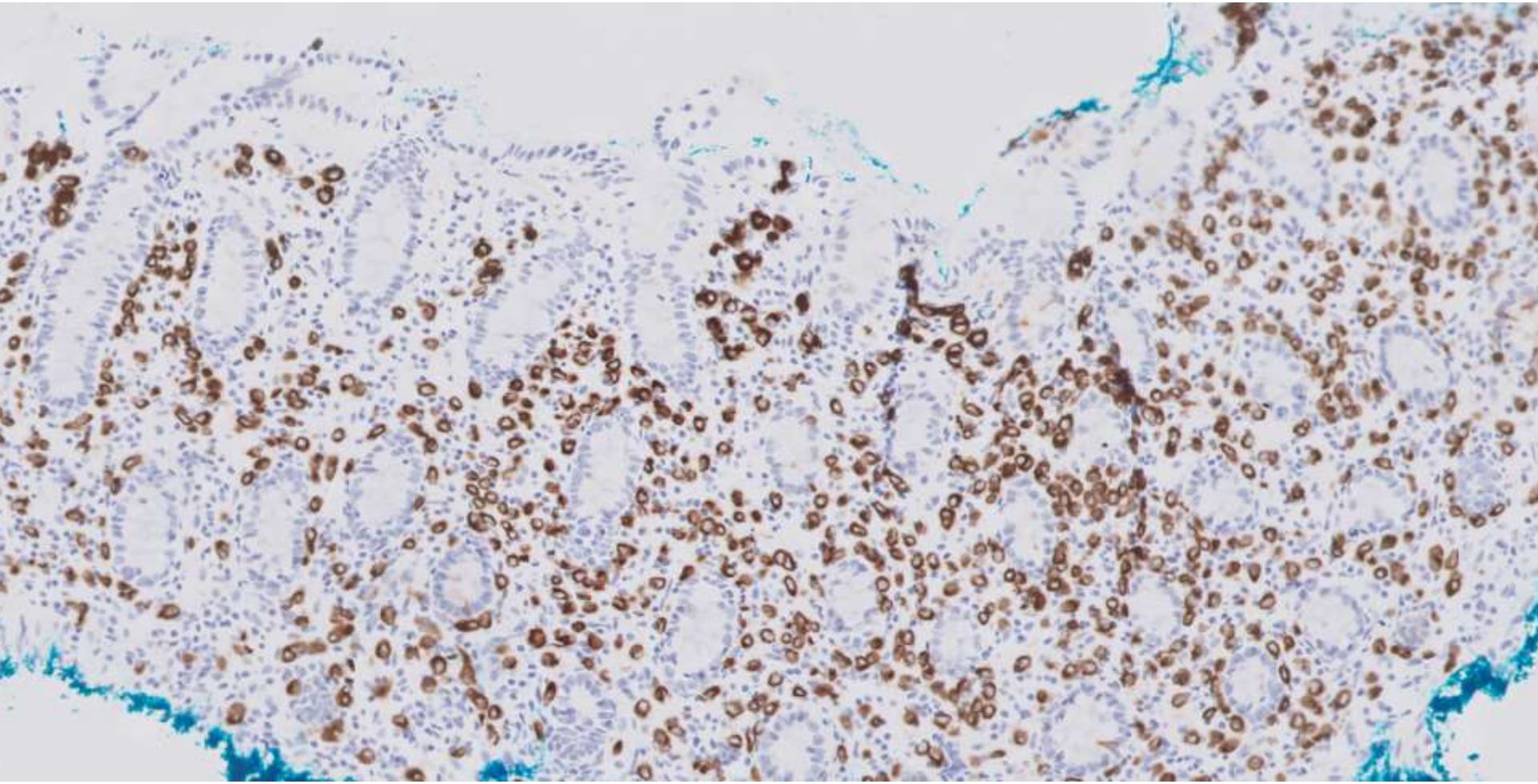
PU-1 (histiocyte)

