Disclosures
October 3, 2016

The following planners and faculty had no financial relationships with commercial interests to disclose:

Presenters:

Sarah Cherny, MD
Allison Zemek, MD
John Higgins, MD, PhD
Malti Kshirsagar, MD
Ankur Sangoi, MD
James Mathews, MD
Seth Lummus, MD
Hannes Vogel, MD
Alana Shain, MD
Sunny Kao, MD

Activity Planners:

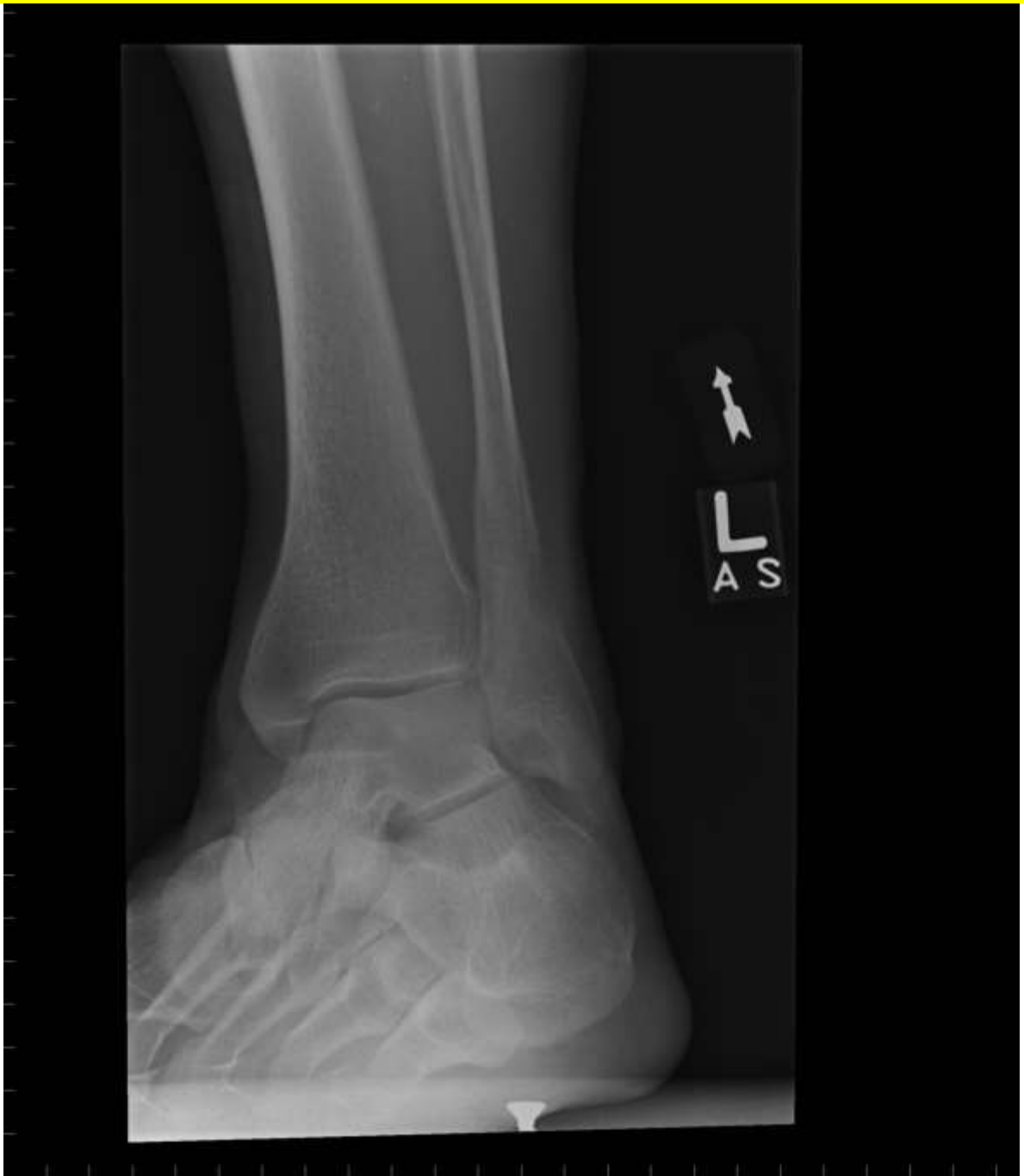
Kristin Jensen, MD
Ankur Sangoi, MD

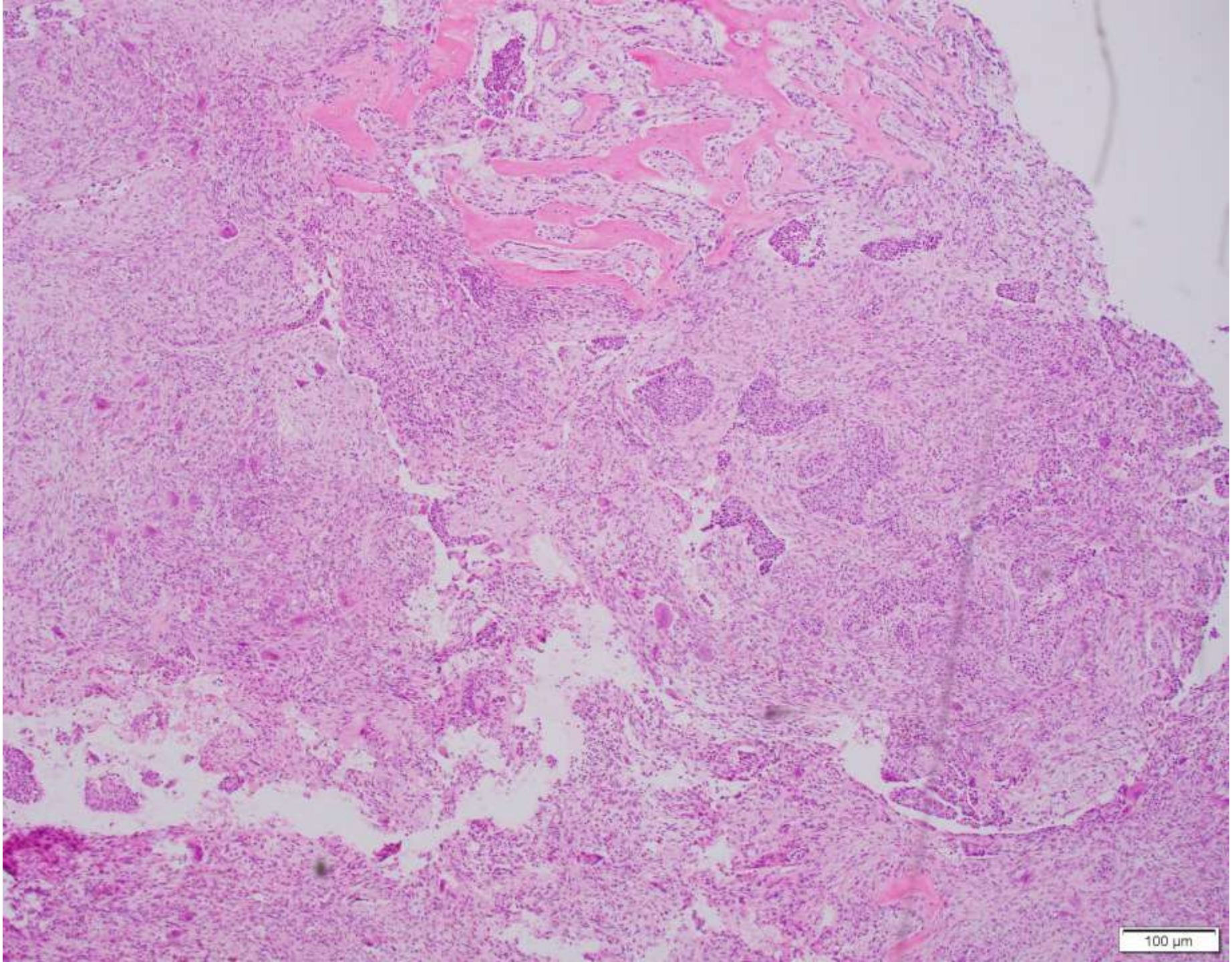
SB 6091

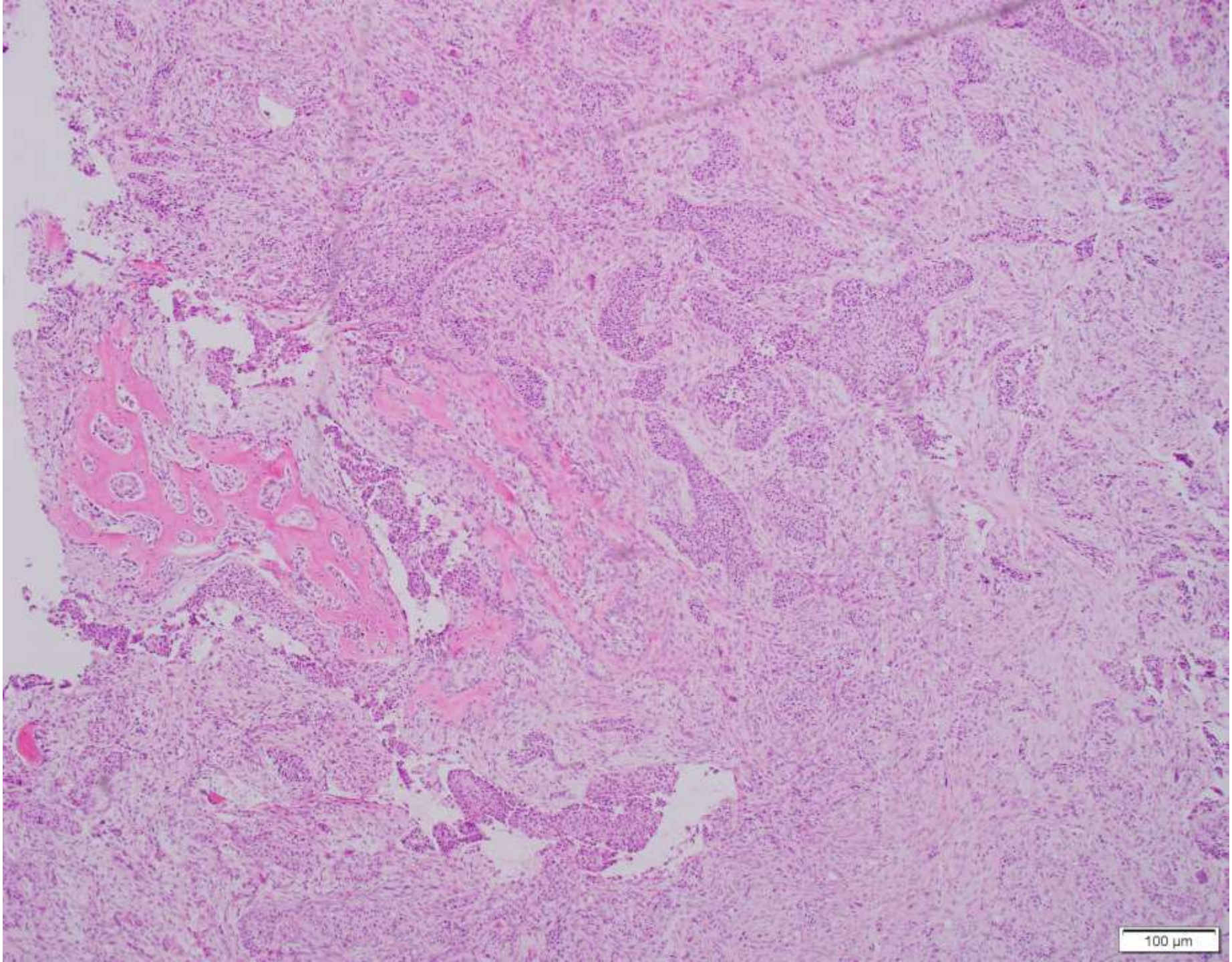
Sarah Cherny; Kaiser San Francisco

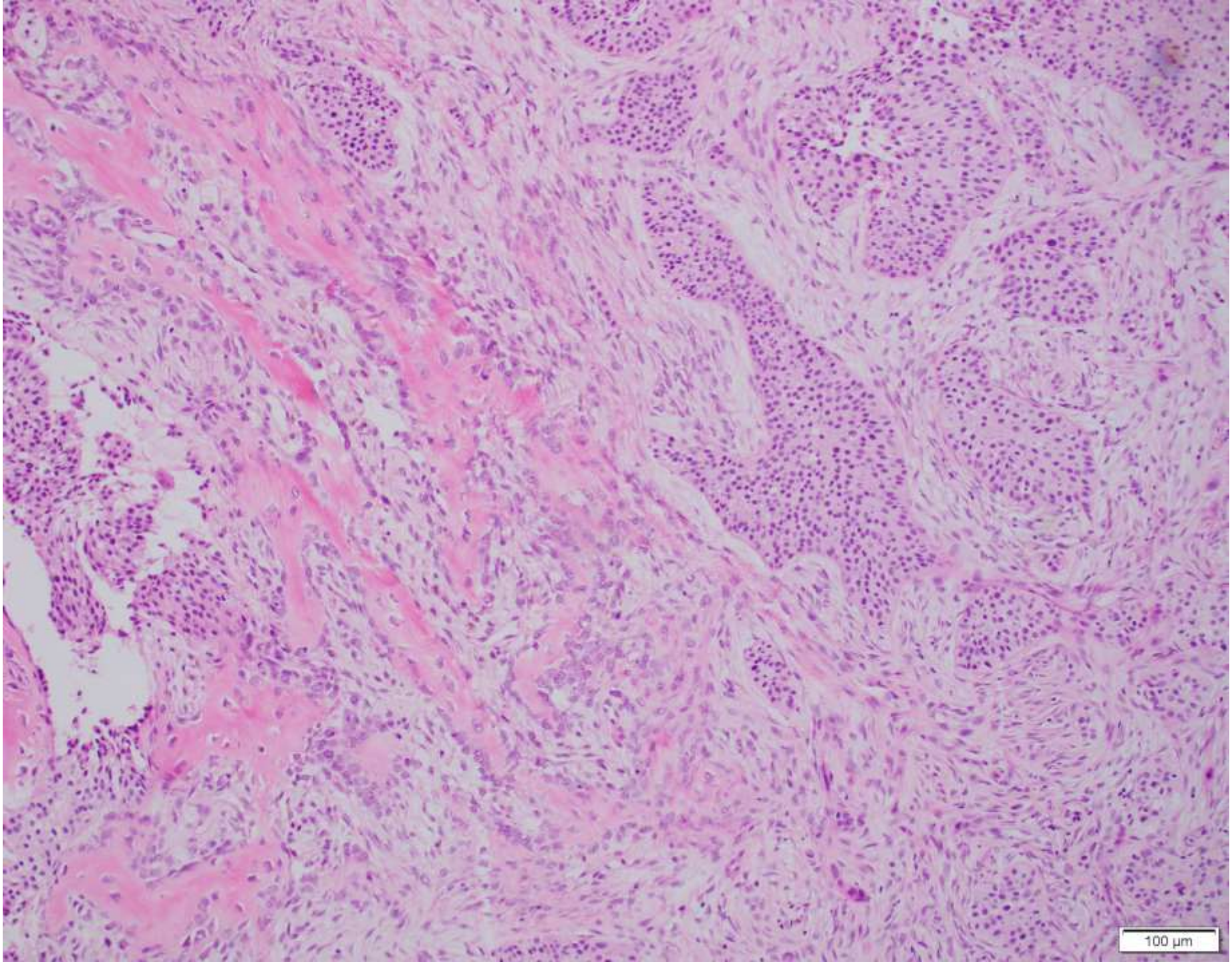
68-year-old-man complains of persistent left lateral ankle pain during his two daily hour-long walks.

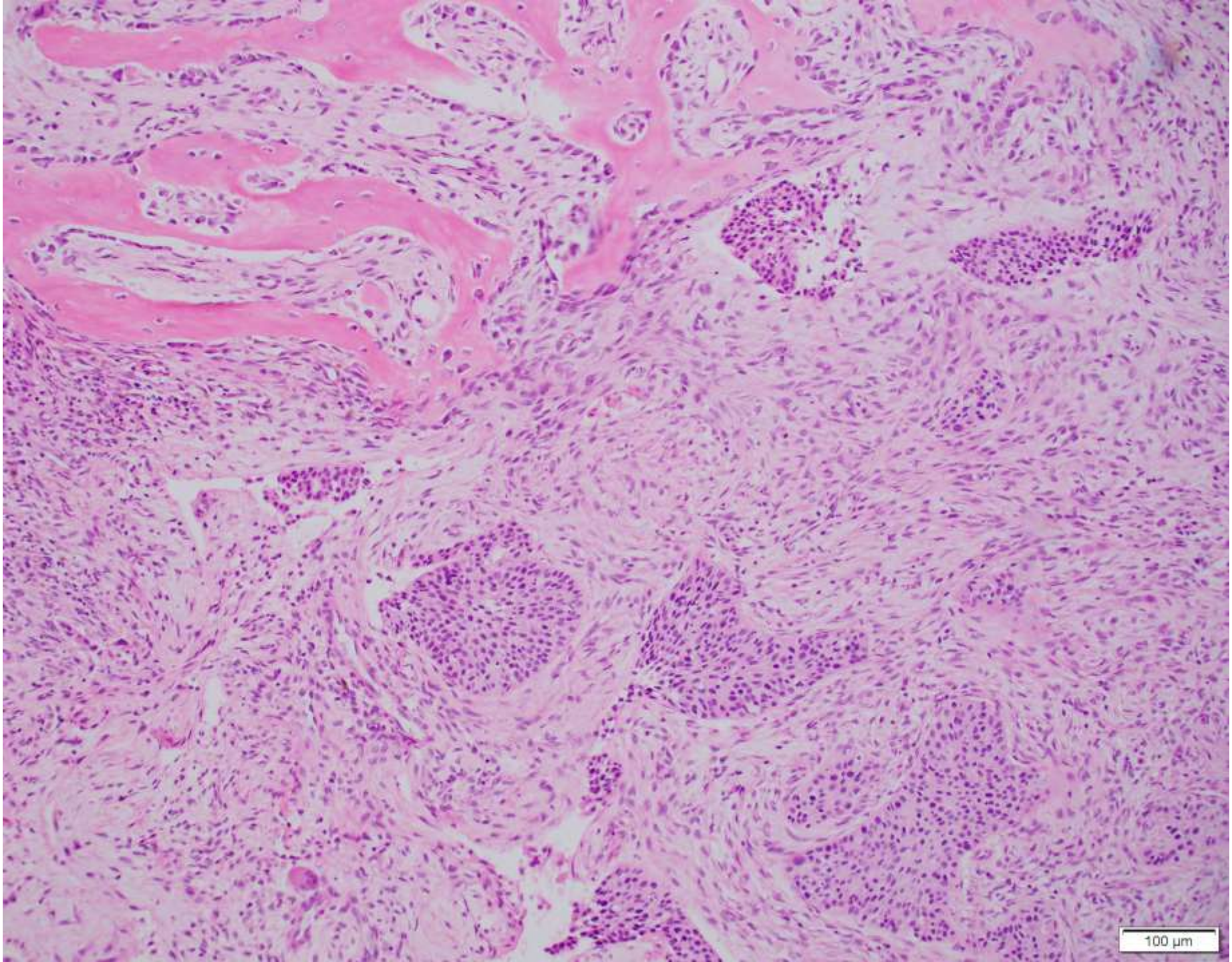
Subtle radiolucent lesion




100 µm


100 µm


100 µm

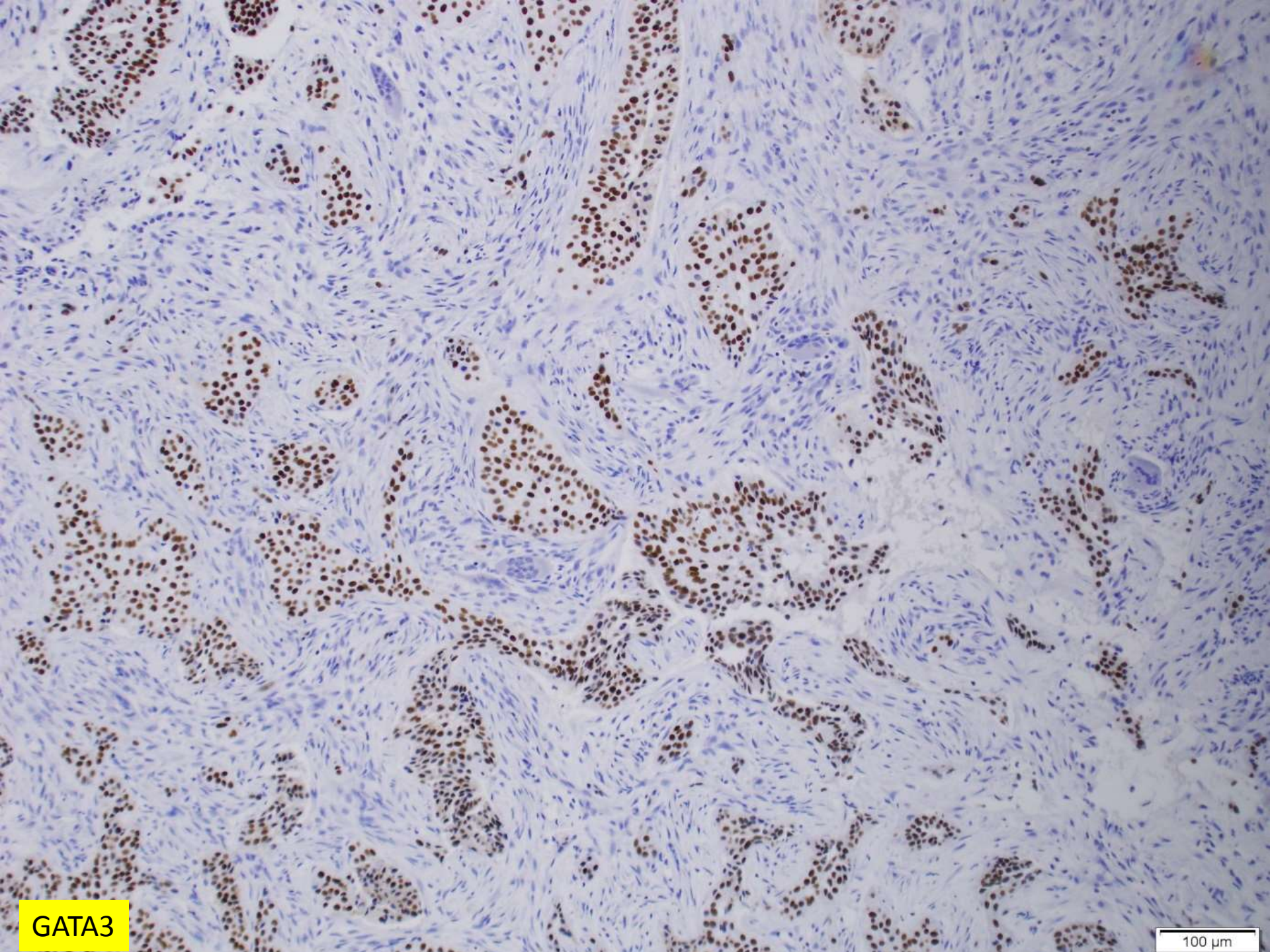

100 µm

DIAGNOSIS?

Case 6091

Sarah Cherny, MD

Kaiser - SSF


GATA3
100 µm

- Diagnosis: Metastatic Urothelial Carcinoma

- **Bone scan:** large lesion involving the right inferior pubic ramus; additional lesions in right mid femoral diaphysis, left mid tibia, left distal fibula, and left mid foot region

- **CT scan:** 4.2 x 5.8 x 6.2 cm mass arising in right renal hilum, encasing right renal artery, vein, and proximal ureter, resulting in delayed enhancement and moderate hydronephrosis, respectively. Partial encasement of the inferior vena cava, which appears patent
  - Biopsy: high grade urothelial carcinoma

Metastases involving bone

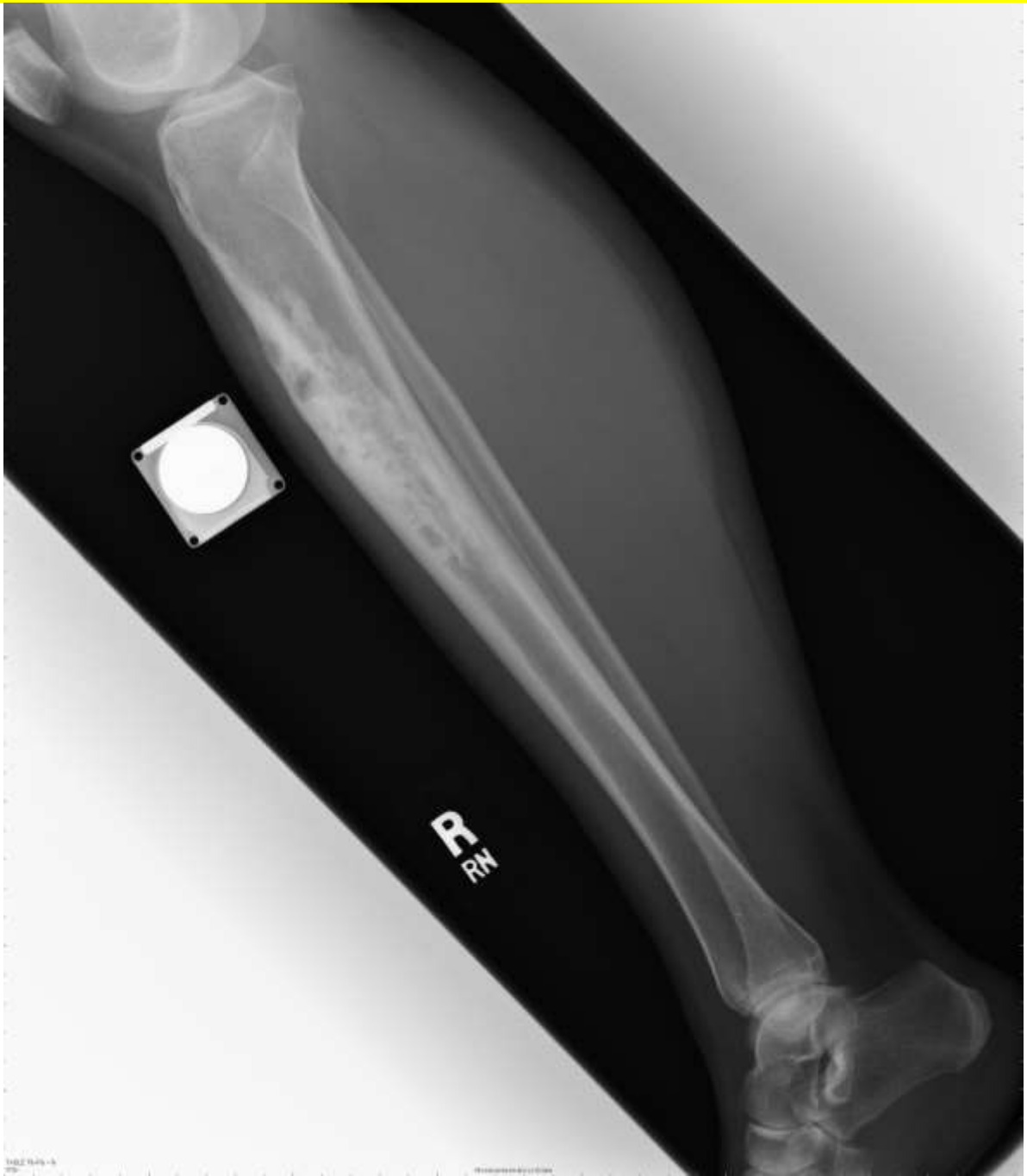
- Metastatic carcinomas are the most common malignant tumor to involve bone
  - May be lytic, blastic, or a mixed pattern
  - Adults, 40-70+ years old
  - Treatment typically palliative, poor prognosis
- Breast, lung, prostate, kidney, thyroid most common, comprising ~93% of metastases
- Most common sites: vertebra, proximal femurs, ribs, sternum, pelvis, skull, and shoulder girdle
  - Rare below the elbow or knee

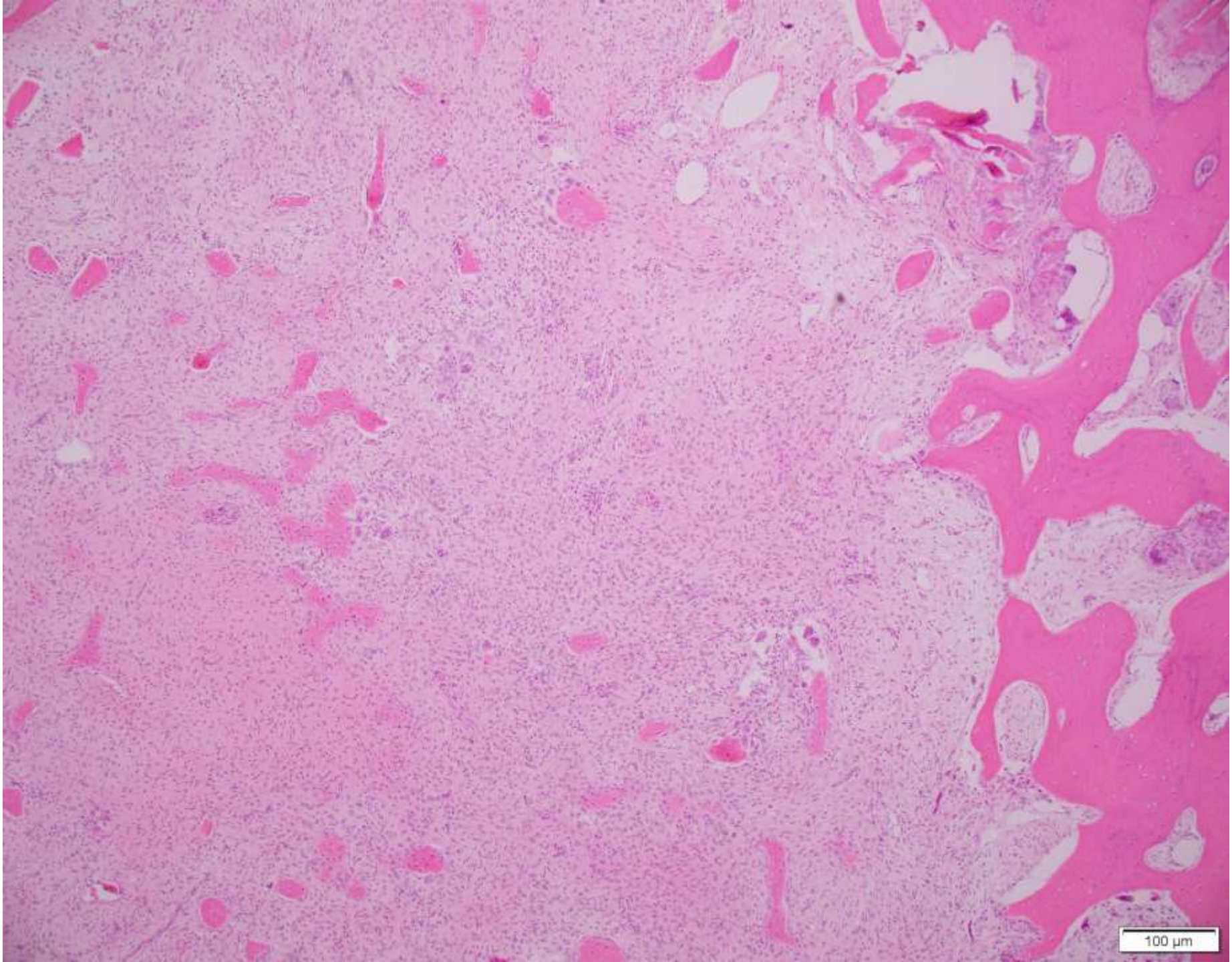
SB 6092

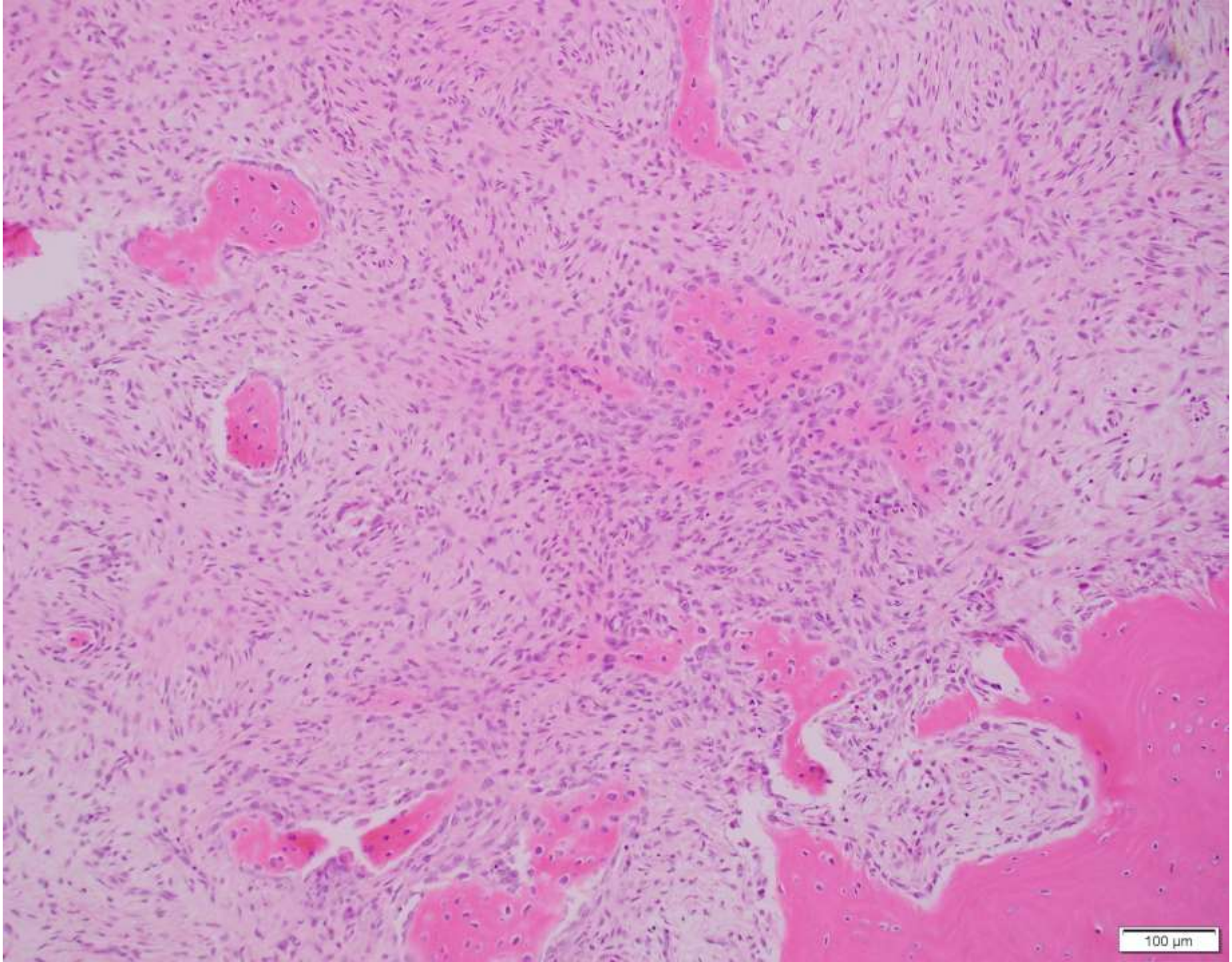
Sarah Cherny; Kaiser San Francisco

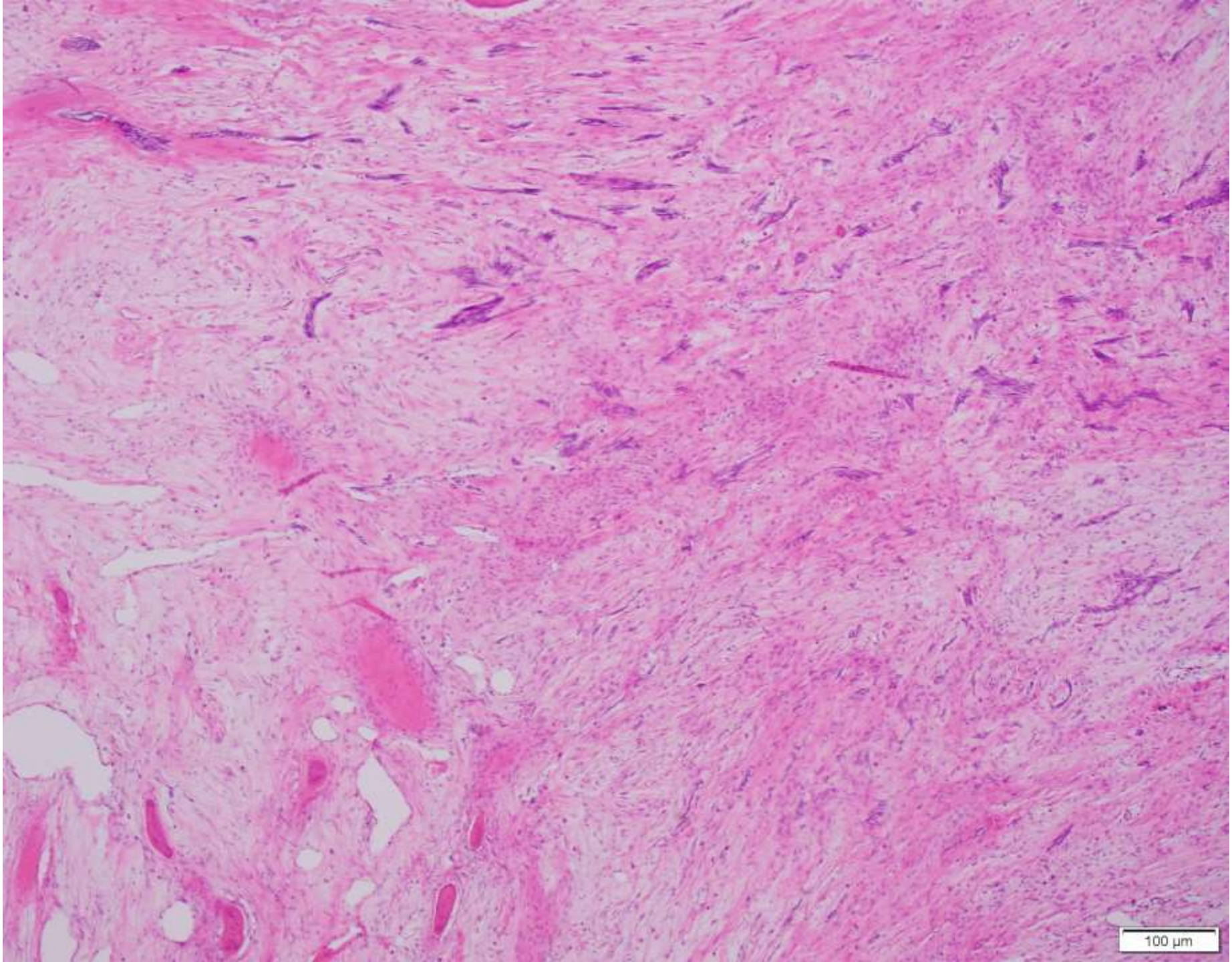
41-year-old woman with right lower leg pain; x-ray showed a mixed osteolytic and osteoblastic lesion involving the mid to proximal left tibia.

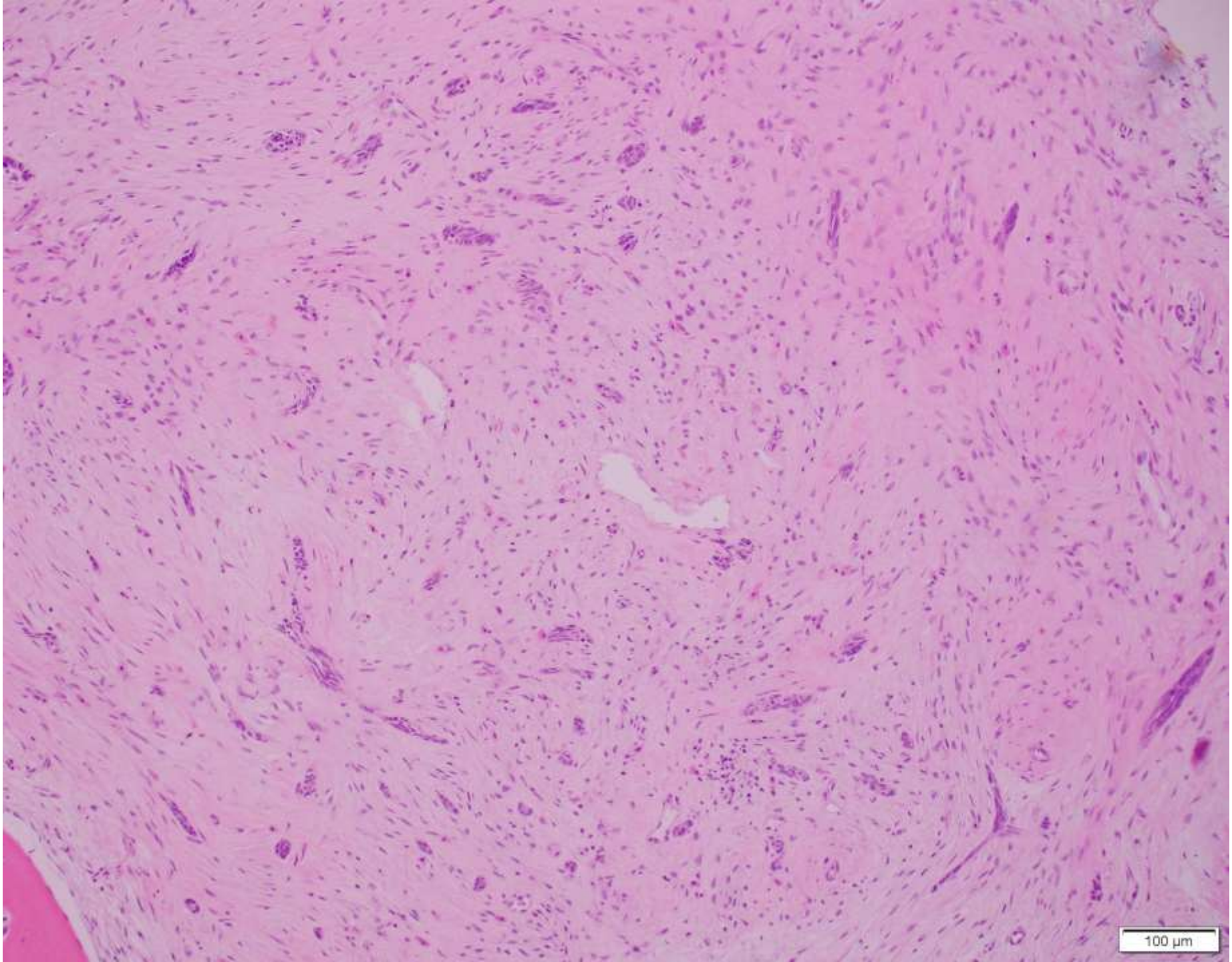
Mixed osteolytic/osteoblastic lesion

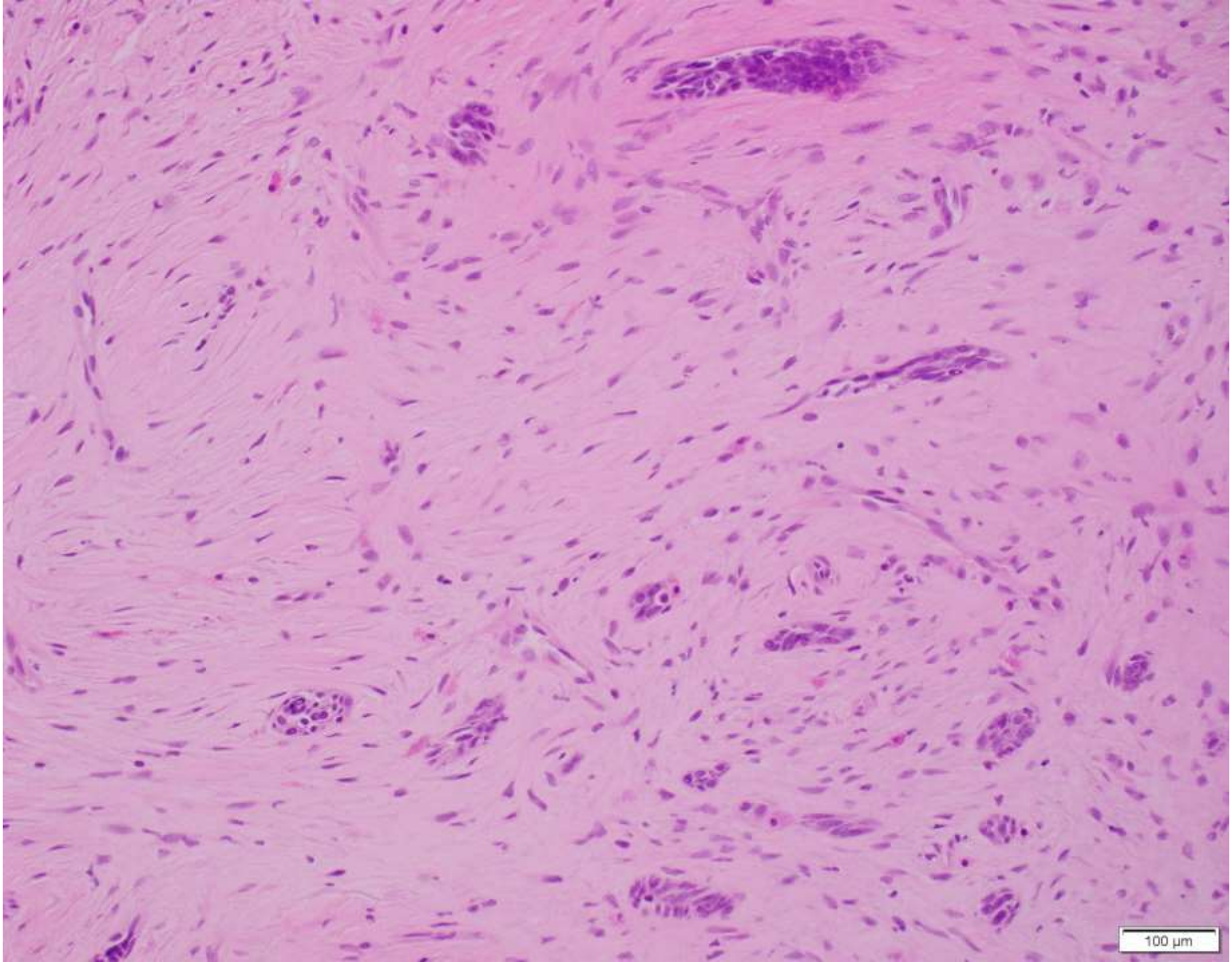



100 µm


100 µm


100 µm

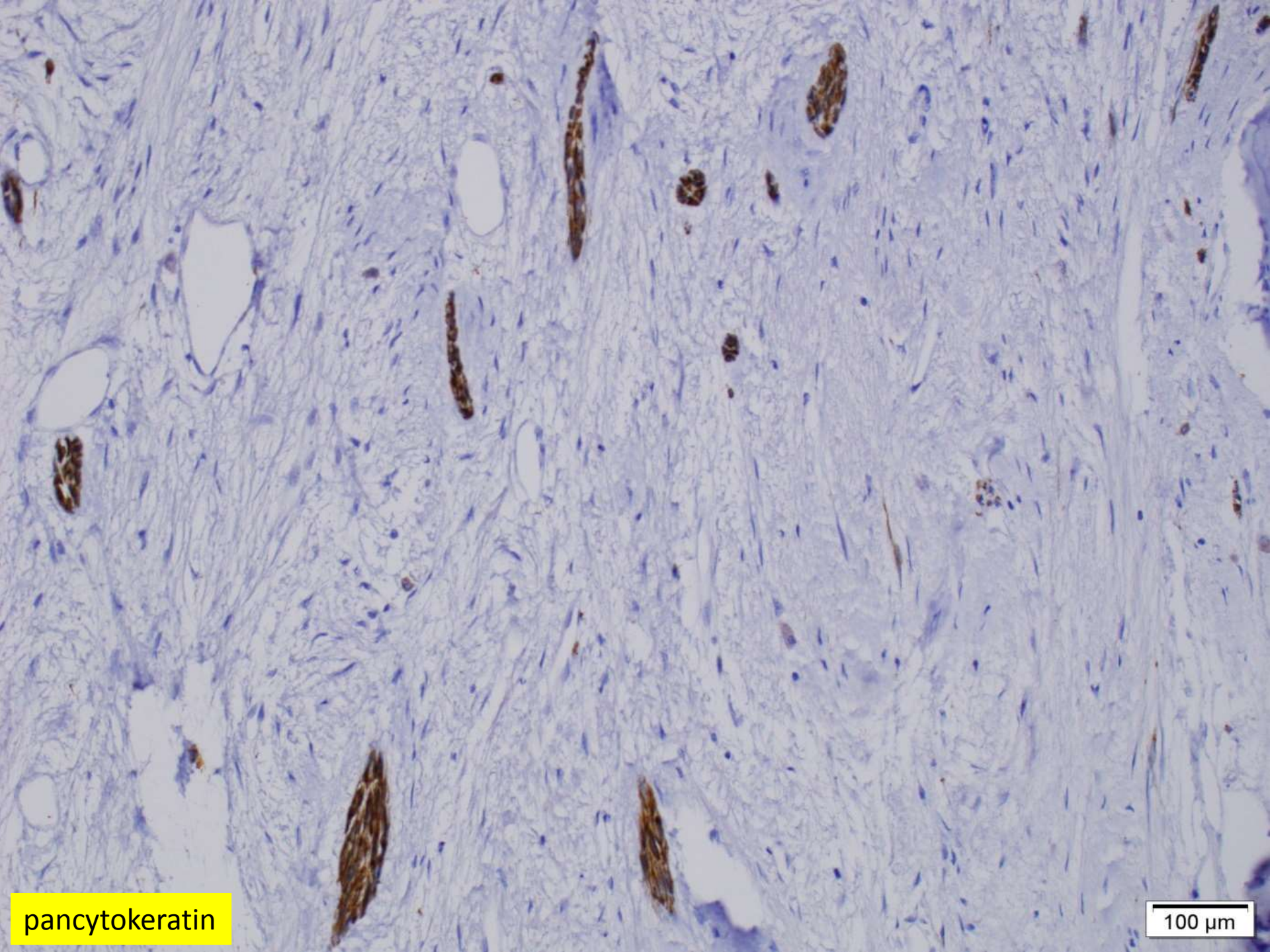

100 µm


100 µm

DIAGNOSIS?