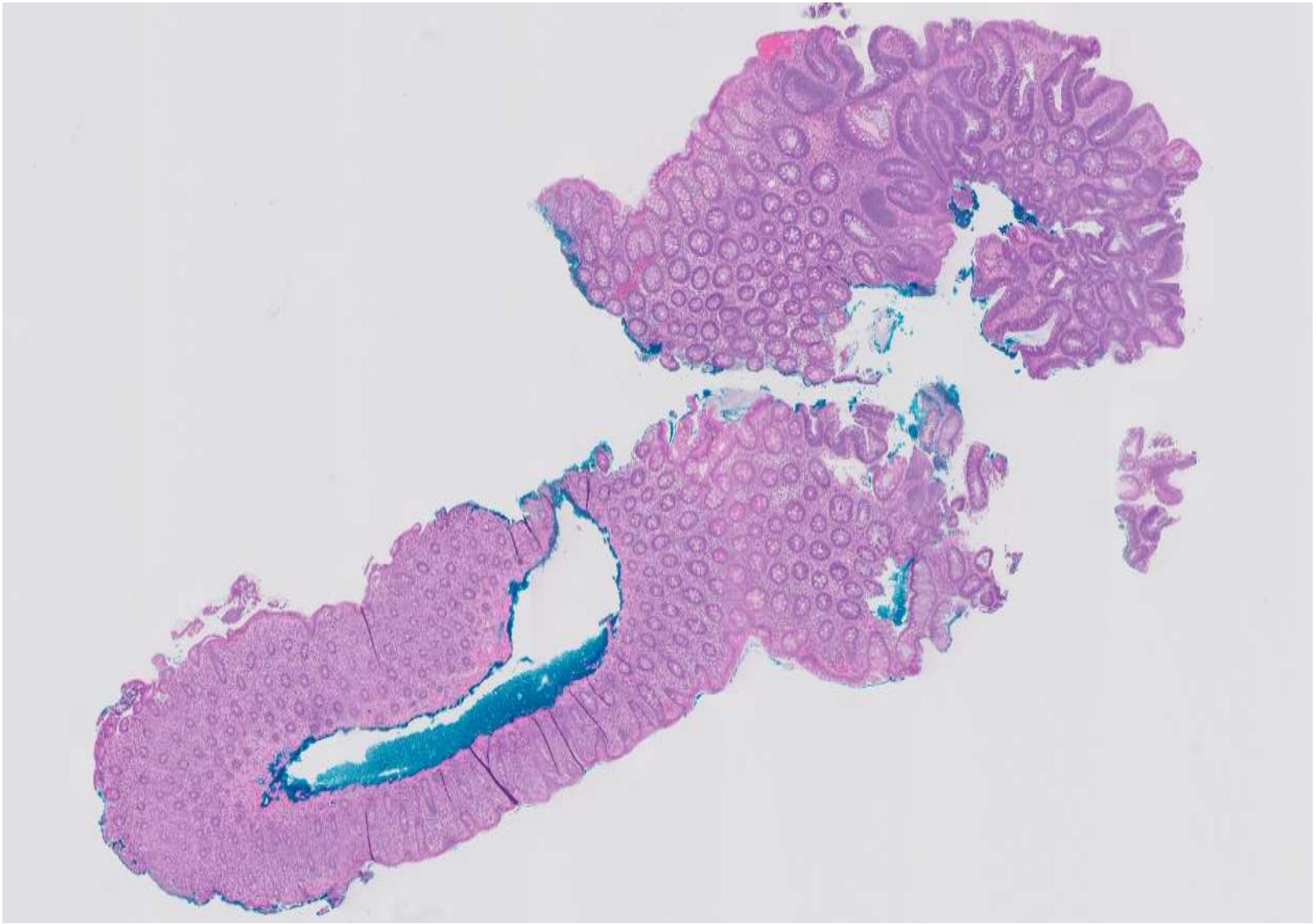


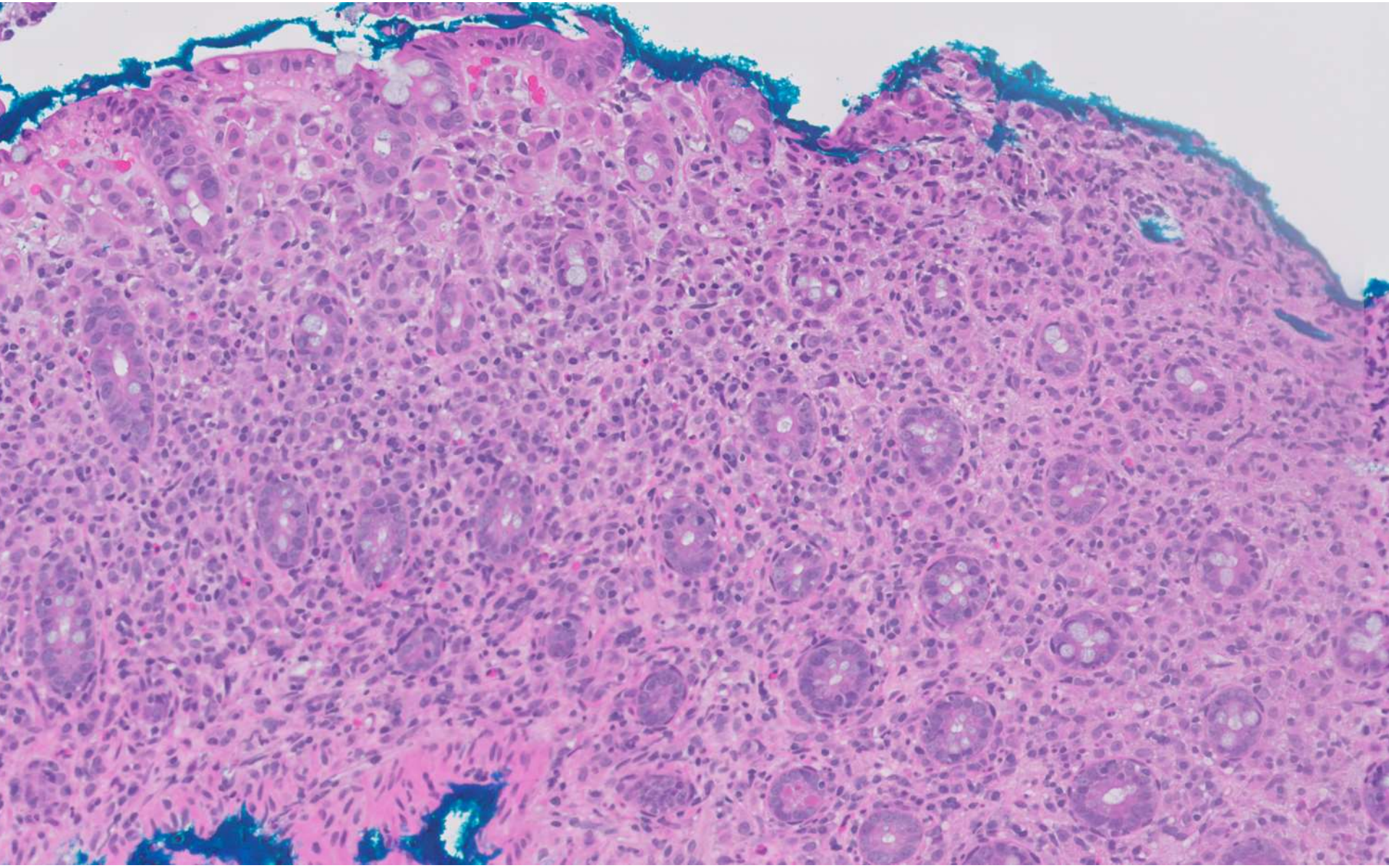
CDX2



CK7







Take home points

- Even tubular adenomas can be tricky!
- Look for monotonous background hypercellularity
- The most commonly missed diagnosis is the second diagnosis!

References:

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