Case 6092

Sarah Cherny, MD
Kaiser SSF


pancytokeratin
100 µm

Diagnosis

- Osteofibrous dysplasia-like adamantinoma
  - aka “Differentiated adamantinoma”

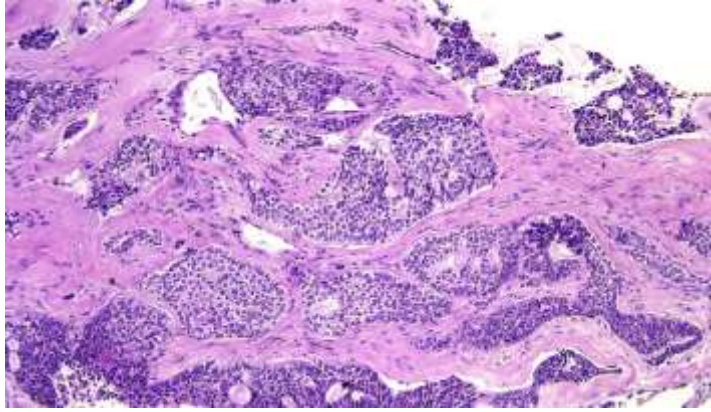
Clinical features & presentation

- 0.4% of all primary bone tumors
- Median age of 25-35 years
  - Wide age range: 3-86 years old
- Sites: Tibial diaphysis involved in 85-90% of cases
  - Ipsilateral fibula involved in up to 10% of cases
  - Other sites rarely involved (e.g., ulna)
- Swelling > pain; often protracted clinical behavior
  - Symptoms x years before diagnosis
  - Local recurrence or metastases may develop years after primary

Imaging

- X-ray: well circumscribed, cortical, lobulated osteolytic lesion with intralesional opacities, septation and peripheral sclerosis
- Often remains intracortical and extend longitudinally
  - Can destroy cortex and invade medullary cavity or surrounding periosteum and soft tissue
- May be multicentric

Histology



- Adamantinomas characterized by an epithelial and an osteofibrous component
  - Classic type: more abundant epithelial component than osteofibrous dysplasia-like variant
  - Woven bone trabeculae show osteoblastic rimming
- “Zonal architecture”
  - Epithelial component present centrally, with osteofibrous component at periphery
- Epithelial component positive for keratin, EMA, vimentin

Osteofibrous dysplasia-like adamantinoma

- Predominance of osteofibrous tissue, with only small groups of epithelial cells found by careful search and/or immunohistochemistry

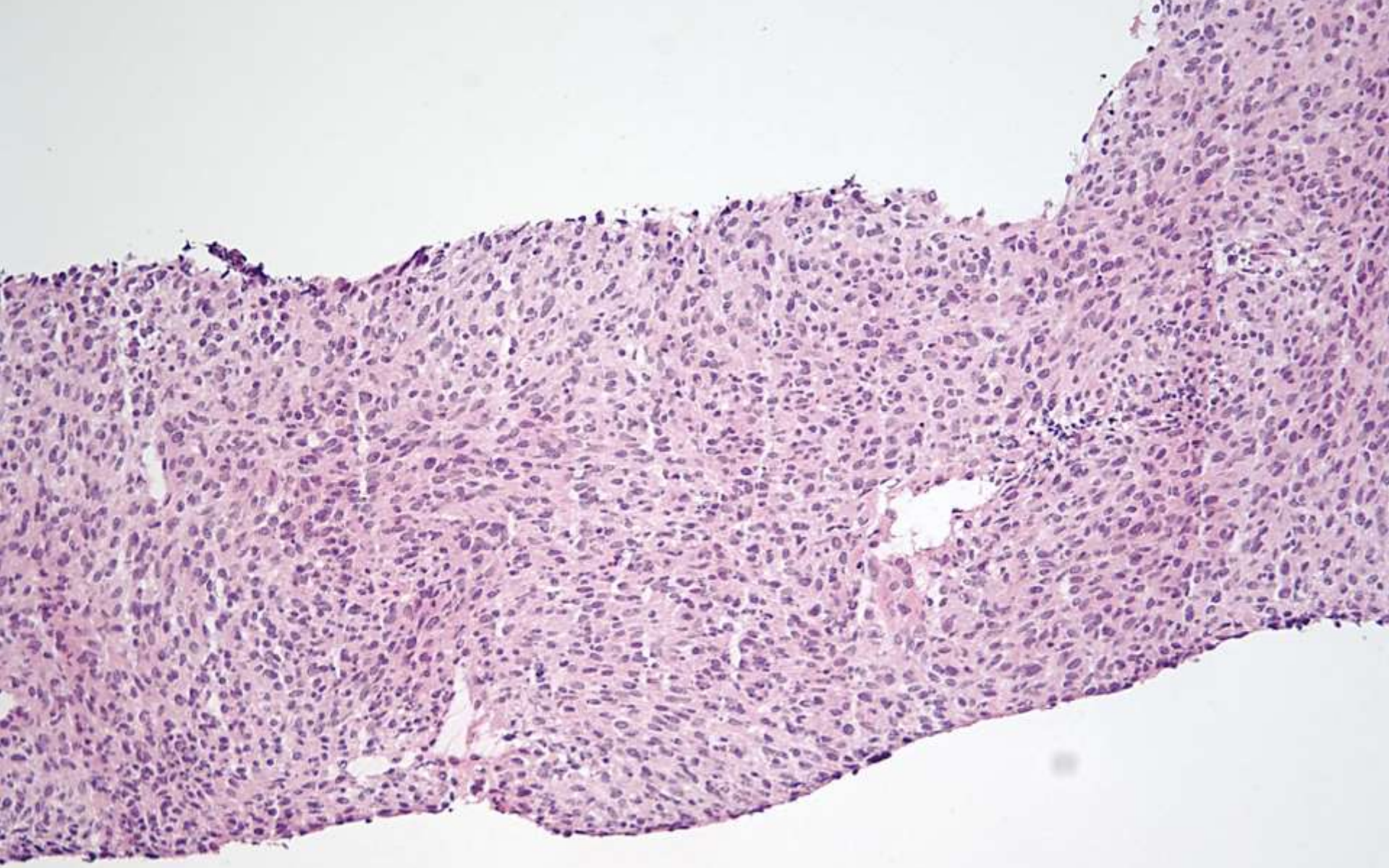
Prognosis

- Risk factors for recurrence
  - Incomplete resection / non-radical surgery
  - Increase in epithelium-to-stroma ratio
  - Short duration of symptoms, male sex, age <20
- Up to ~25% metastasize
  - Regional lymph nodes and lungs
  - Classic adamantinomas>>>OD-like adamantinoma

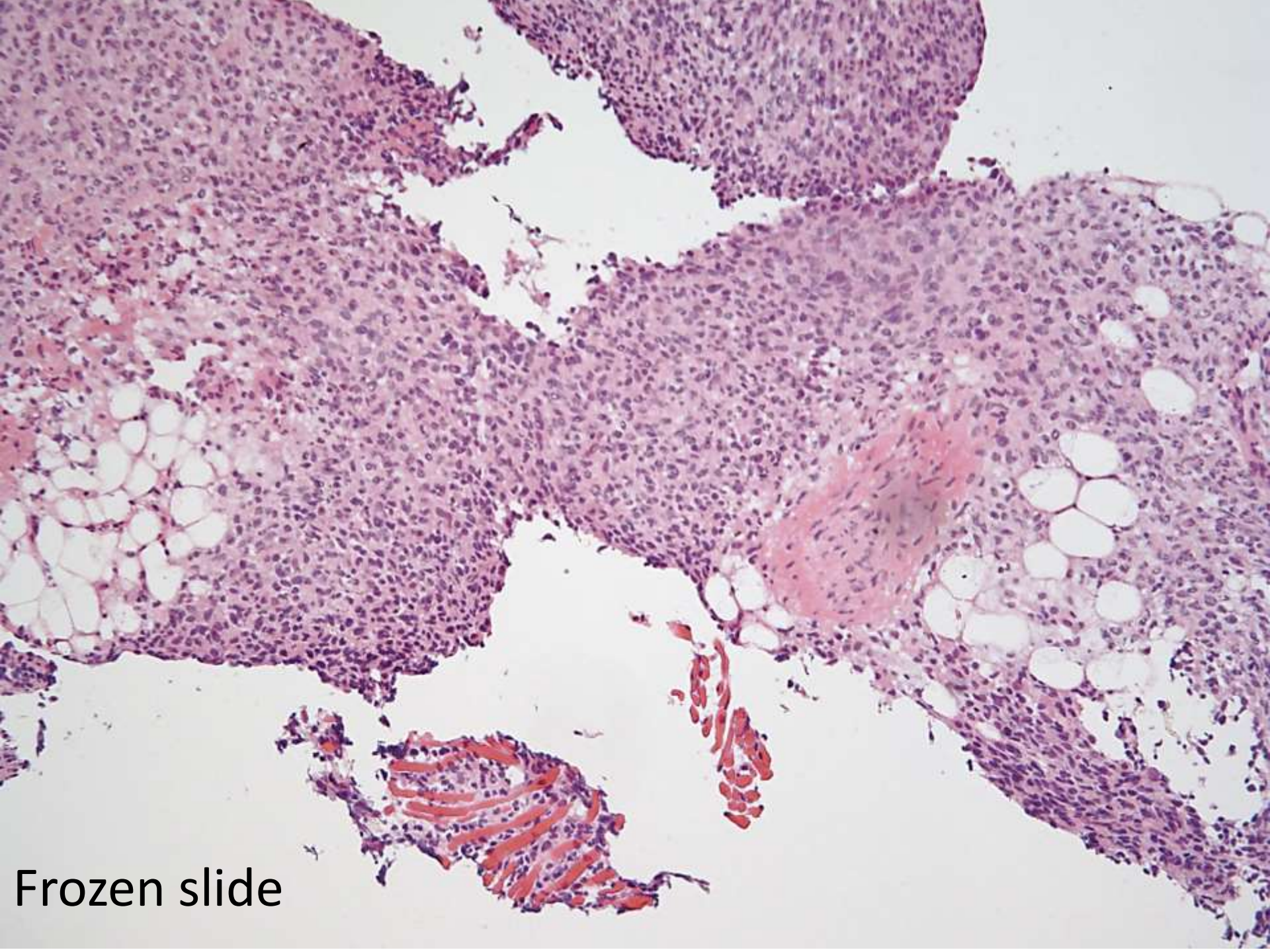
SB 6093

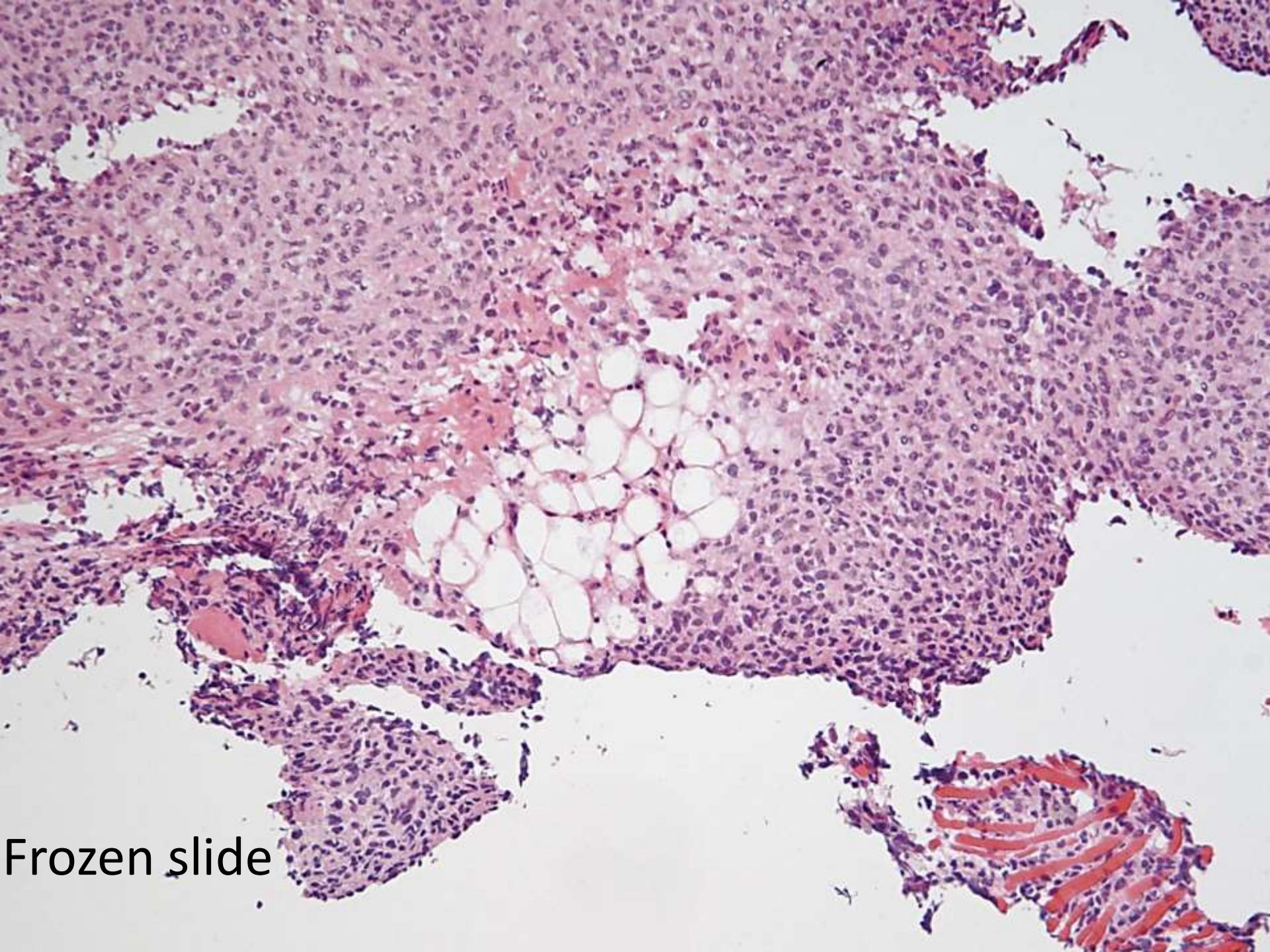
Allison Zemek/John Higgins; Stanford

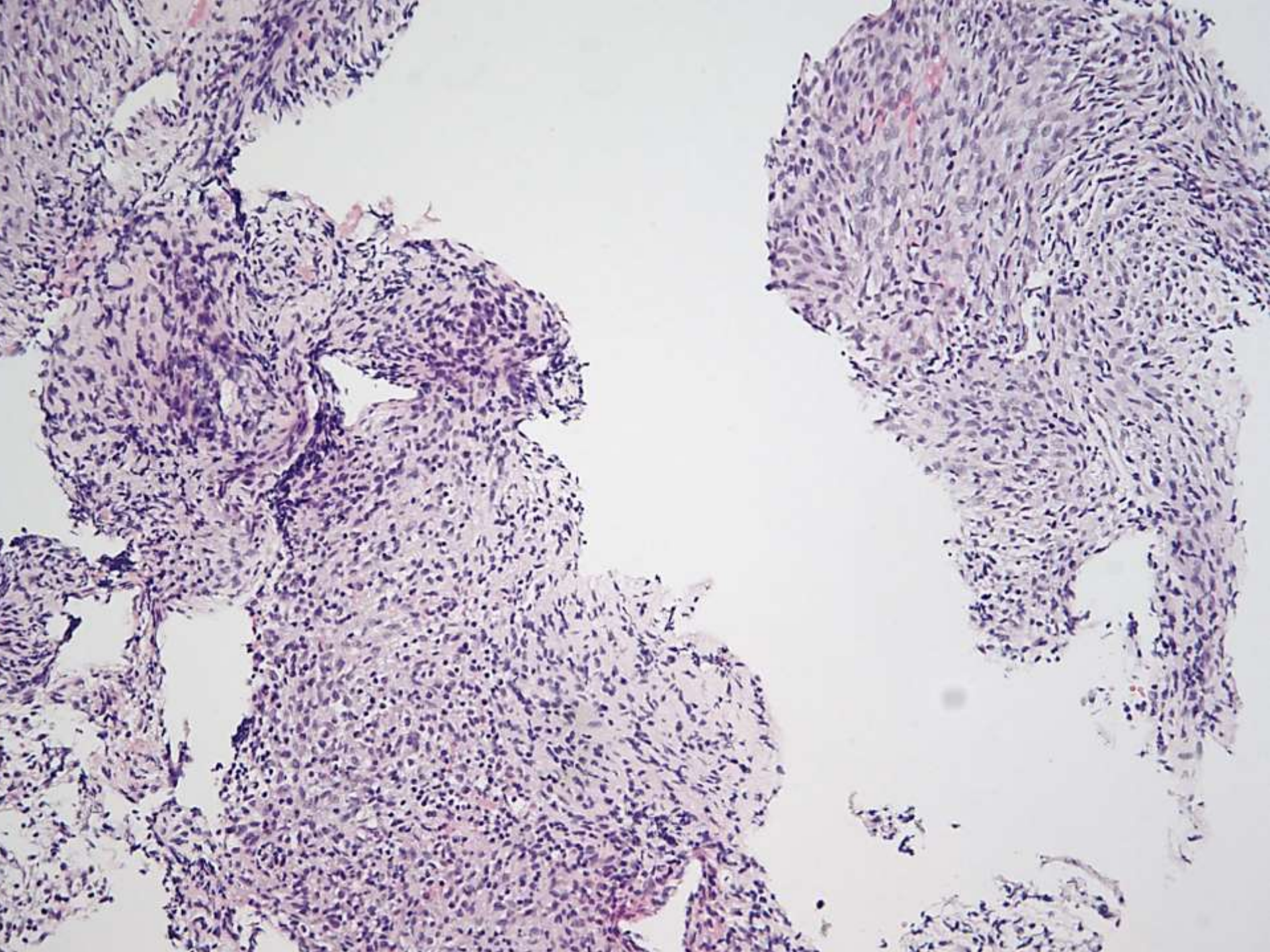
2-week-old male with rapidly growing mass of right plantar foot since birth.

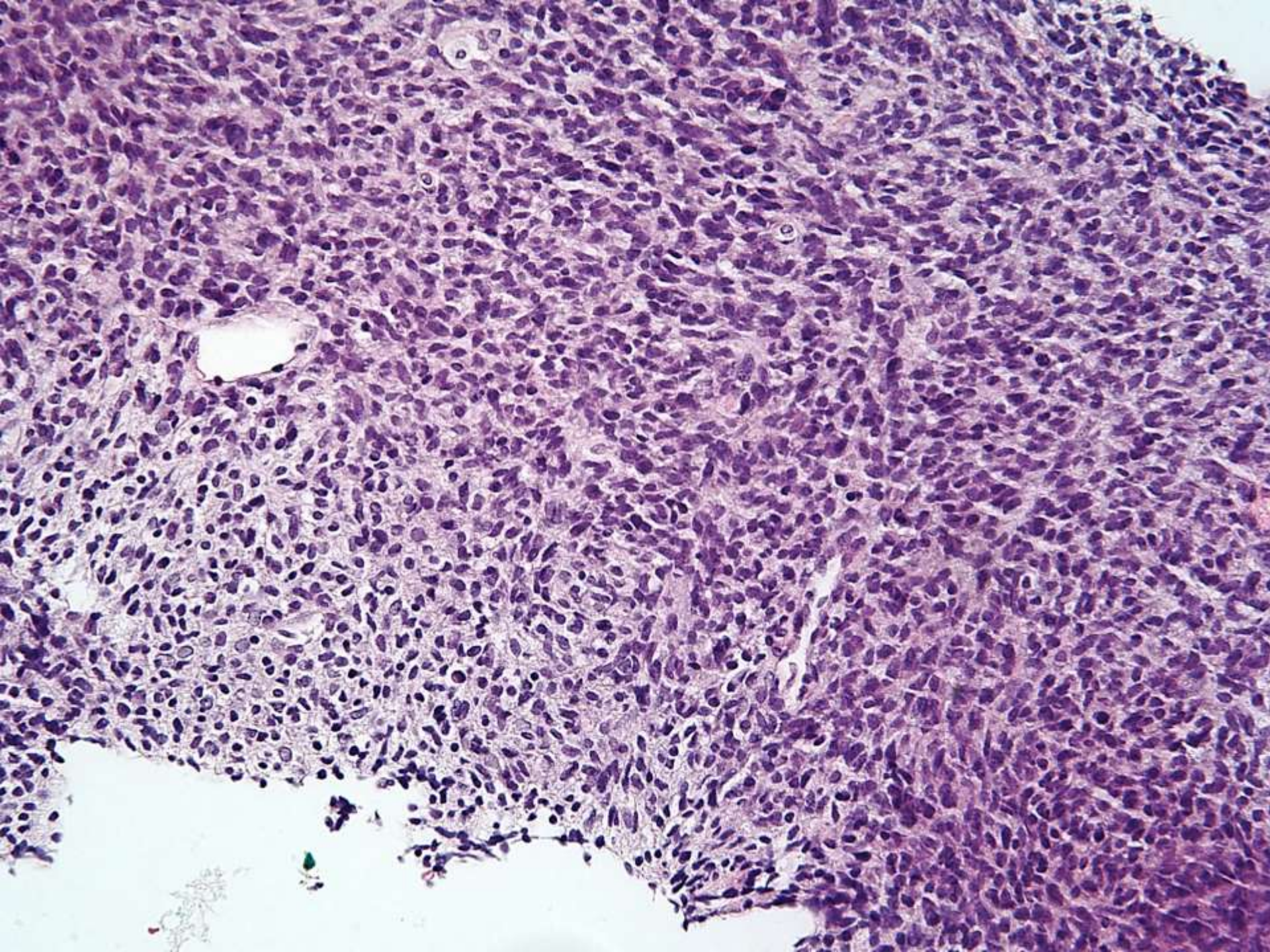


Frozen slide

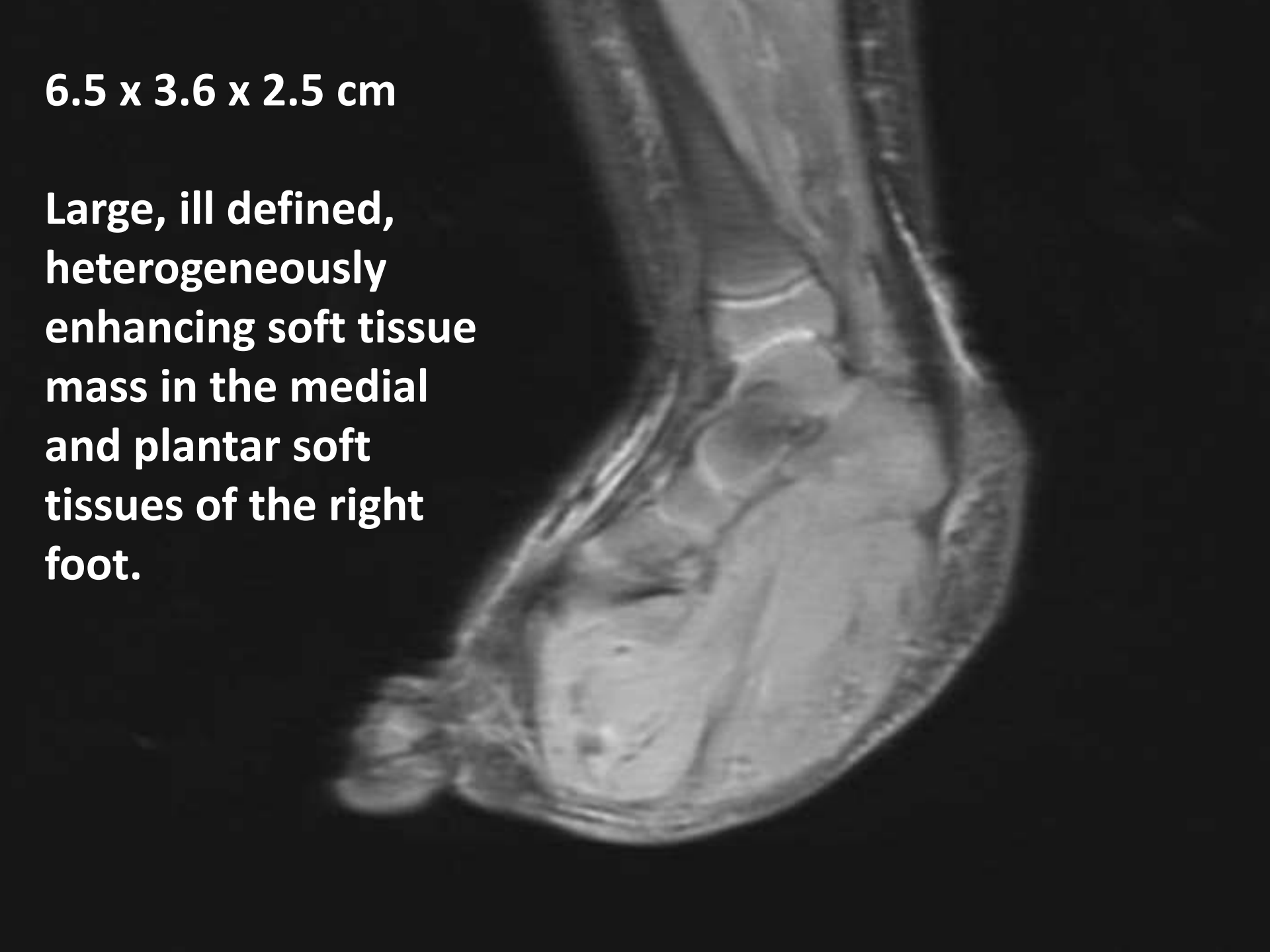

Frozen slide

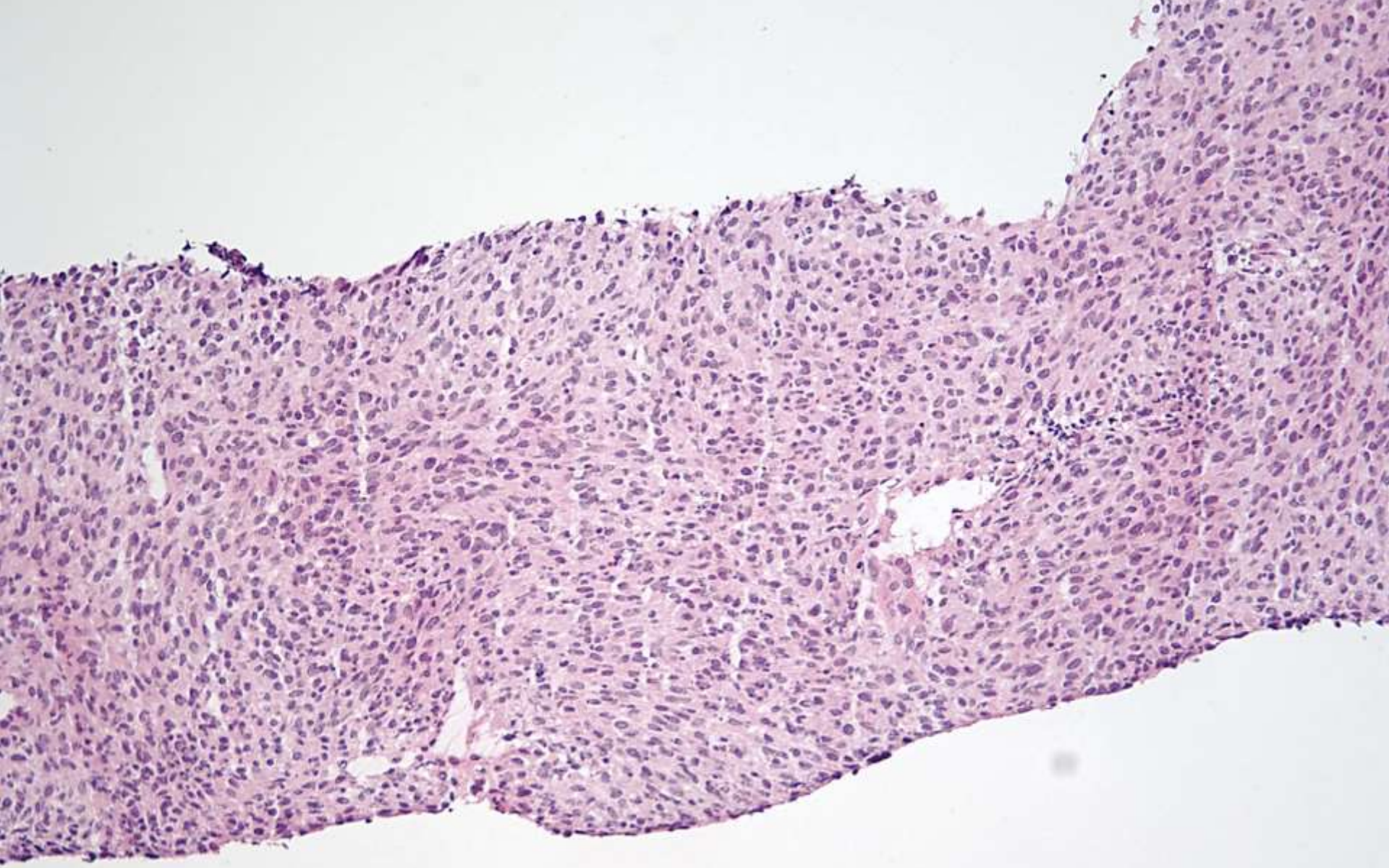

Frozen slide



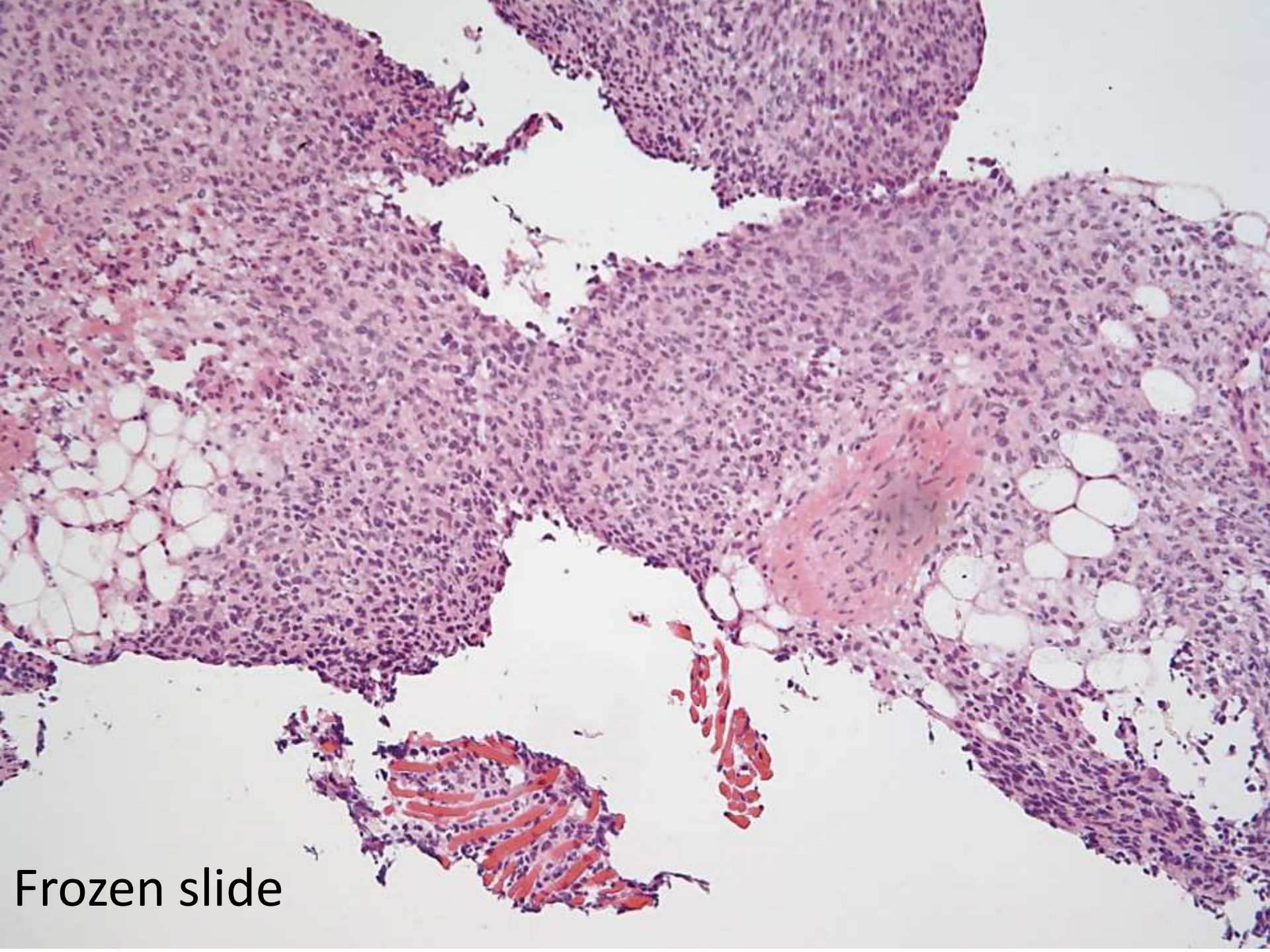


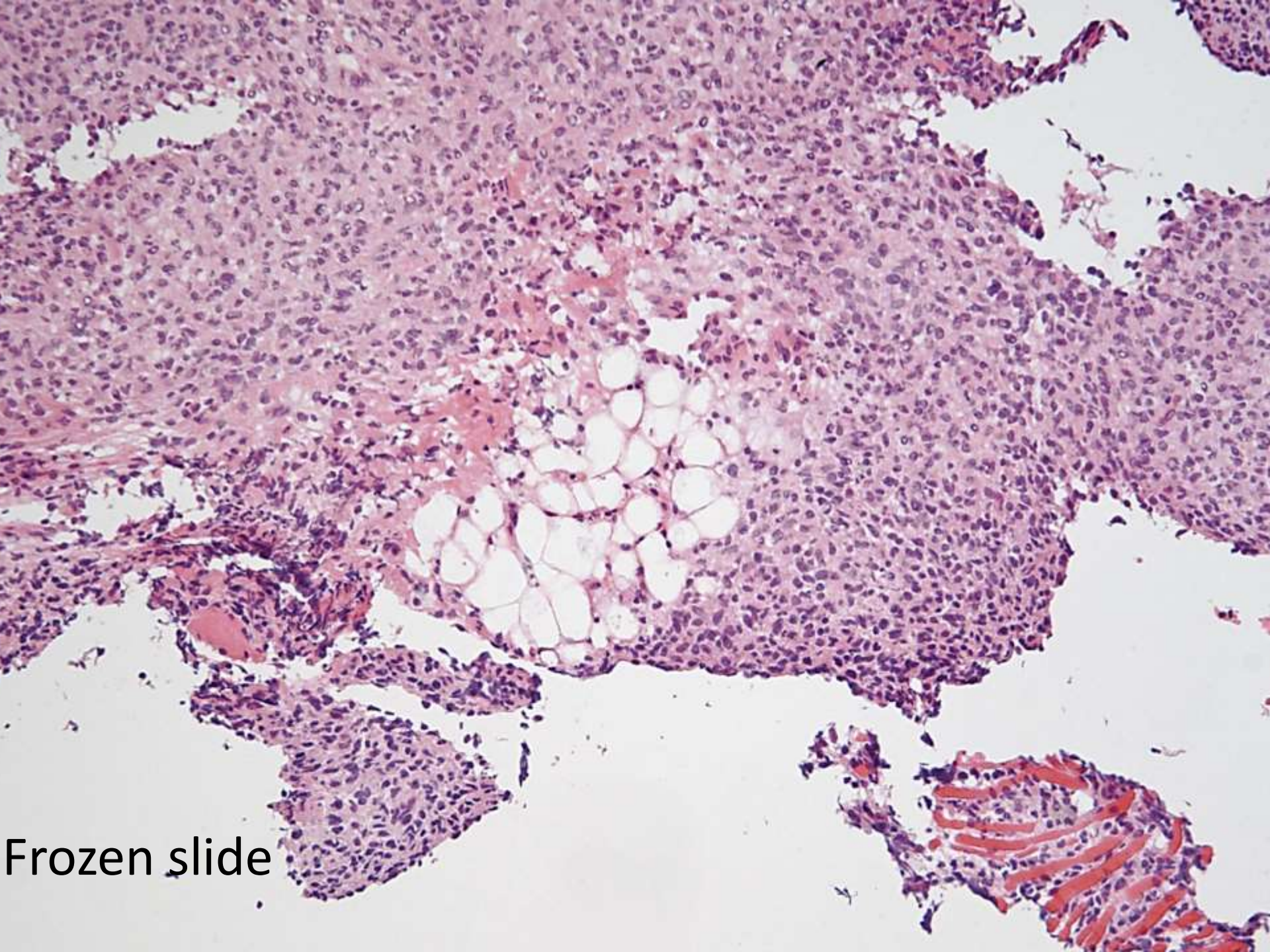
DIAGNOSIS?

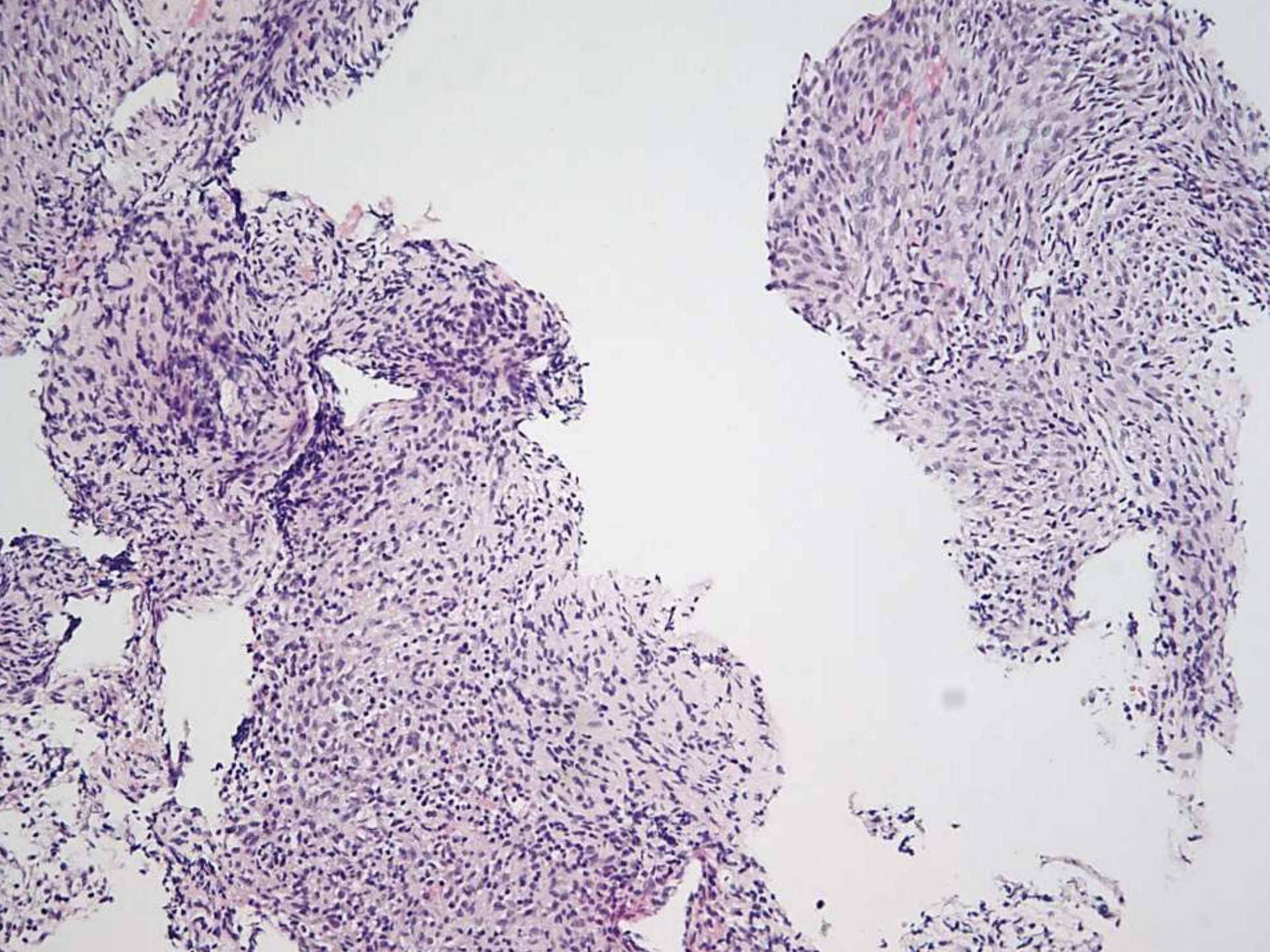

6.5 x 3.6 x 2.5 cm
Large, ill defined, heterogeneously enhancing soft tissue mass in the medial and plantar soft tissues of the right foot.

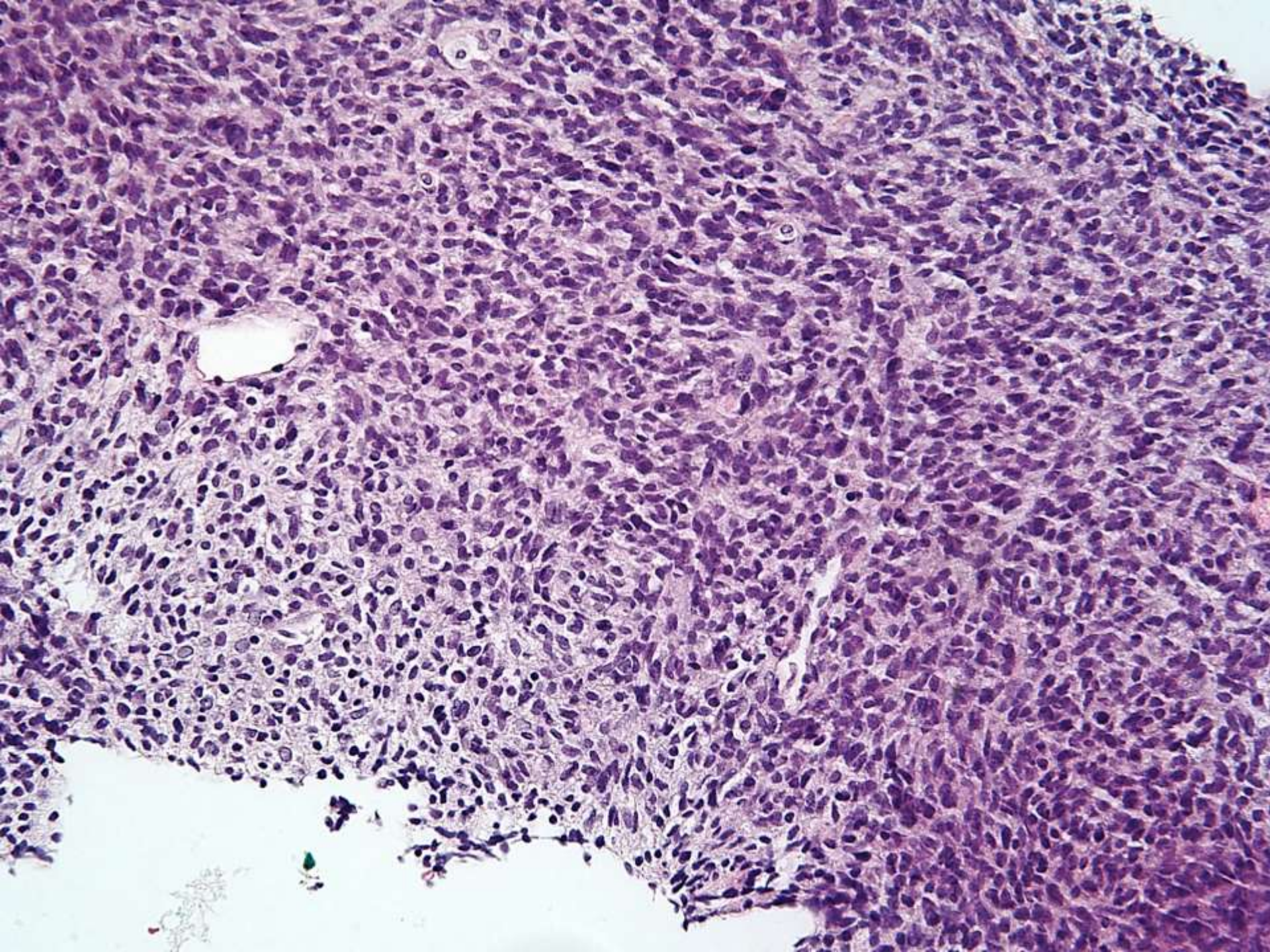


Frozen slide


Frozen slide


Frozen slide





Congenital Fibrosarcoma

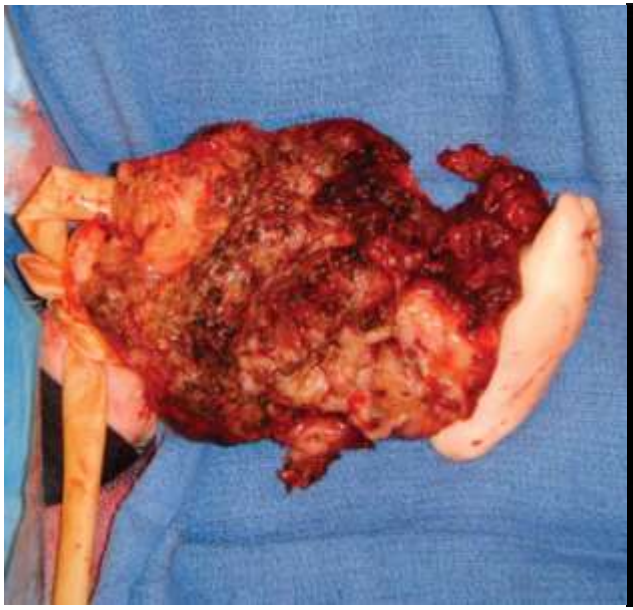
Synonyms

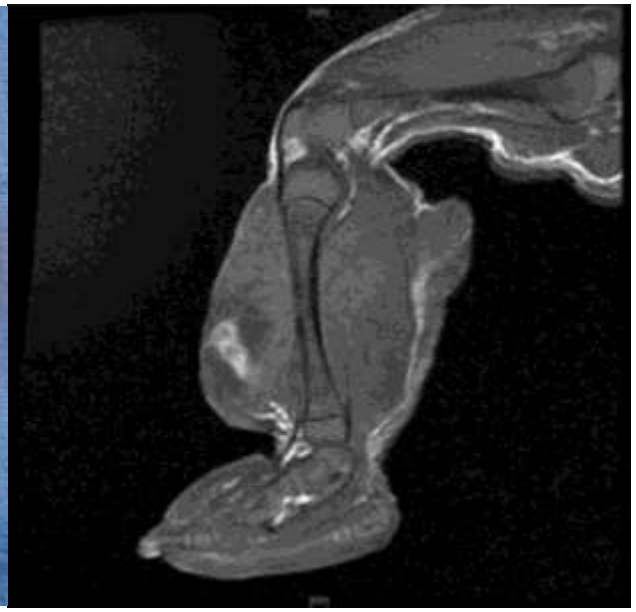
- Infantile/Juvenile fibrosarcoma
- Aggressive infantile fibromatosis

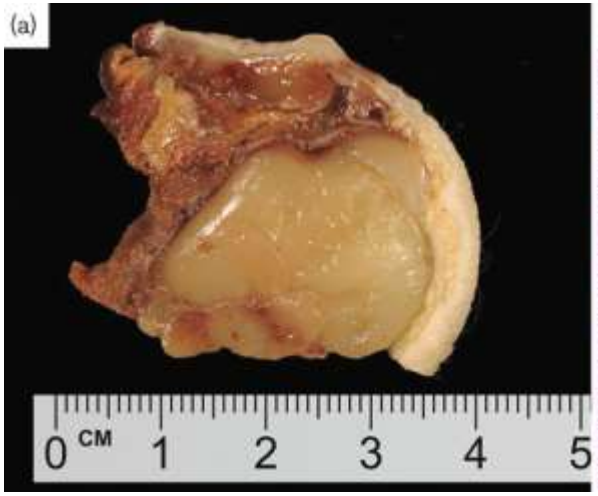
Clinical features

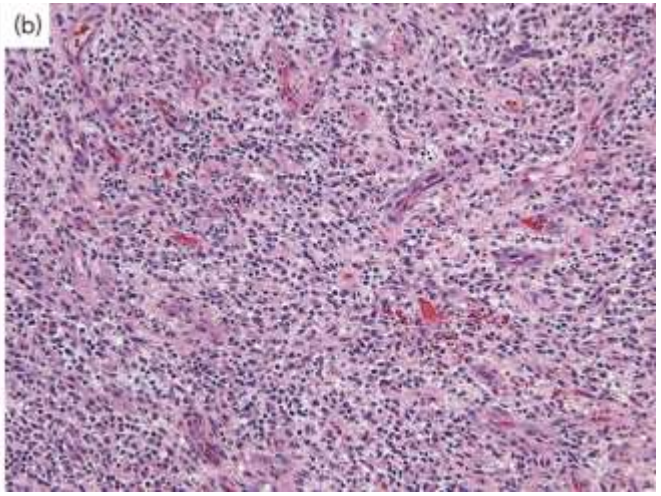
- Neonates and young children (1-2 years)
- 5-10% of all sarcomas <1 yr
- Superficial/deep soft tissues of extremities
- Solitary, large, rapidly growing, **surface ulceration***

Emergency surgical treatment… Kraneburg et al. 2013









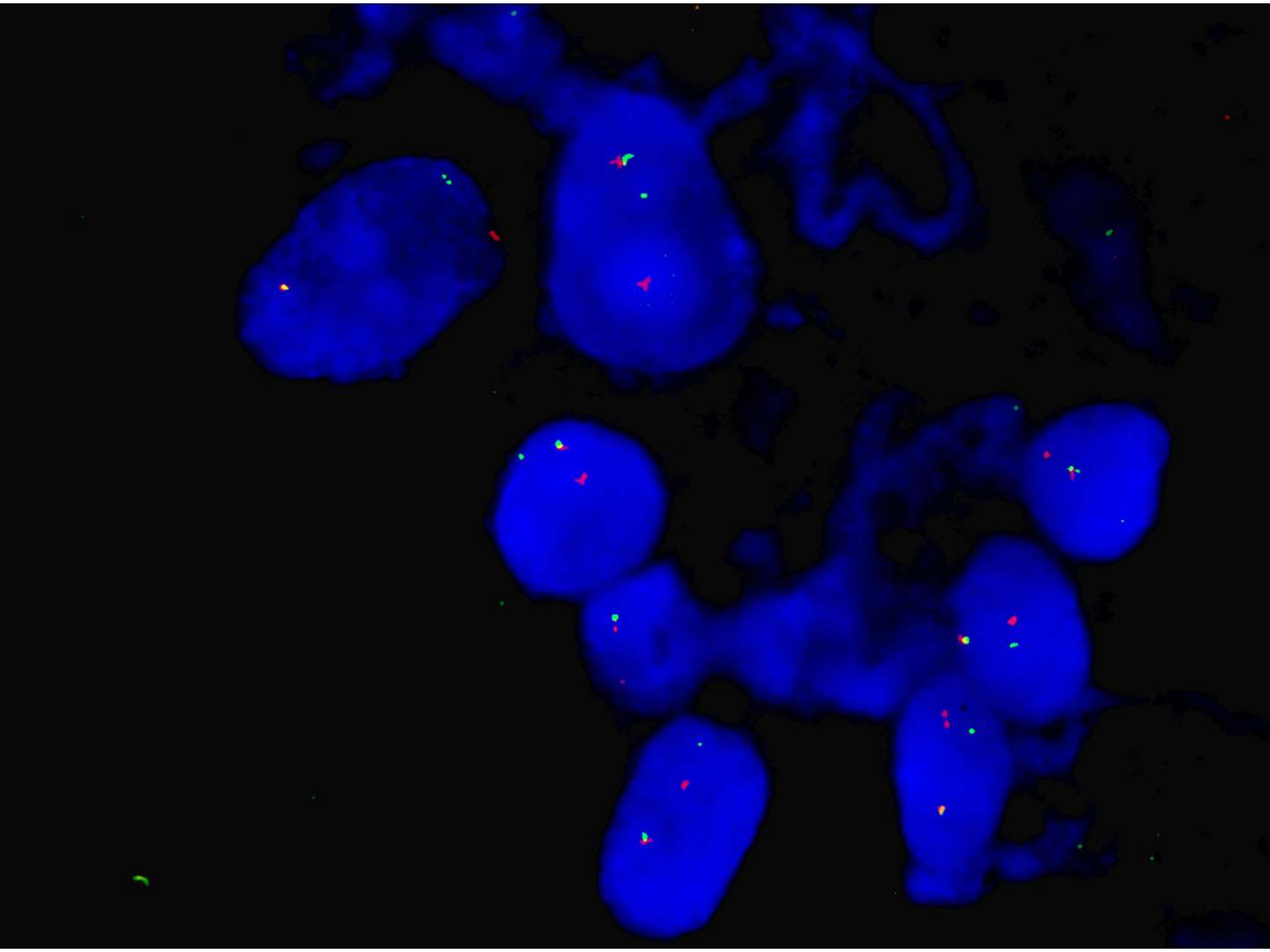
Congenital Fibrosarcoma

Histopathologic features

- Poorly circumscribed, lobulated
- Cellular intersecting fascicles of immature cells
- Usually little cellular pleomorphism
- Numerous mitoses
- Focal hemangiopericytoma-like vessels

Pathogenesis

- t(12;15)(p13;q25) NTRK3-ETV6 fusion
- Activation of NTRK3 receptor tyrosine kinase
- Others: Mesoblastic nephroma, secretory carcinoma of breast, MASC of salivary gland



Differential diagnosis

Differential Dx	Cellular features	Immuno	ETV6
Congenital fibrosarcoma	Immature spindled cells	Desmin negative cytokeratin negative S100 negative	**Positive**
Desmoid fibromatosis	More mature, bland spindled cells, perivascular edema	**+ nuclear B-catenin**	Neg
Infantile myofibroma/ myofibromatosis	Biphasic growth: mature myogenic cells + immature ovoid cells	**+ actins**	Neg
Spindle cell rhabdomyosarcoma	Scattered rhabdomyoblasts, usually paratesticular	**+ desmin** **+ myogenin**	Neg
Infantile Rhabdomyofibrosarcoma	Fibrosarcomatous areas and scattered rhabdomyoblasts	**+ desmin** **+ myogenin**	Neg
Leiomyosarcoma	Rare in children, smooth muscle morphology	**+ caldesmon**	Neg

Congenital Fibrosarcoma

Treatment

- Adjuvant chemotherapy (vincristine, adriamycin, cyclophosphamide)
- Complete resection (limb sparing resection with reconstructive muscle graft)

Prognosis

- Recurrence (5-50%)
- Mortality (5-25%) but generally favorable

Follow up

- 8 months post op, doing well, walking and running
- MRI and physical exam twice annually

Congenital (infantile) Fibrosarcoma

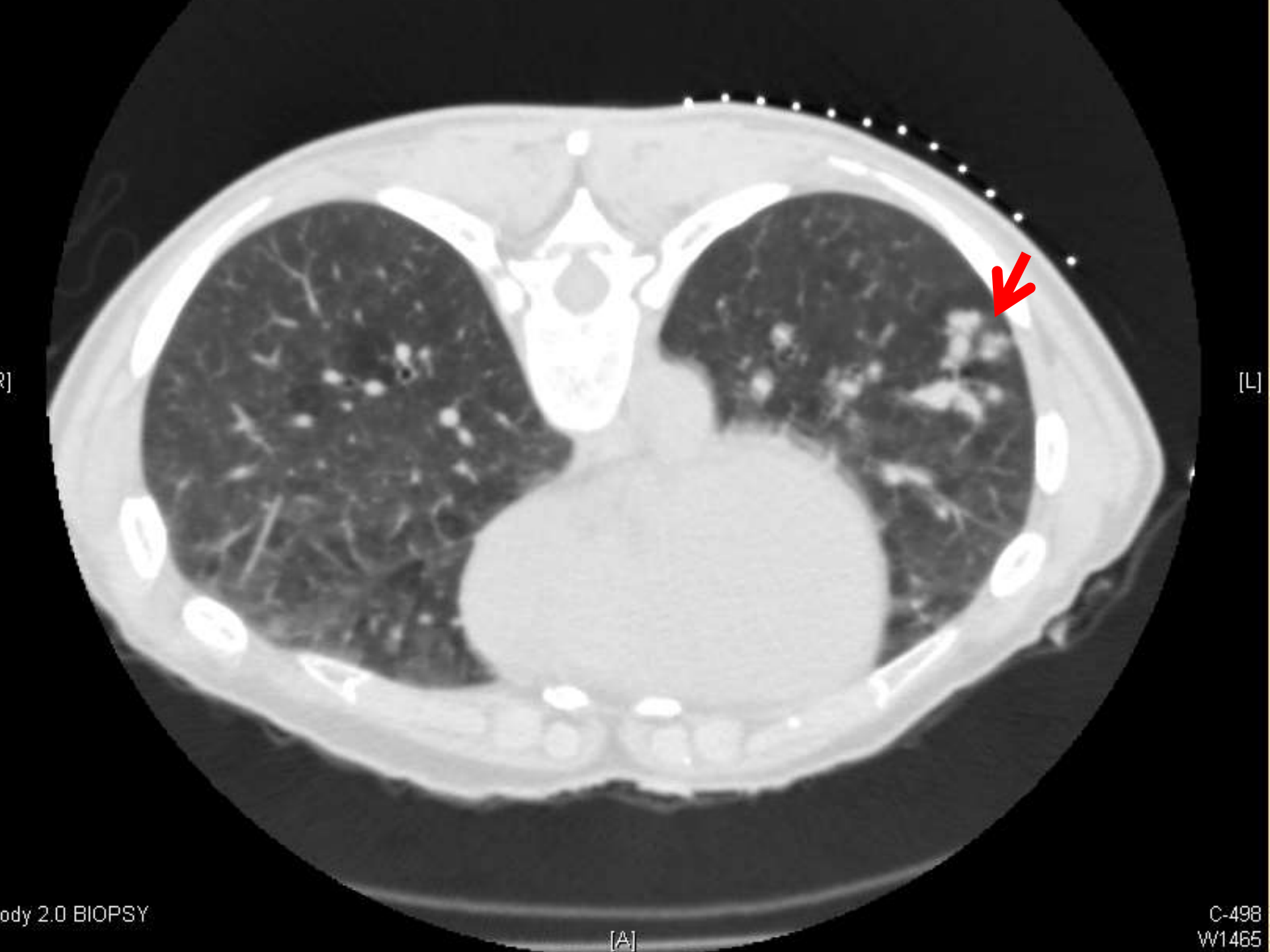
References:

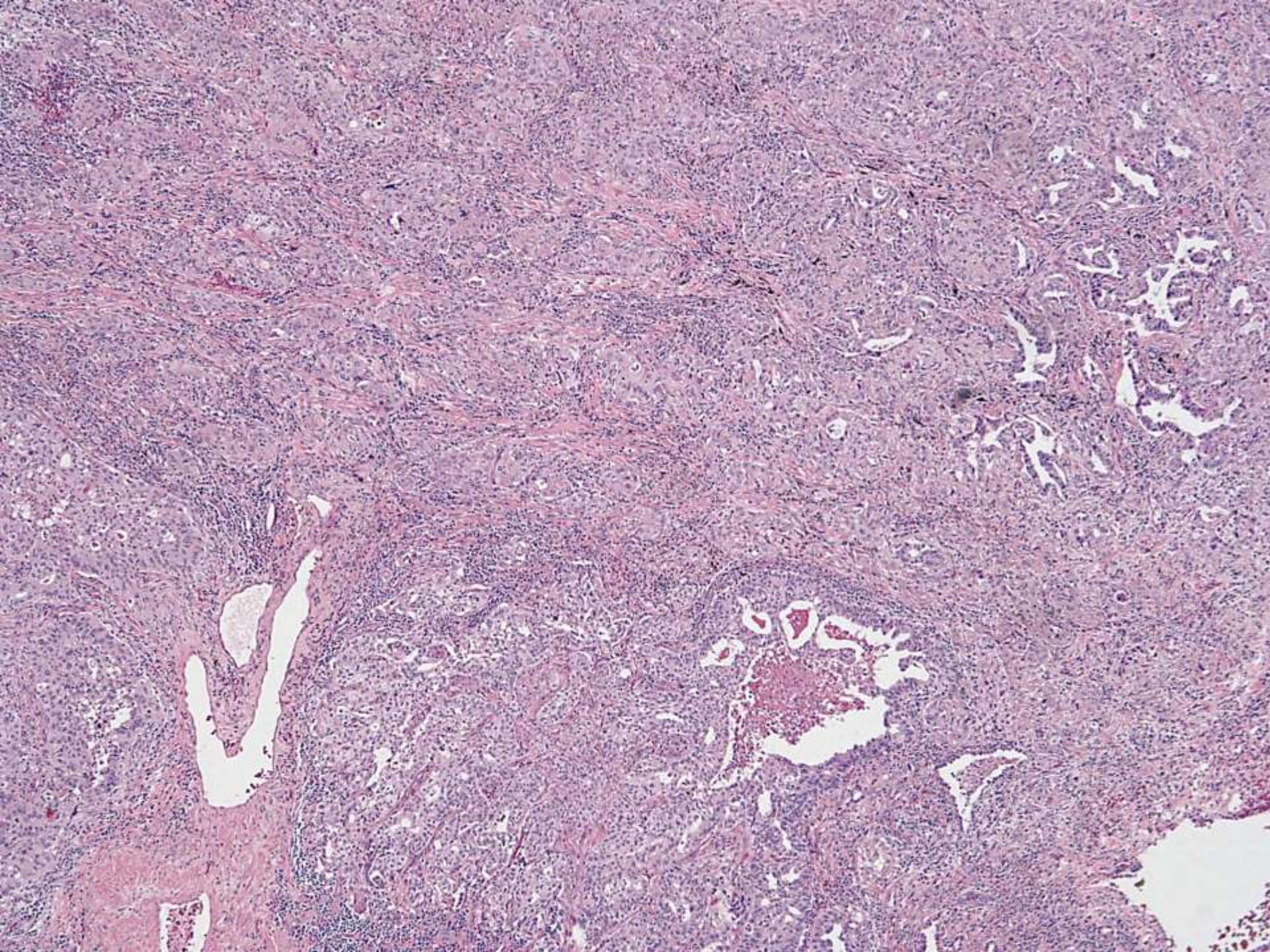
1. Diagnostic Pathology: Soft Tissue Tumors. First edition. Fisher. Lippincott Williams & Wilkins, 2010.
2. Emergency surgical treatment of an ulcerative and hemorrhagic congenital/infantile fibrosarcoma of the lower leg: case report and literature review. U Kraneburg et al. Journal of Pediatric Orthopedics, 2013, 22(3):228-232
3. Molecular detection of the ETV6-NTRK3 gene fusion differentiates congenital fibrosarcoma from other childhood spindle cell tumors. Bourgeois et al. American Journal of Surgical Pathology. 2000, 24(7):937-946

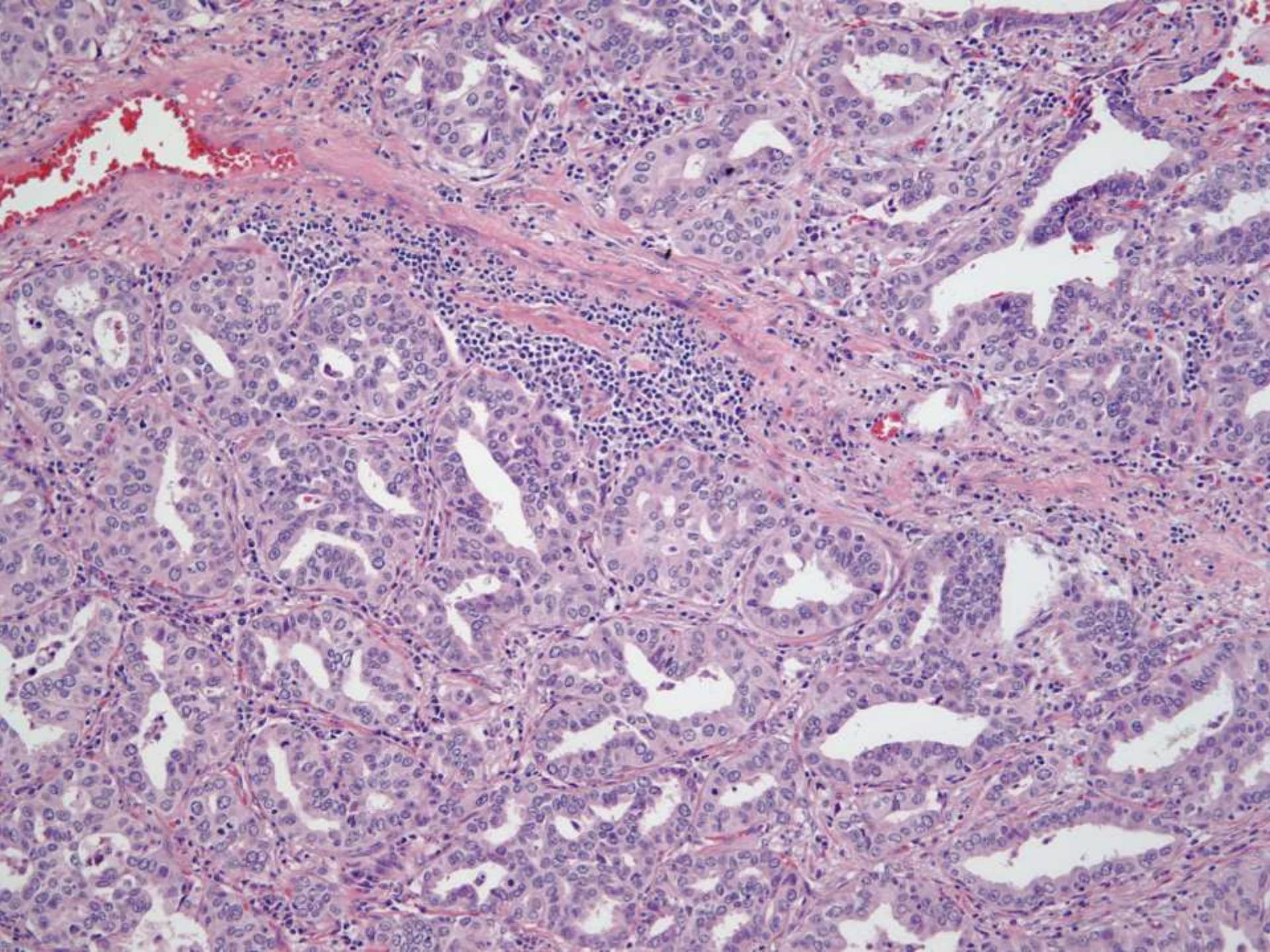
SB 6094

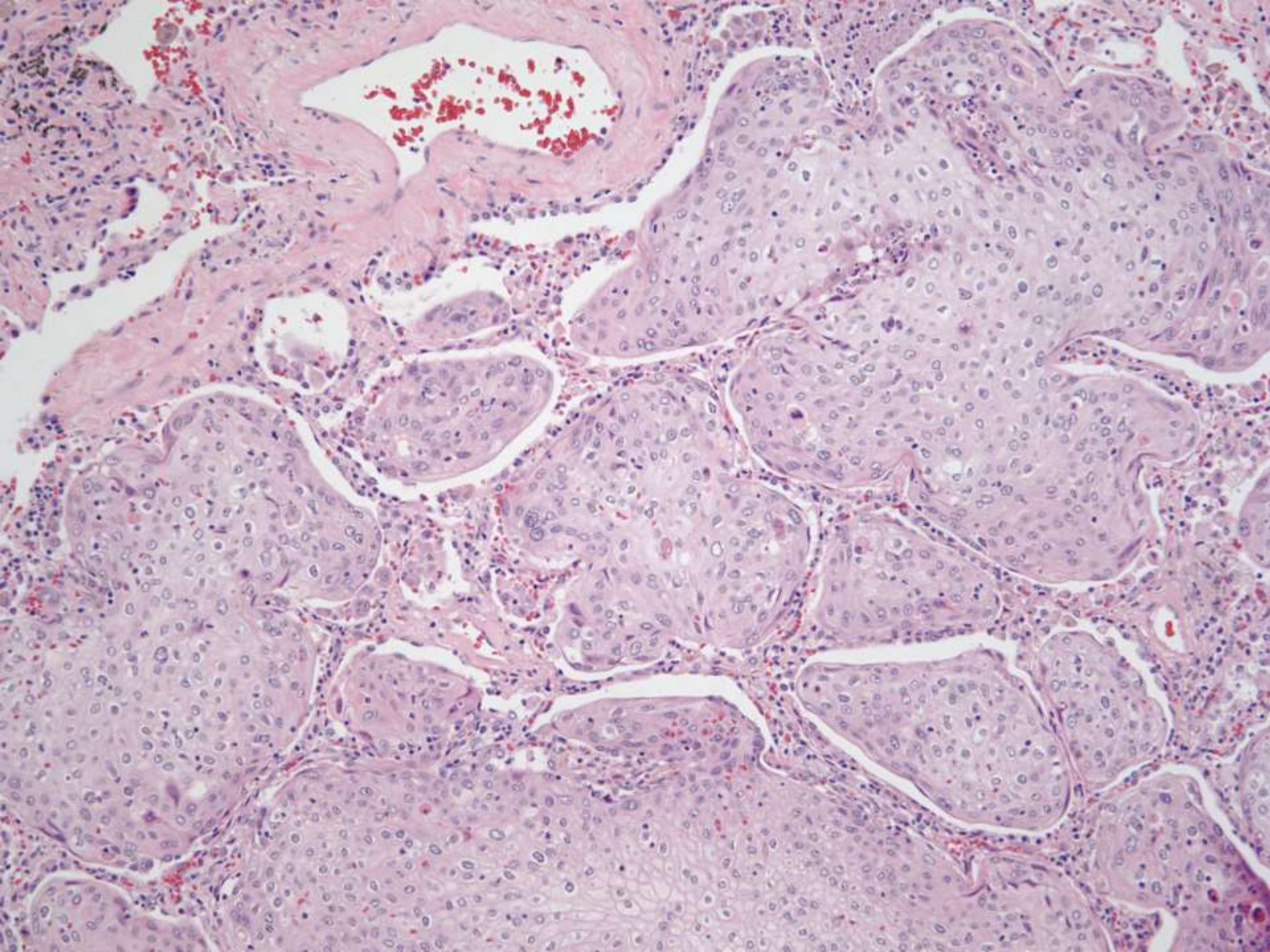
Allison Zemek/John Higgins; Stanford

62-year-old female with persistent, worsening cough with an abnormal chest x-ray, found to have multiple stellate nodules of the left lower lobe and left upper lobe, 1.6 cm in greatest diameter.

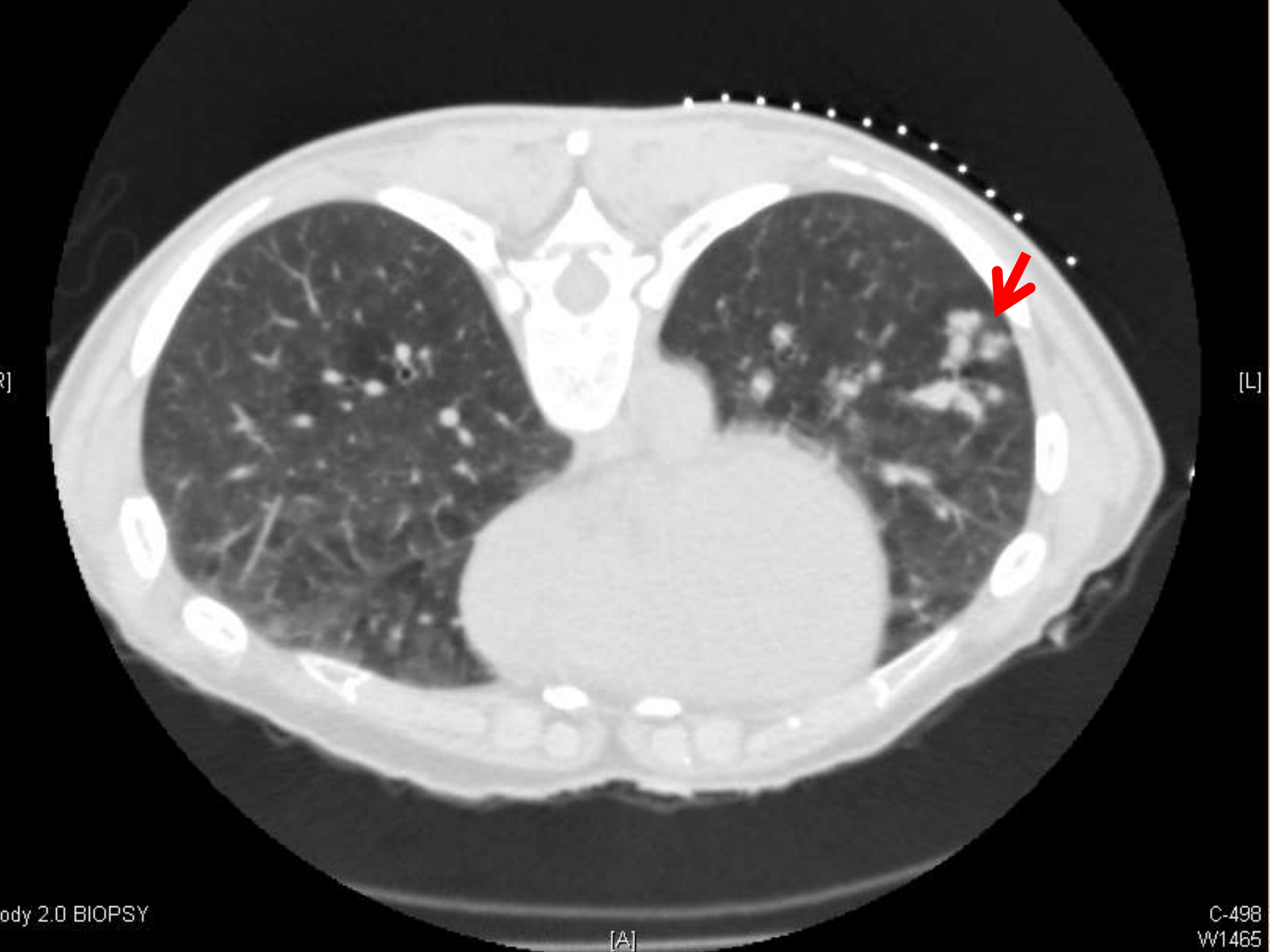

R]
[L]
ody 2.0 BIOPSY
[A]
C-498
W1465

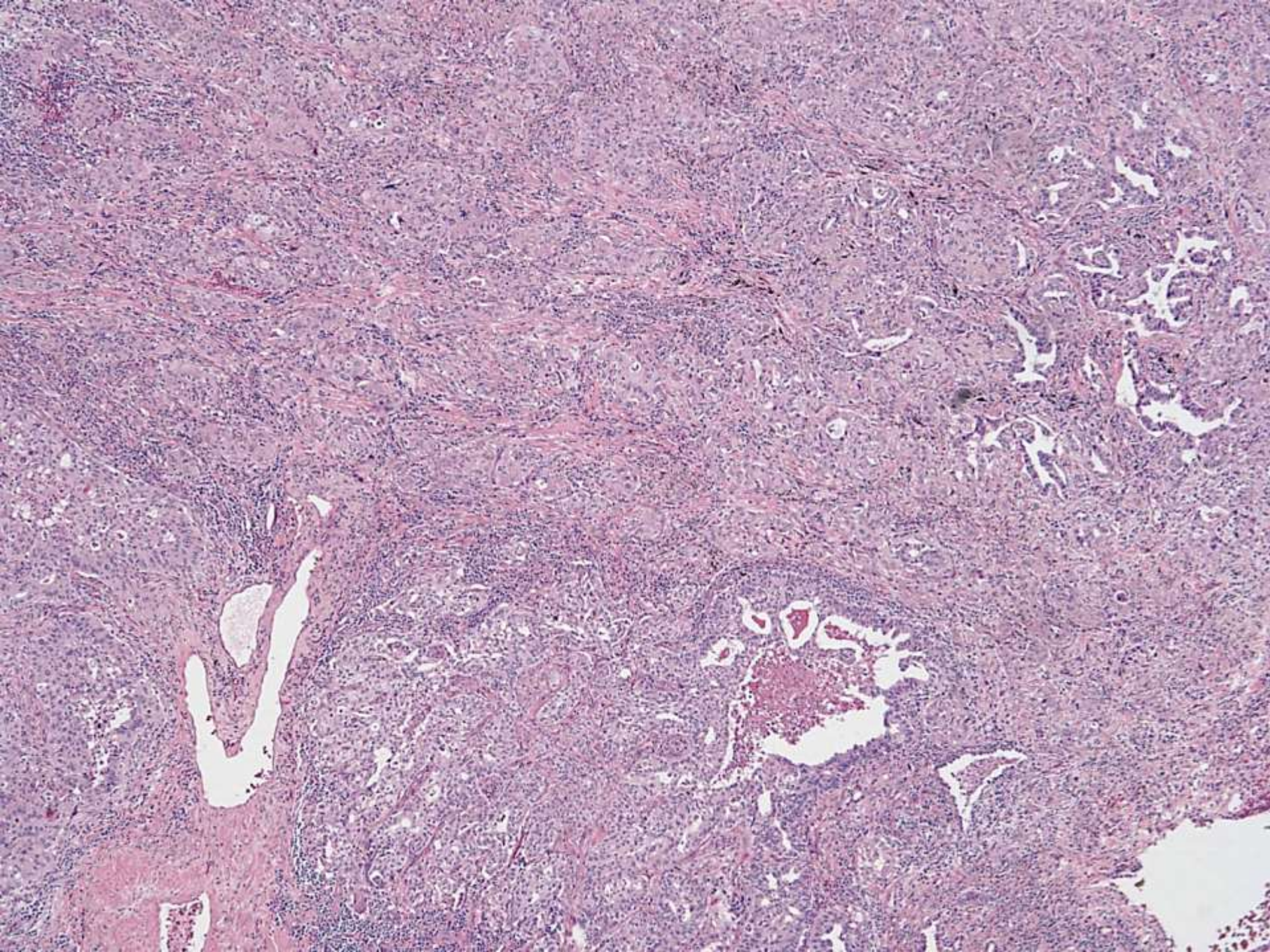


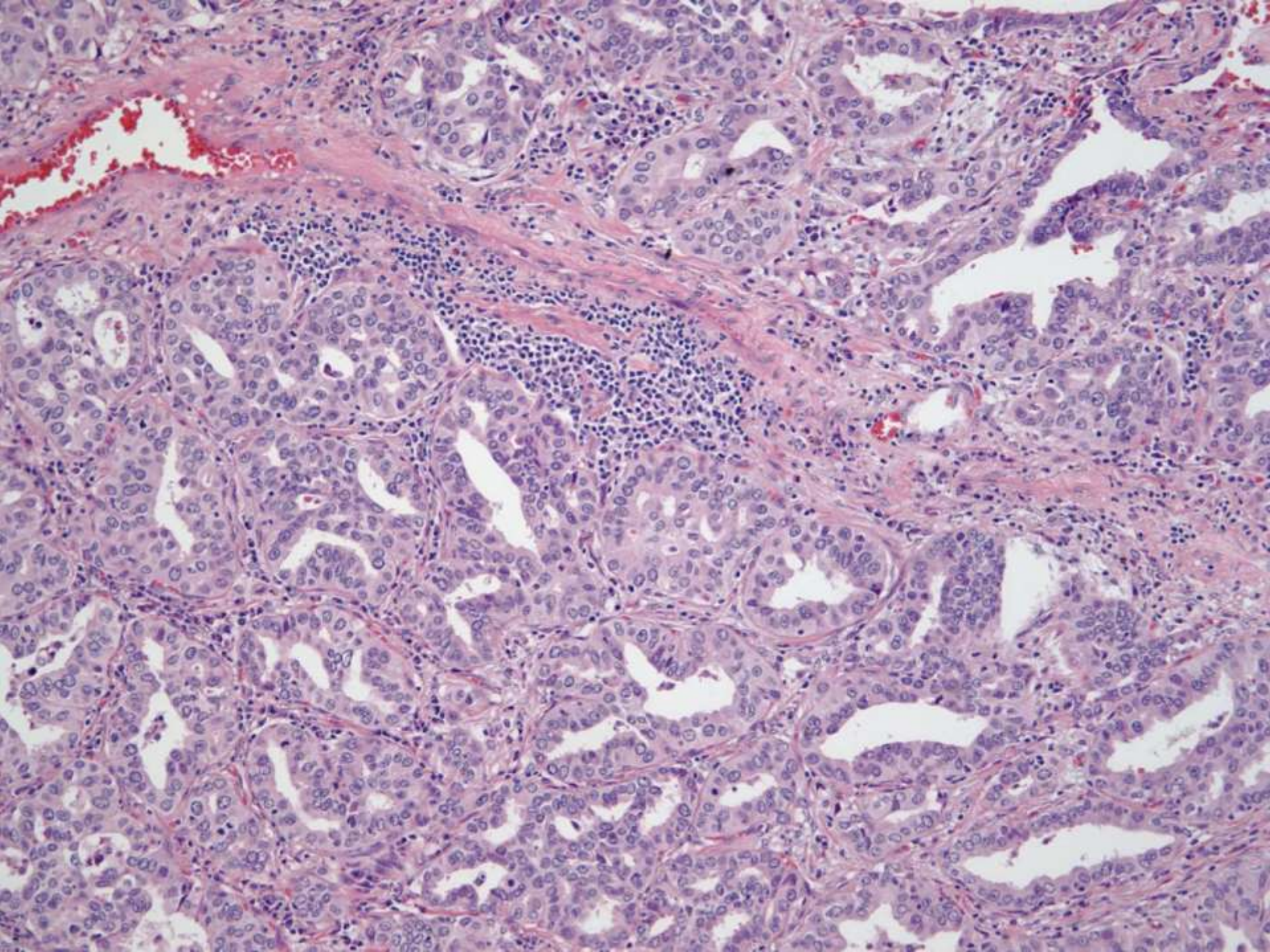


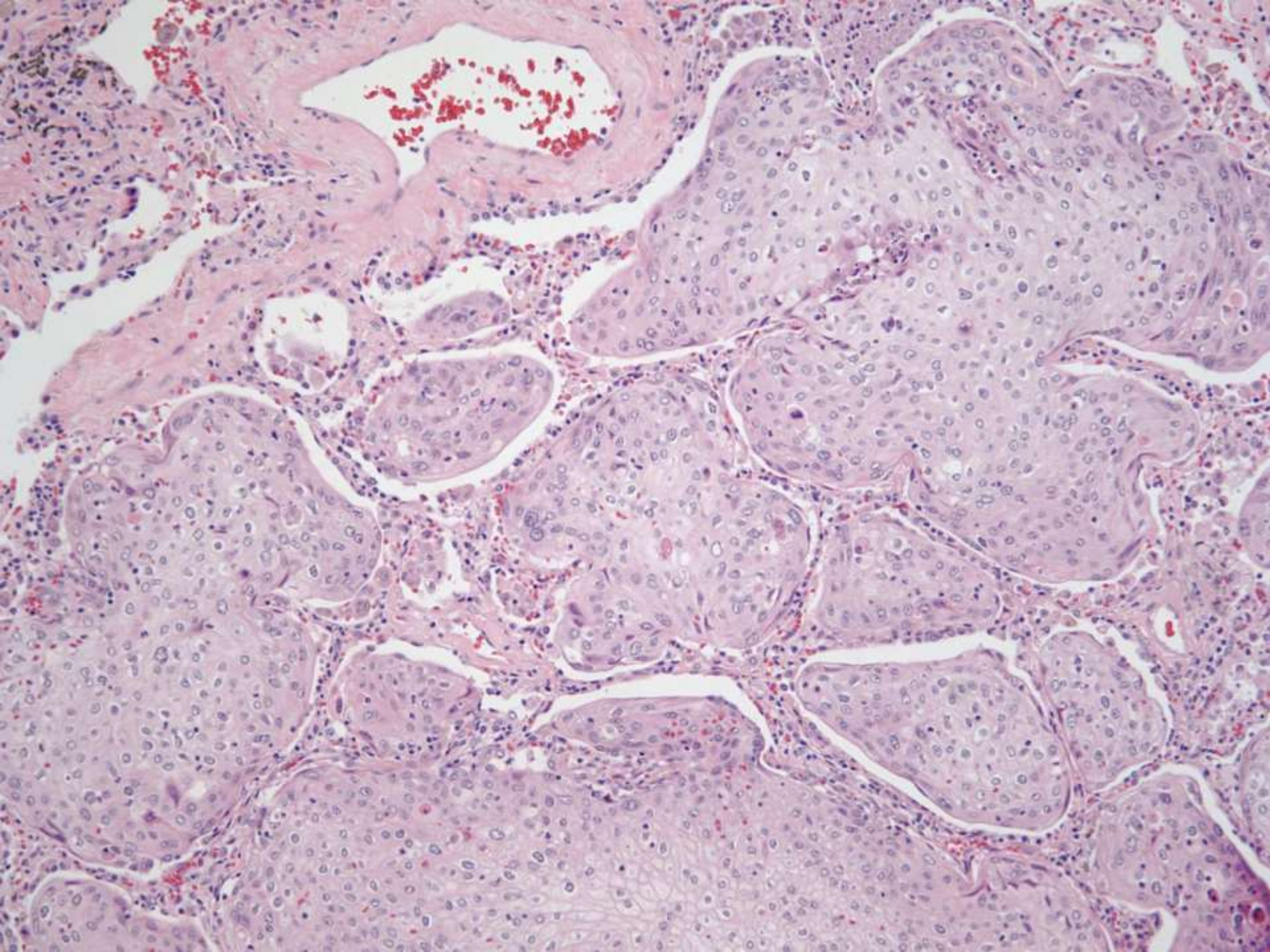


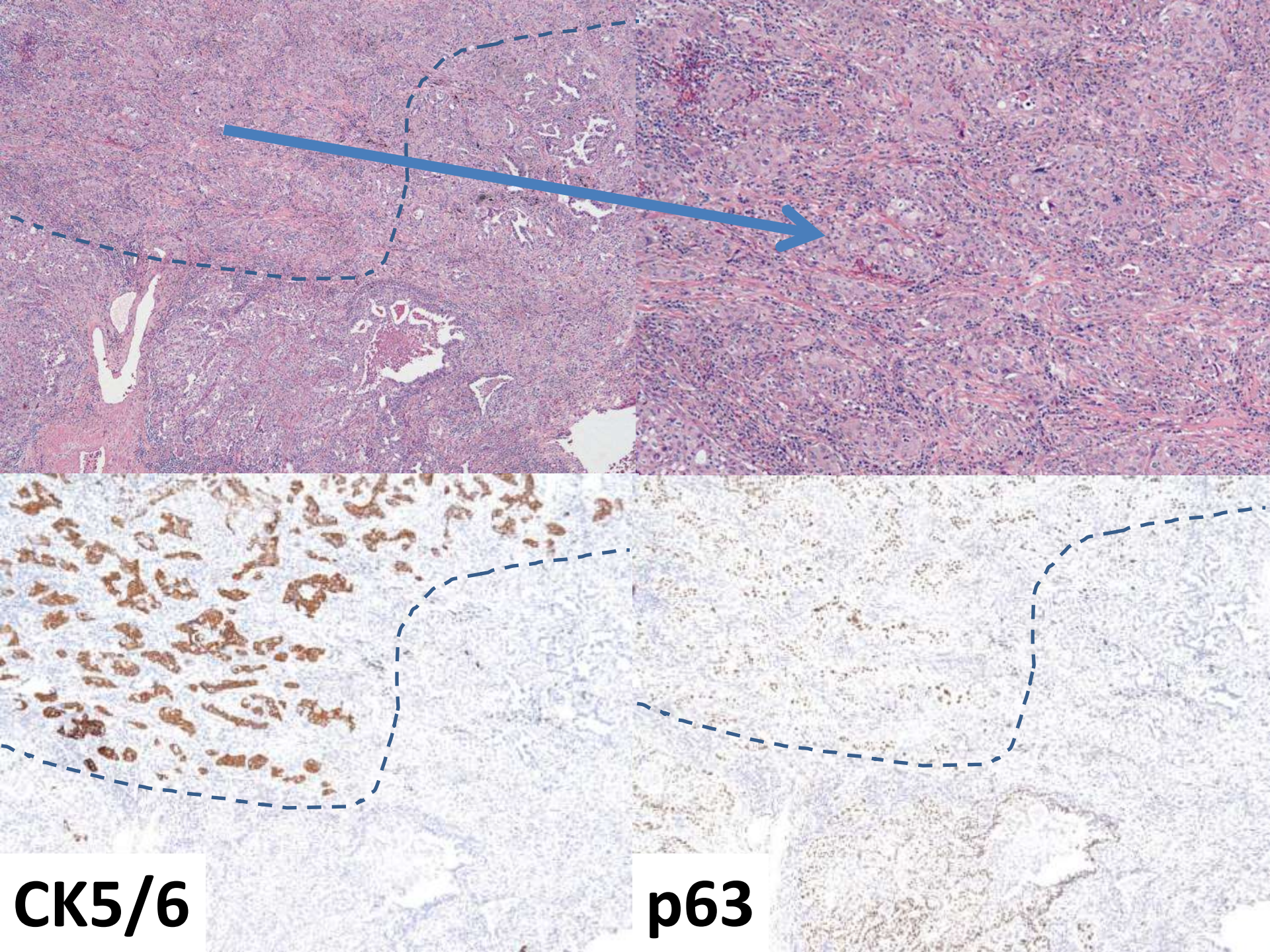
DIAGNOSIS?

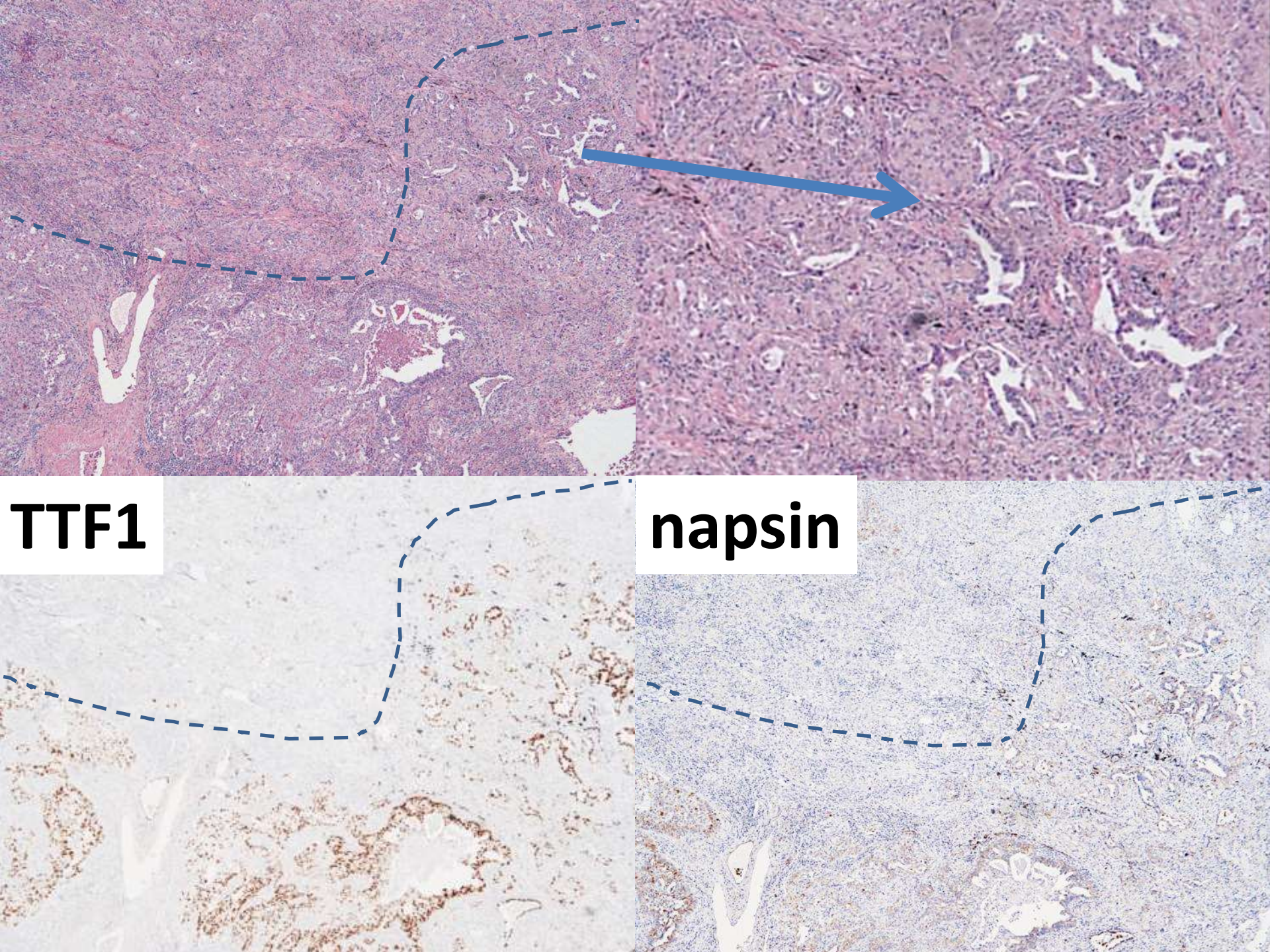

R]
[L]
ody 2.0 BIOPSY
[A]
C-498
W1465








CK5/6
p63


TTF1
napsin

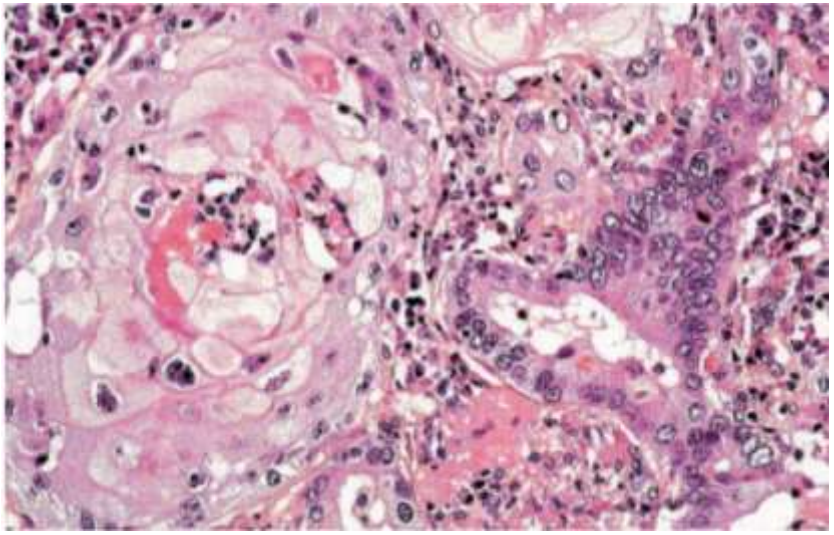
Adenosquamous Carcinoma

Clinical features

- 0.4-4% of all lung cancers[1]
- Male predominance, smoking
- Peripheral (can be central)

Histopathologic features

- Biphasic
- At least 10%
- Can be suggested on cyto



Adenosquamous Carcinoma

Immunohistochemical features

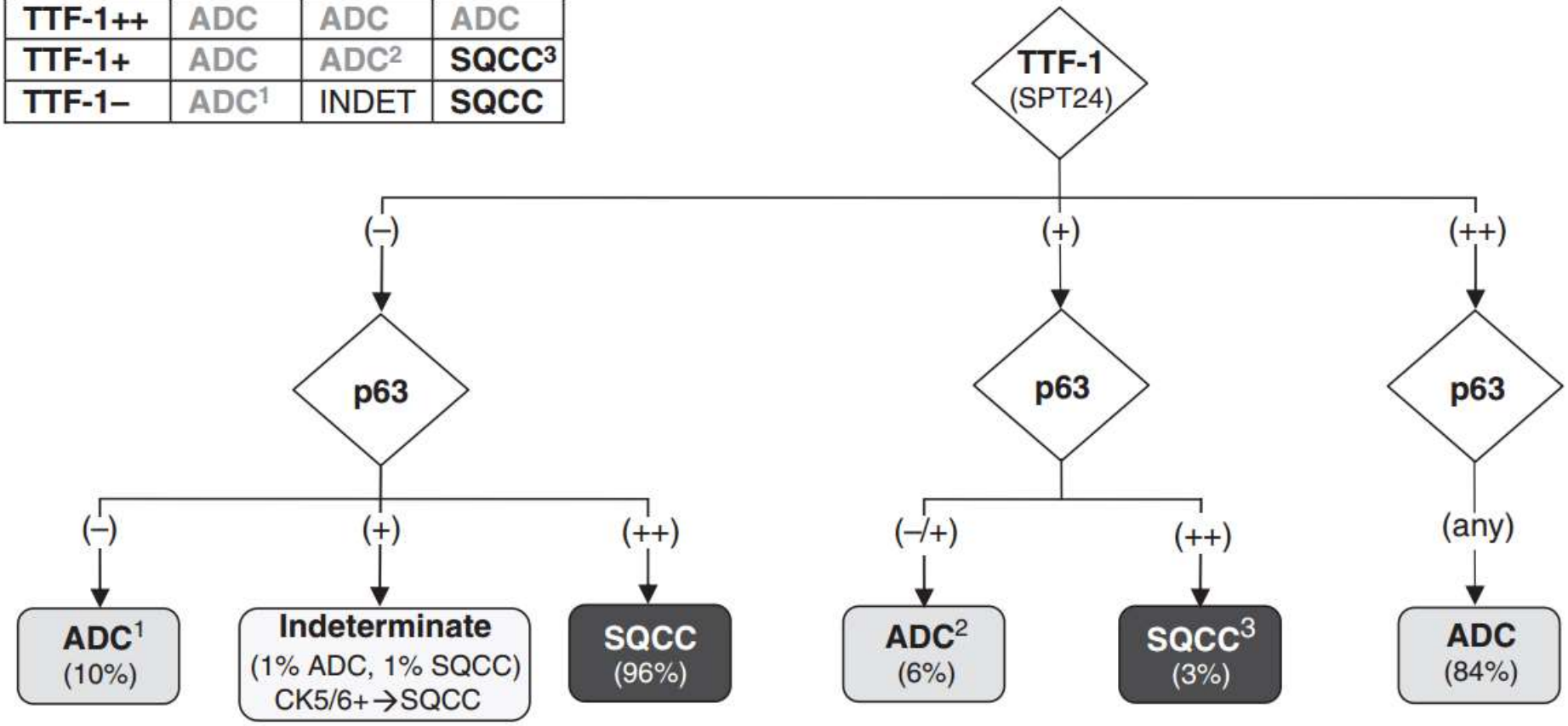
- Discrete populations
- Cross-reactivity*

Adeno	Squam
TTF1	p40
Napsin	p63
CK7	CK5/6

Genetic profile

- EGFR women and non-smokers
- KRAS smoking
- Subset with identical mutations in both components[2]
- Also ALK, HER2, LKB1, ROS1, RET, FGFR1

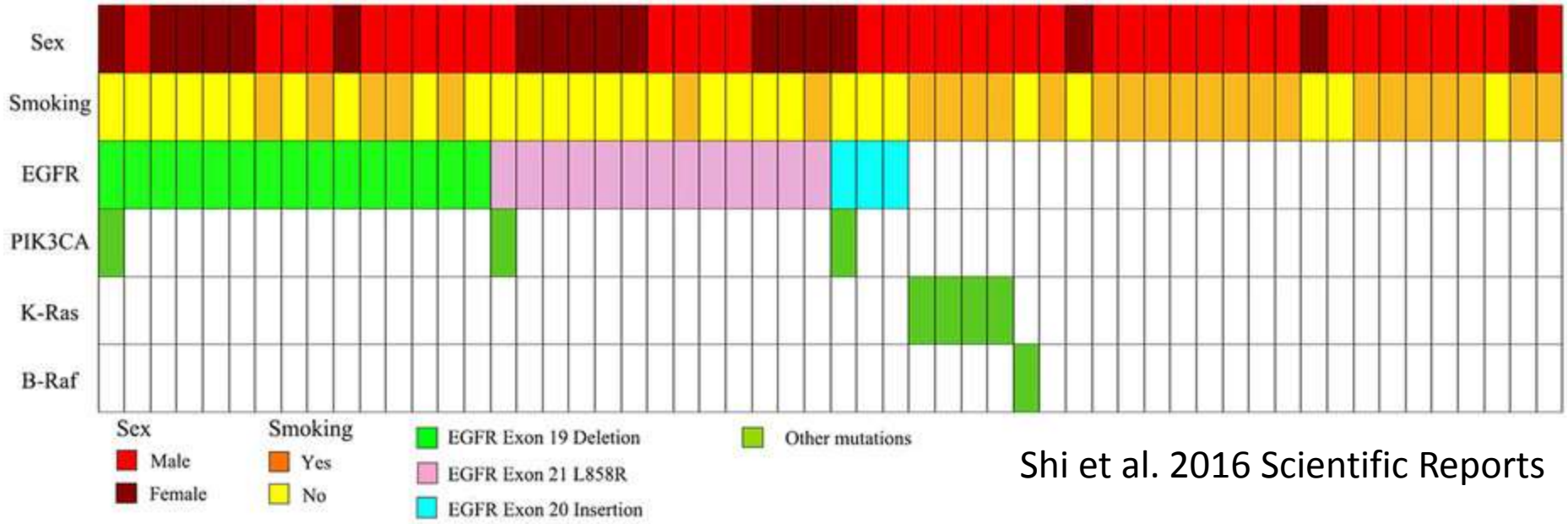
	p63–	p63+	p63++
TTF-1++	ADC	ADC	ADC
TTF-1+	ADC	ADC[2]	SQCC[3]
TTF-1–	ADC[1]	INDET	SQCC



Immunostains for non-small cell lung carcinoma. N Rekhtman et al.

Modern Pathology (2011) 24, 1348–1359

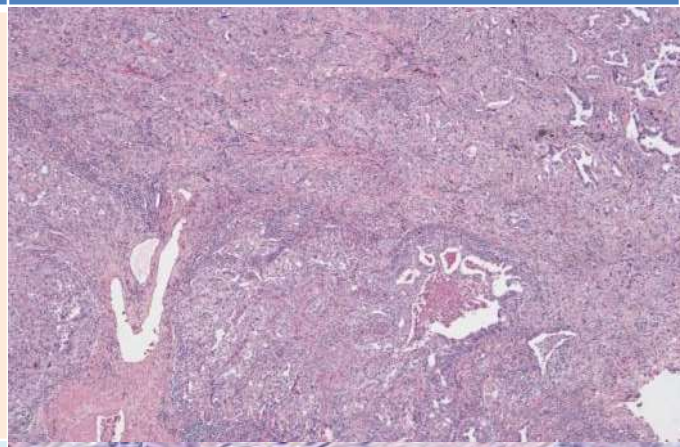
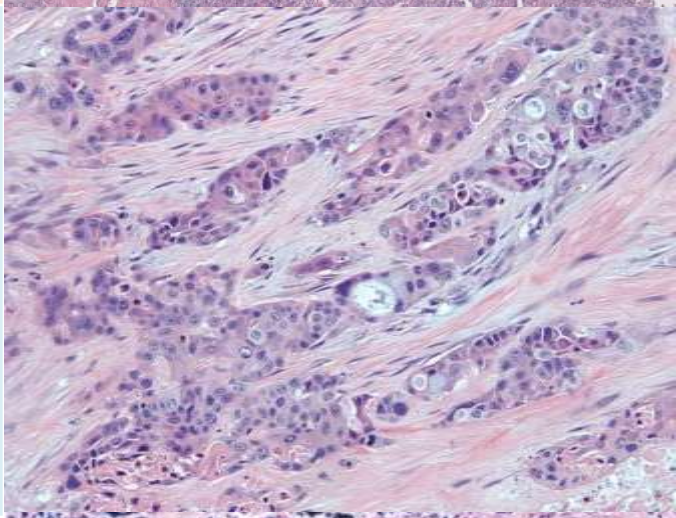
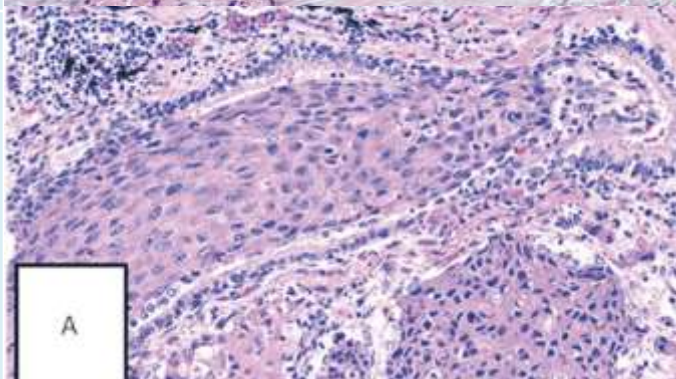
Adenosquamous Carcinoma



Shi et al. 2016 Scientific Reports

EGFR (31/56): Women, non-smoking

KRAS (4/56): Men, smoking

Differential	Clinical	Histo	
Adenosquamous	Peripheral	• Biphasic • >10% of each • Discrete by immuno	
Mucoepidermoid carcinoma	Central, endobronchial	• Low-grade • High-grade* • No overlying in-situ • MAML2	
Entrapped glands	Peripheral	• Interface w/ normal • Focal	

Adenosquamous Carcinoma

Treatment

- Surgical resection
- Chemo/immunotherapy
- Radiotherapy

Prognosis

- Poor compared to NSCLC
- 5 year ~40% for pT1a

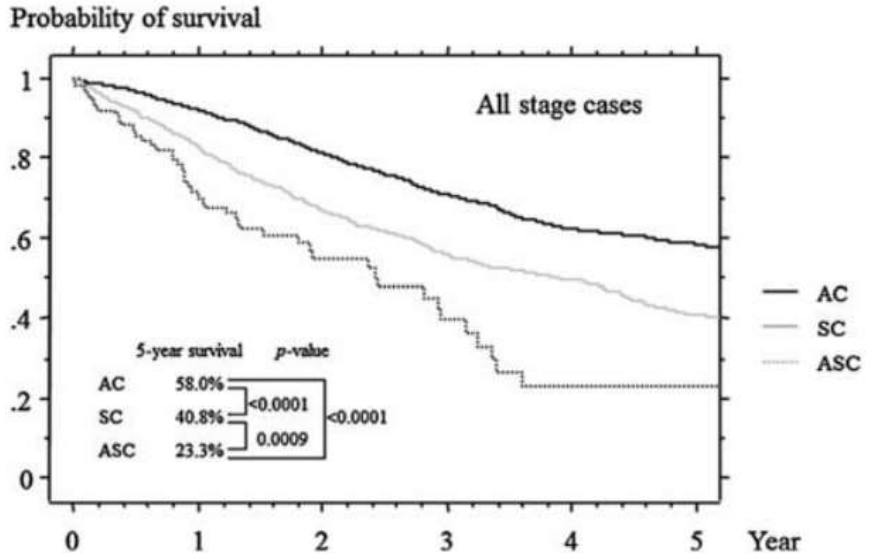


Figure 1: Survival curves following resection for patients with all stage cases of adenocarcinoma (AC), squamous cell carcinoma (SC) and adenosquamous carcinoma (ASC).

Adenosquamous Carcinoma

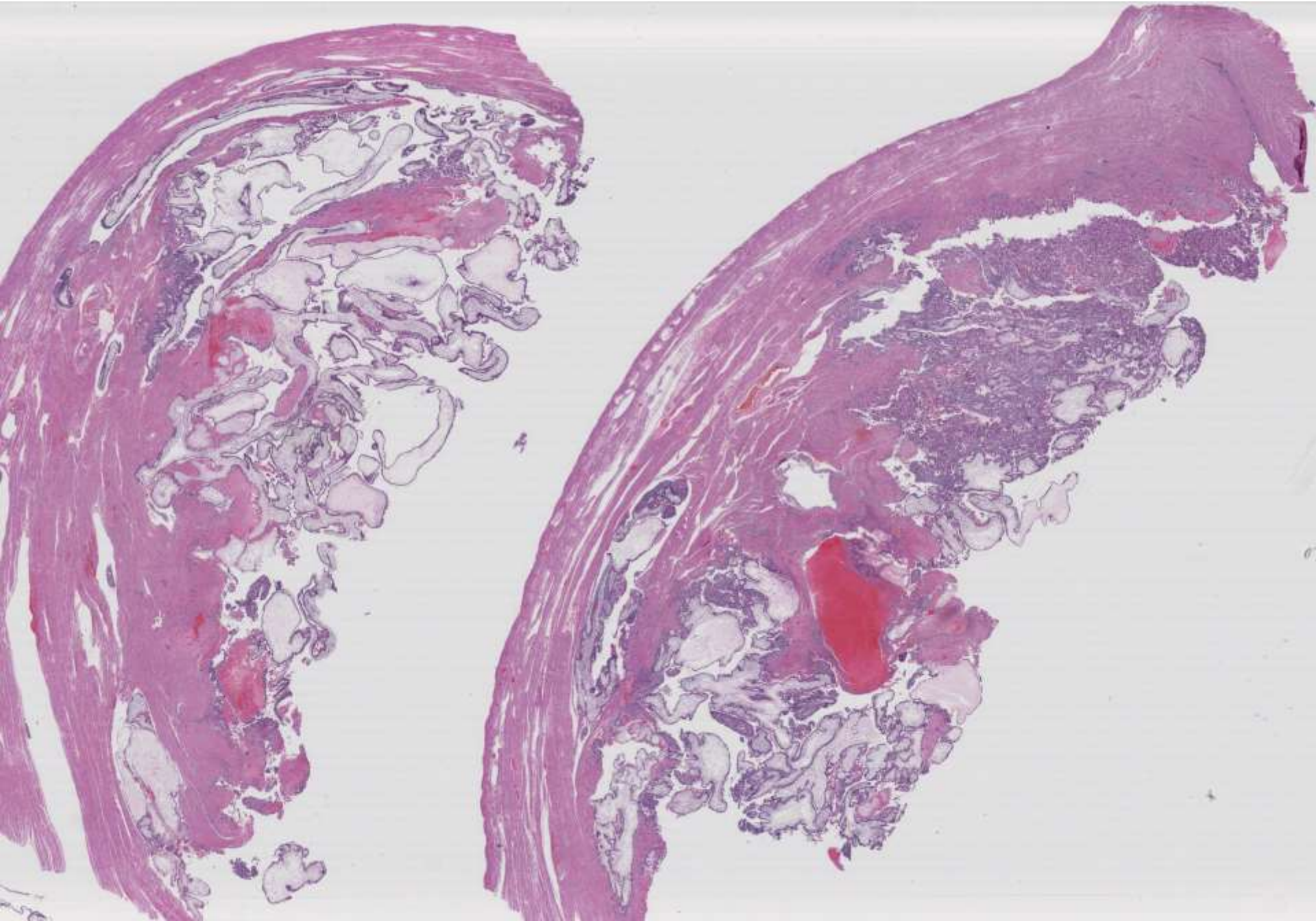
References

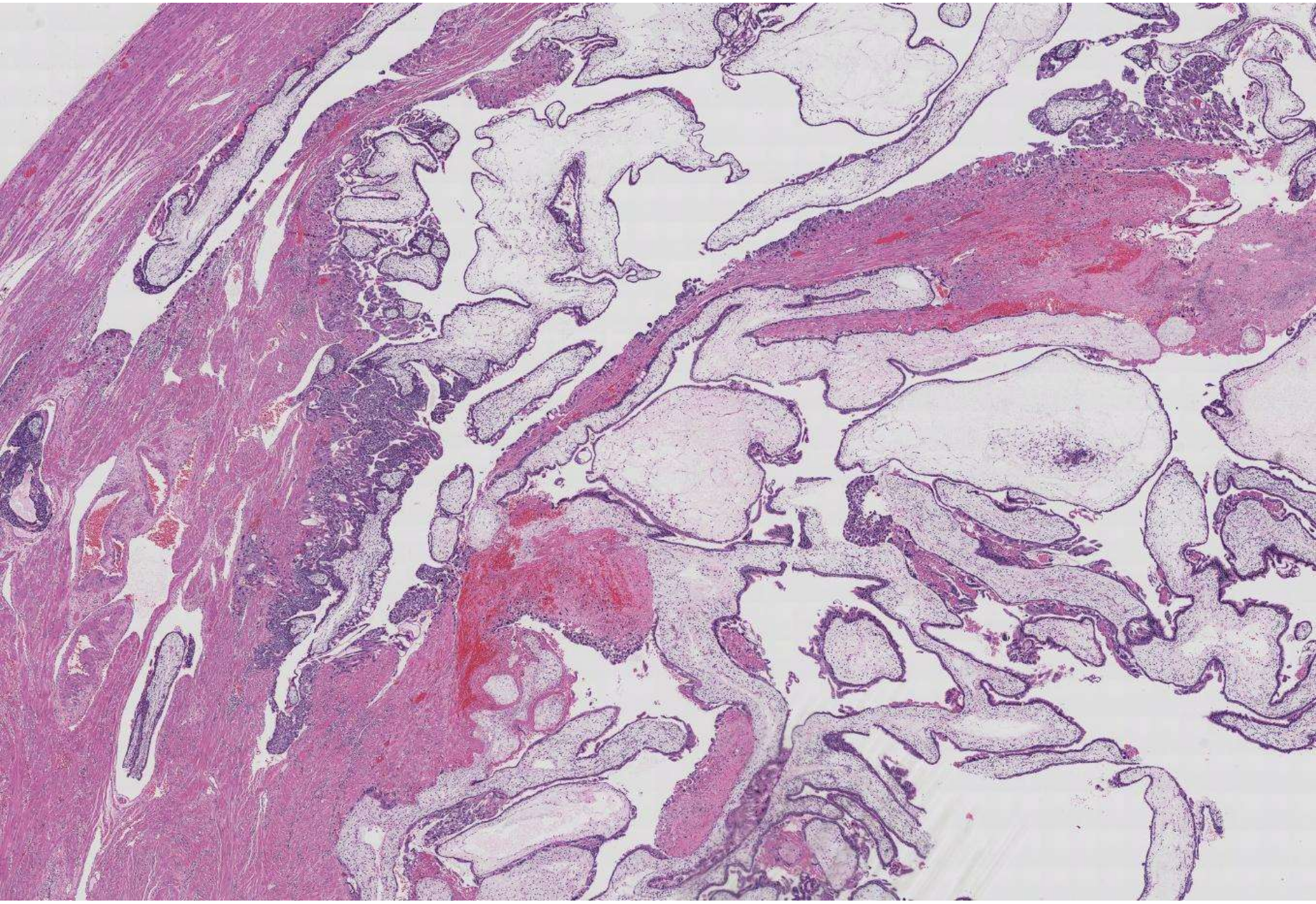
1. WHO classification of tumours of the lung, pleura, thymus and heart. W.D. Travis, E. Brambilla, A.P. Burke, A. Marx, A.G. Nicholson 2015
2. International Agency for Research on Cancer, Lyon (2015)Adenosquamous carcinoma of the lung: a microdissection study of KRAS and EGFR mutational and amplification status in a western patient population. Tochigi et al. Am J Clin Pathol 2011;135:783-789
3. Adenosquamous carcinoma of the lung: surgical results as compared with squamous cell and adenocarcinoma cases. Maeda et al. Eur J of CT Surg 2012;41:357-361
4. Screening for major driver oncogene alterations in adenosquamous lung carcinoma using PCR coupled with next-generation and Sanger sequencing methods. Shi et al. Scientific reports 2016; 6

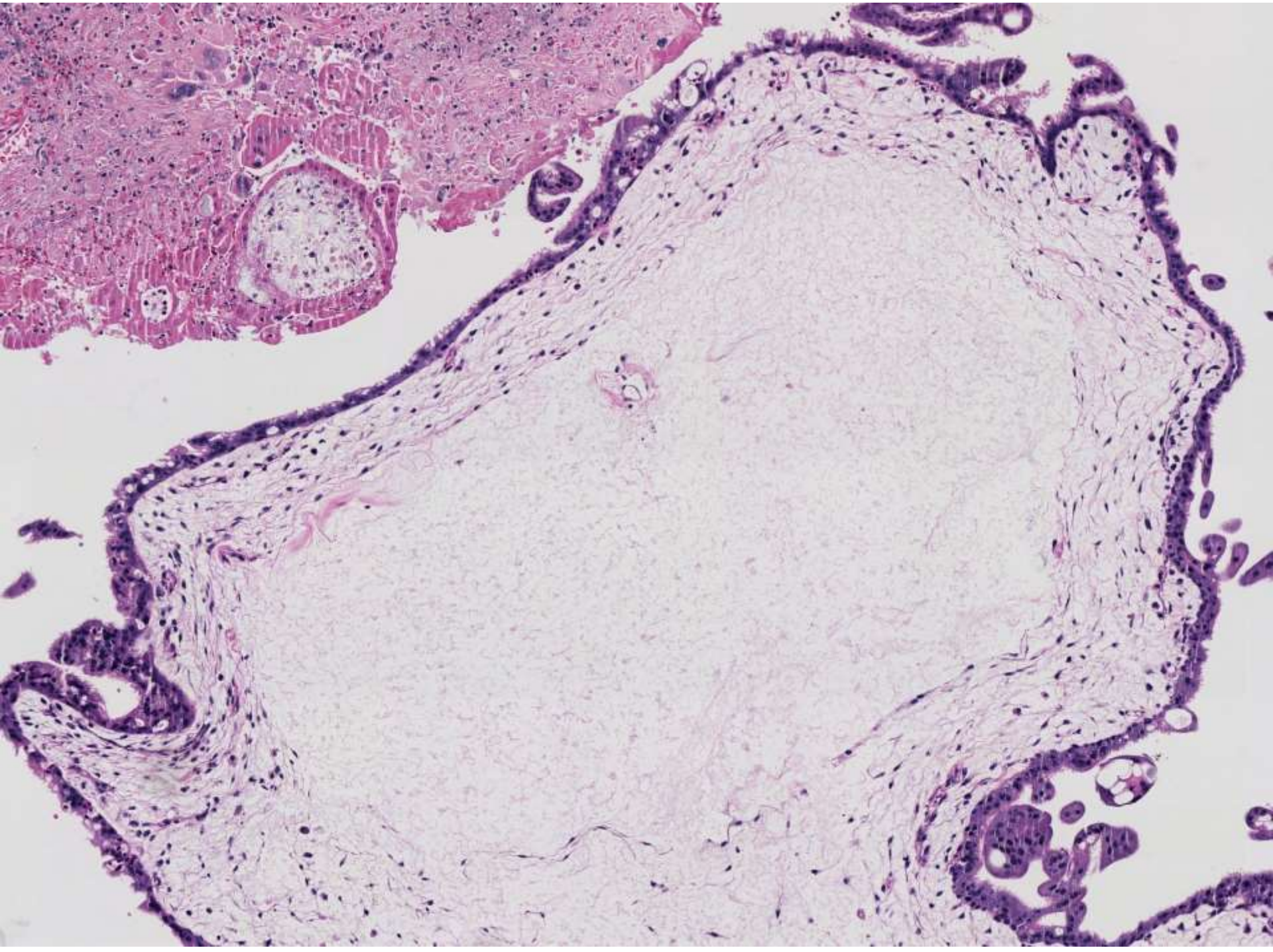
SB 6095 (scanned slide)

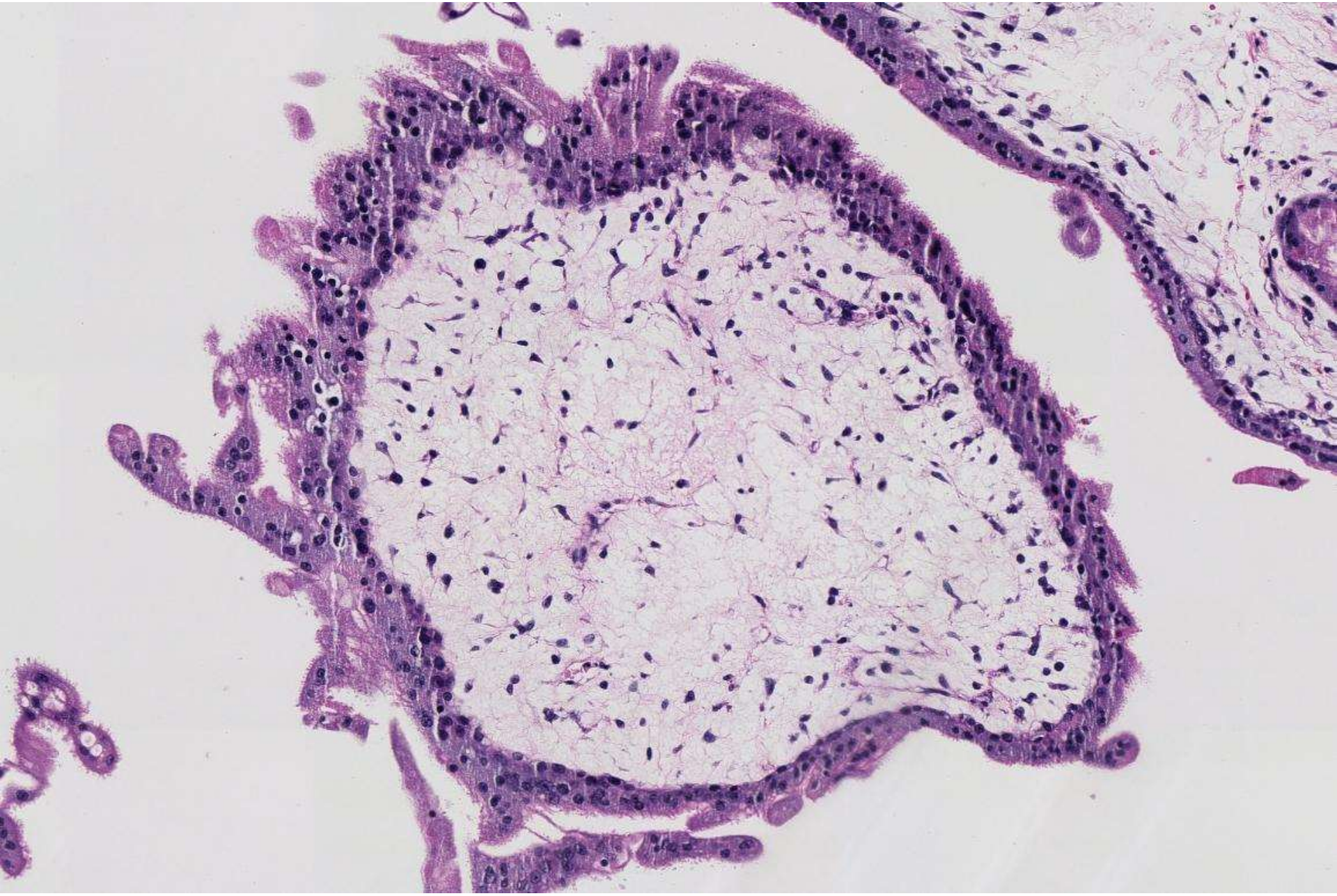
Malti Kshirsagar; El Camino Hospital

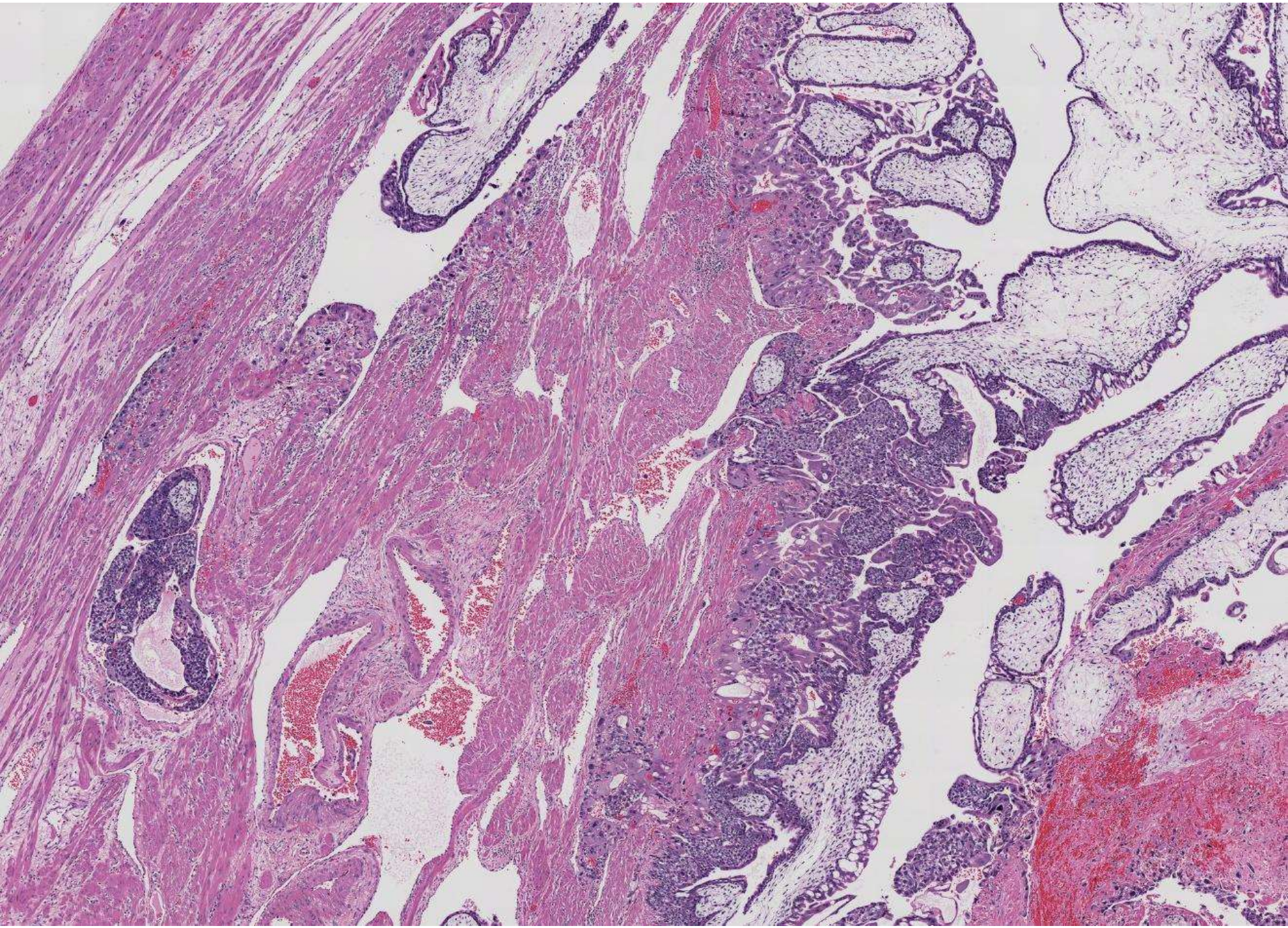
33-year-old female with specimen submitted labeled as “uterine fibroid, right uterine horn, and products of conception.”

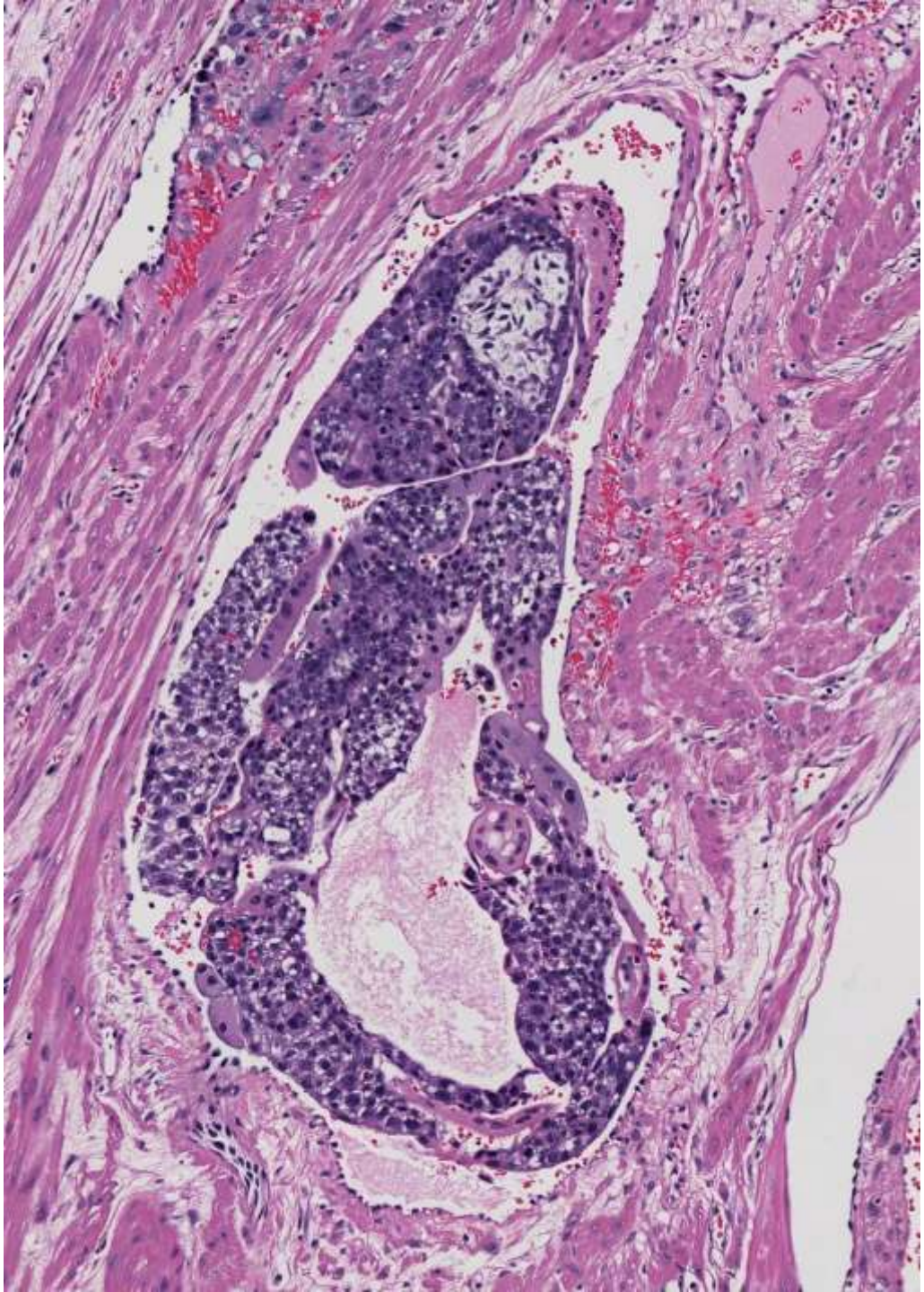


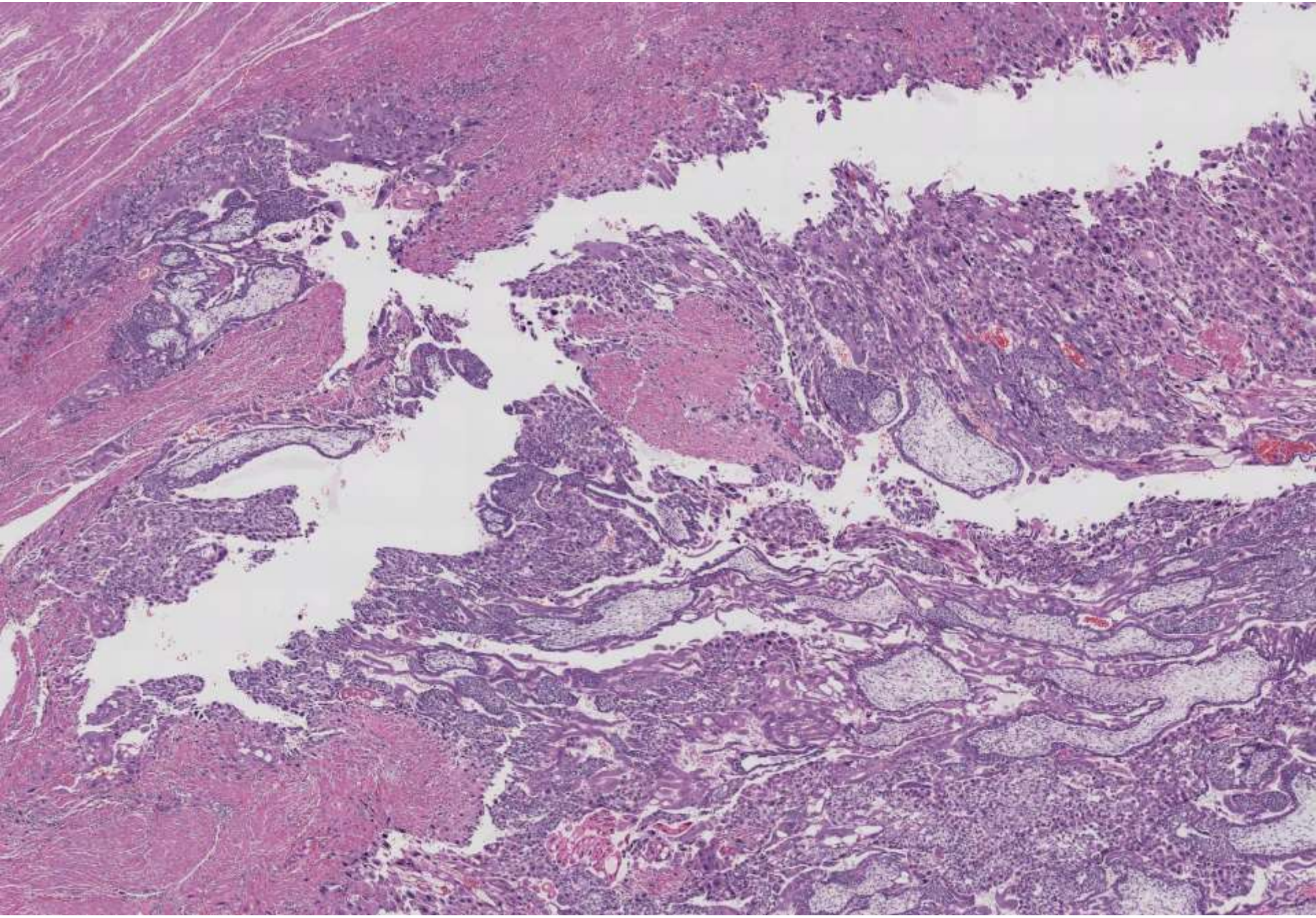


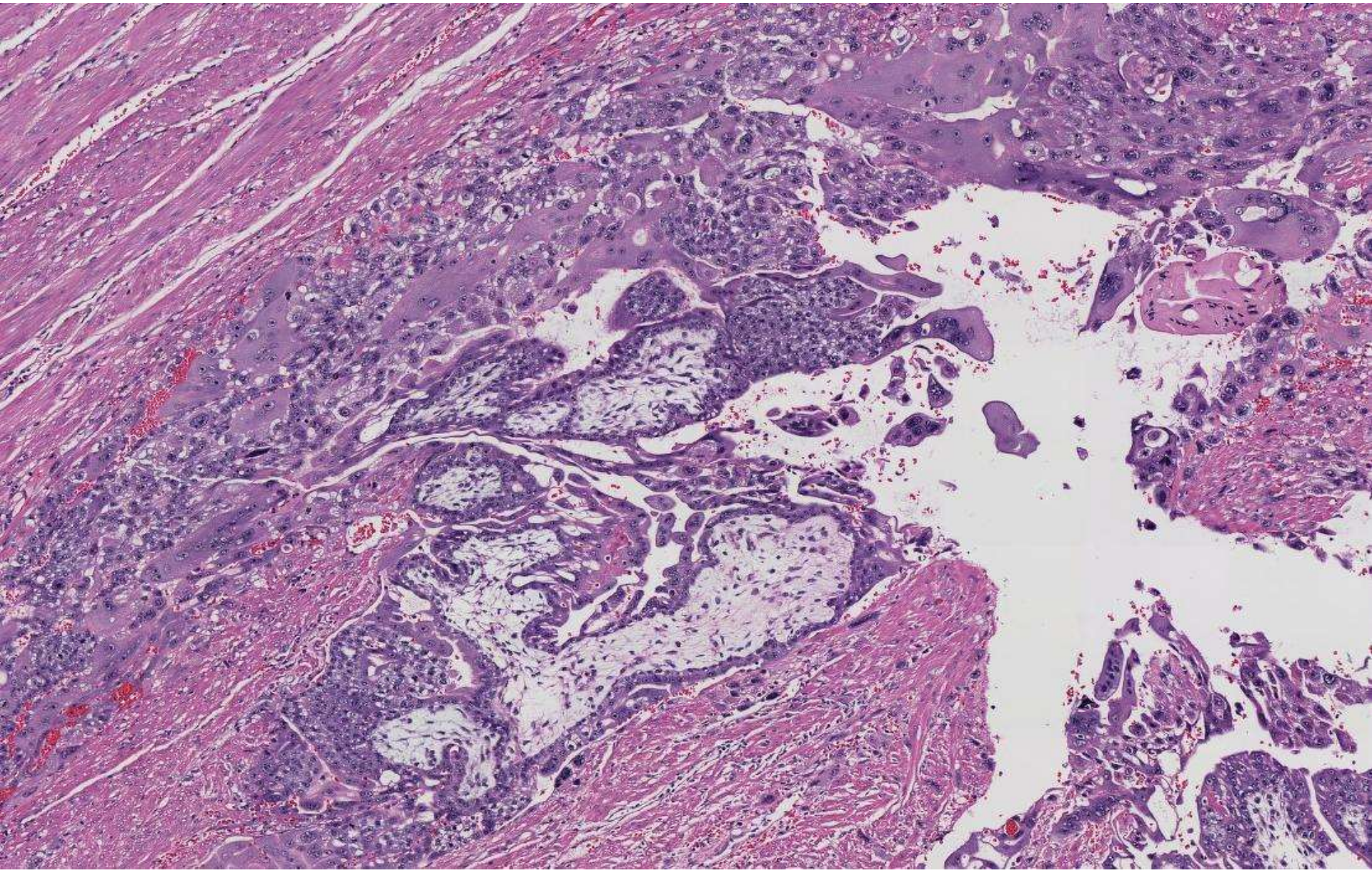












DIAGNOSIS?

Clinical scenario:

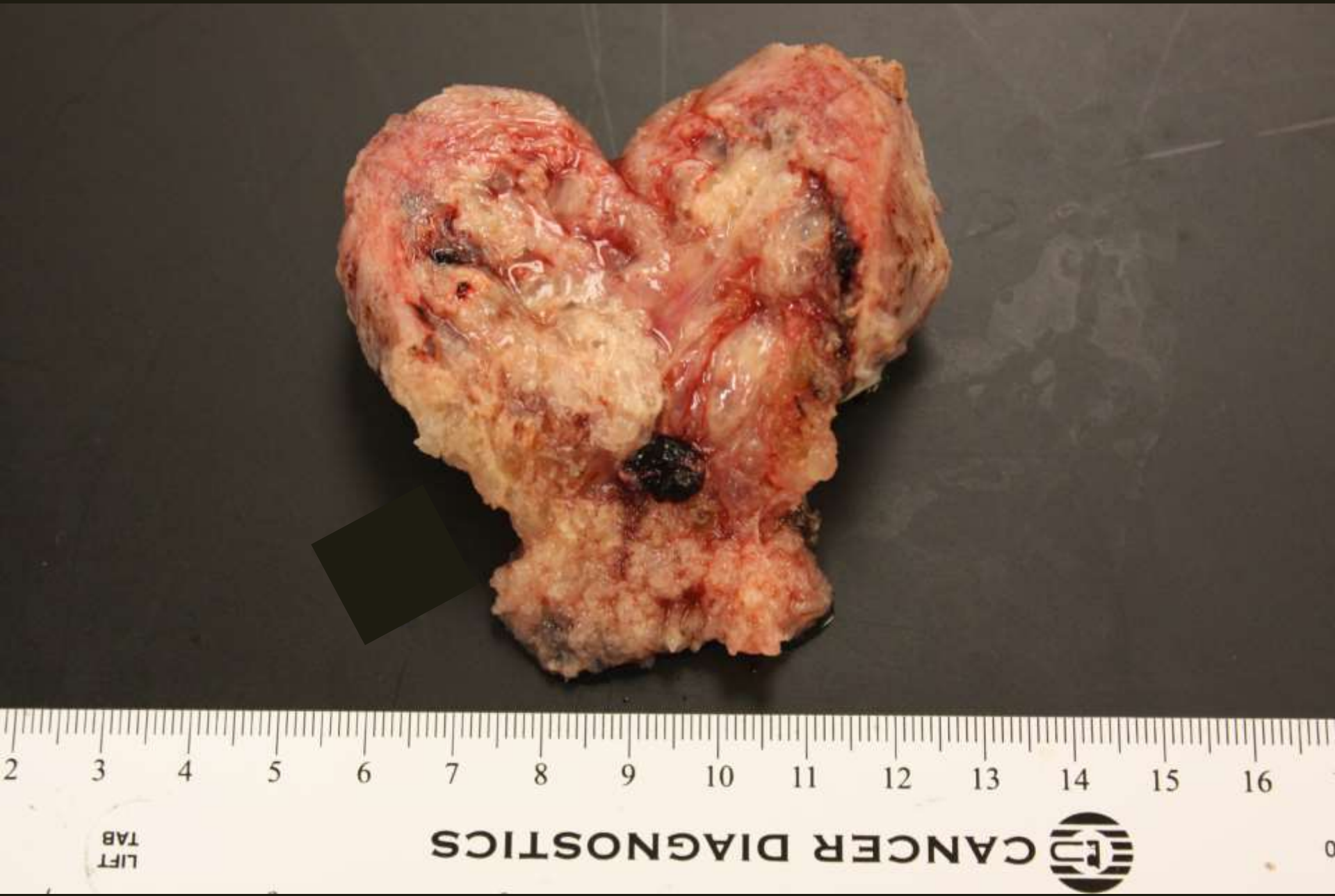
1. 33 year old woman with b-HCG of **189, 045** mIU/mL and right adnexal mass

2. Ultrasound showed NO intrauterine pregnancy

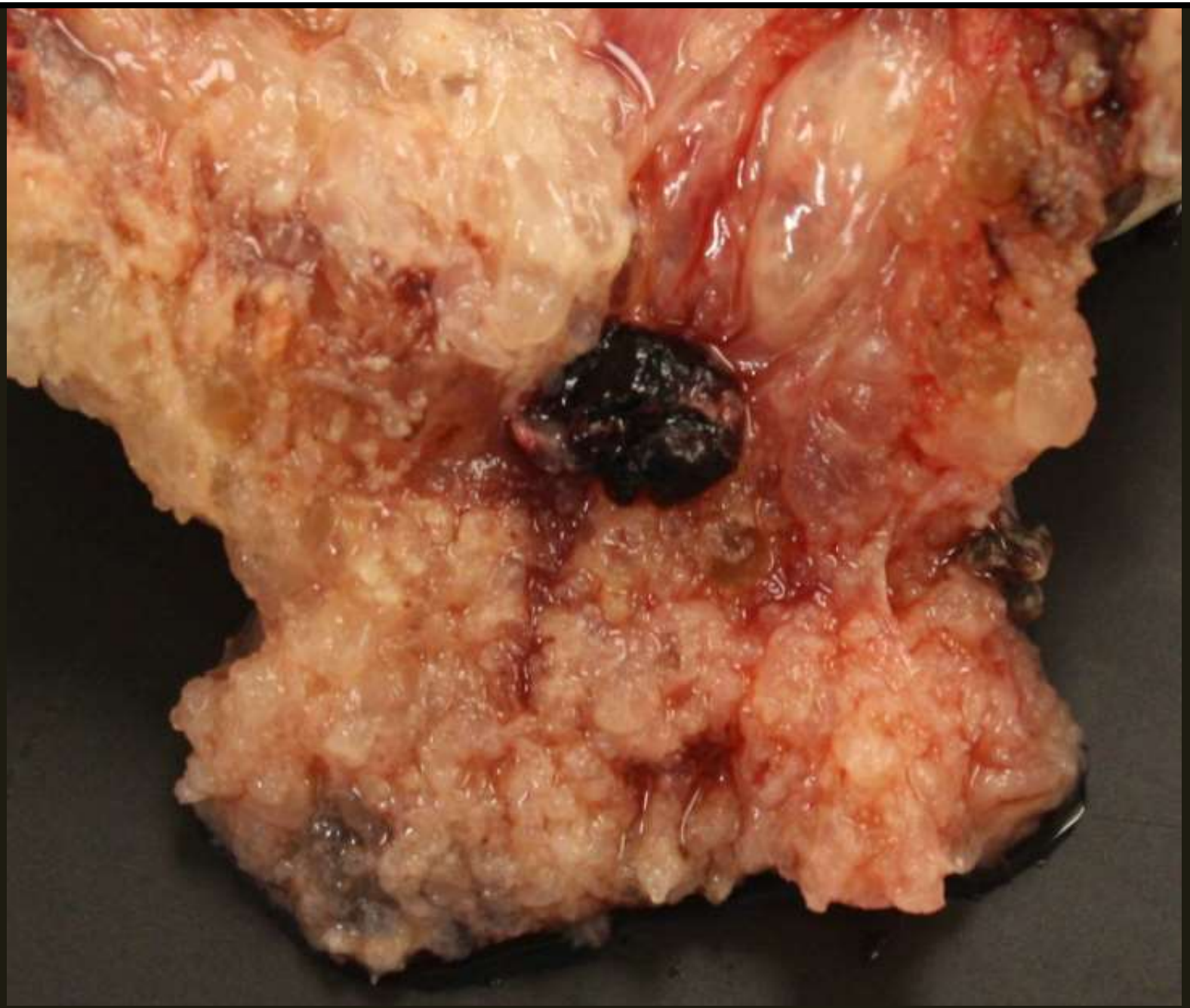
3. Patient called in for laparoscopic removal of presumed ectopic molar pregnancy

Gross image of intact specimen: Rt. Uterine horn of bicornuate uterus

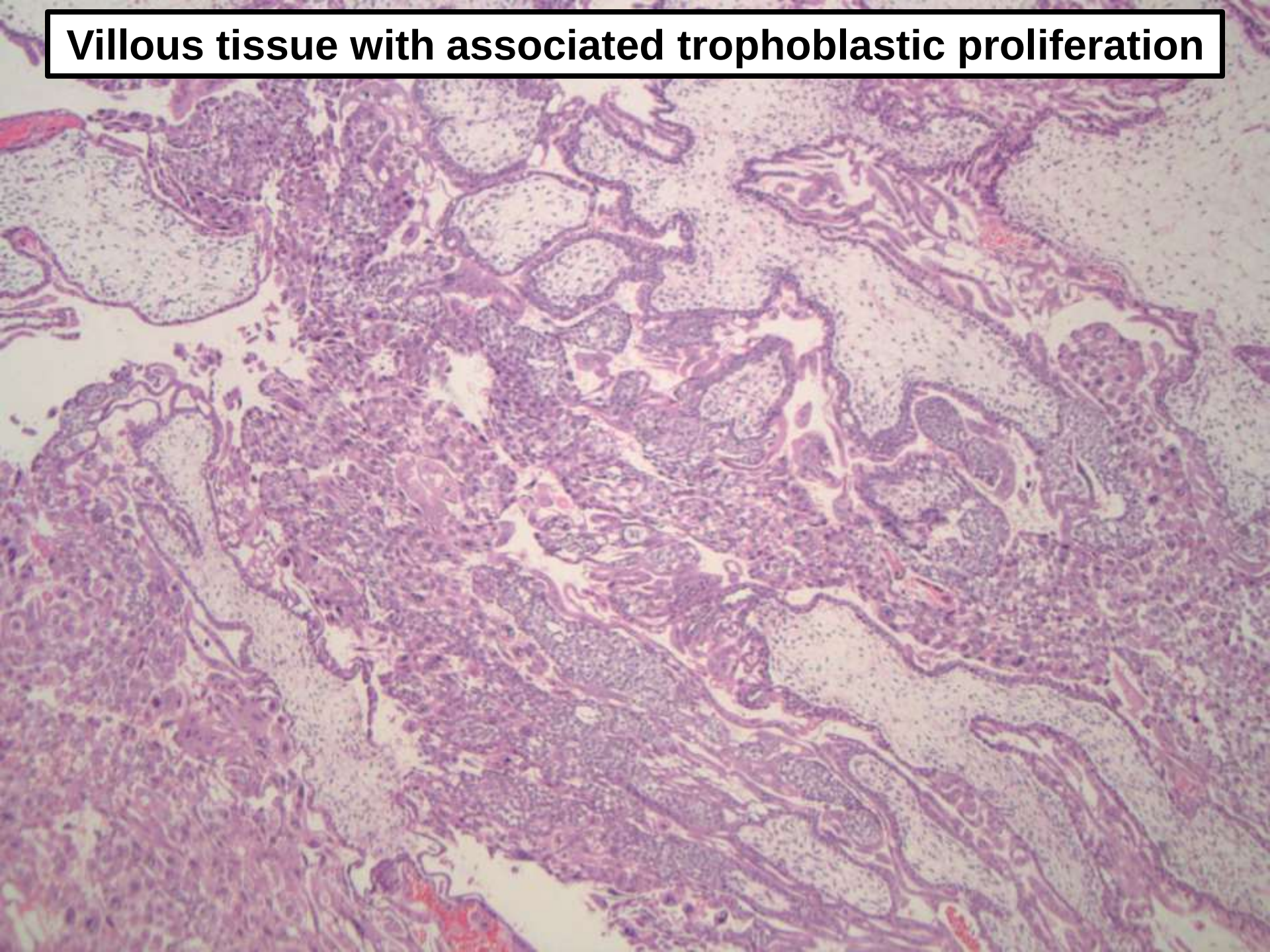
Gross image of bisected specimen: Rt. Uterine horn of bicornuate uterus



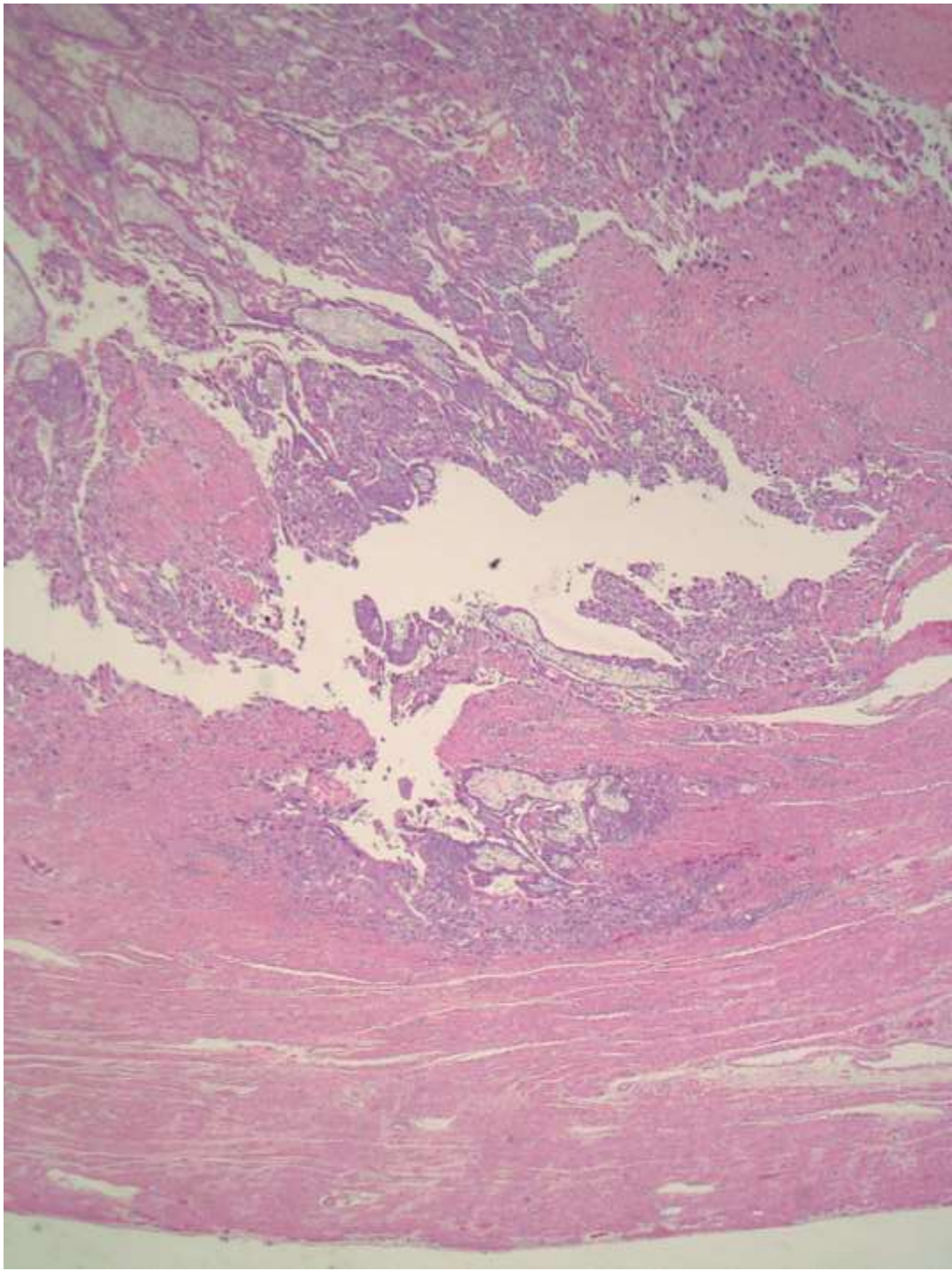
Gross image of bisected specimen: Rt. Uterine horn of bicornuate uterus

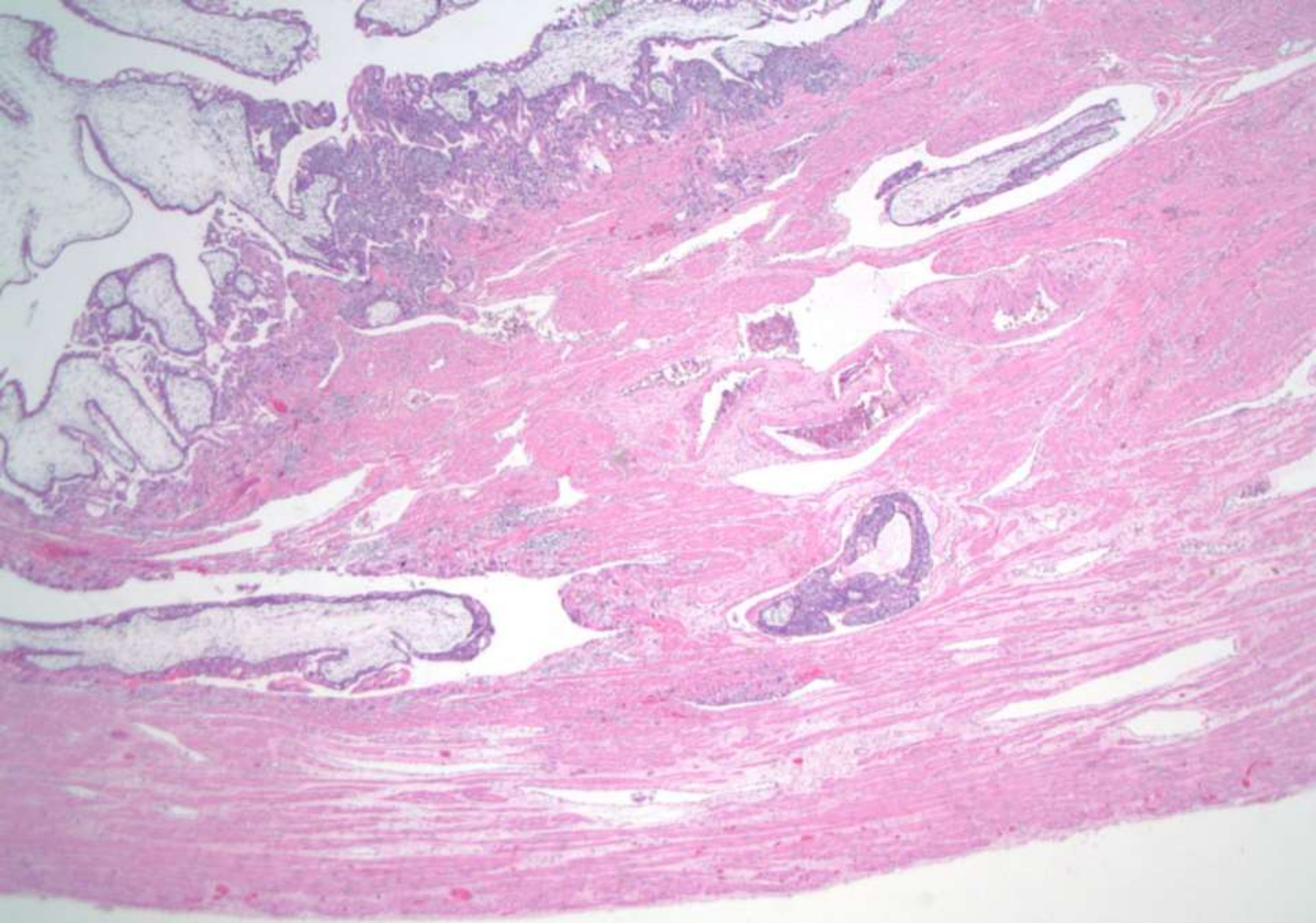


Villous tissue with associated trophoblastic proliferation



Villi invading myometrium





Differential diagnosis:

1. Placenta Increta
   --Villi will not appear molar

2. Choriocarcinoma
   -- Usually not accompanied by chorionic villi
   -- May have extensive necrosis
   -- High mitotic activity

3. Invasive hydatidiform mole
   -- Molar villi invading myometrium and myometrial vessels

INVASIVE HYDATIDIFORM MOLE:

1. **Clinical:**
   -- Patient usually presents with uterine bleeding and elevated HCG following evacuation of a molar pregnancy
   -- Less often a primary finding at the time of molar diagnosis
   -- This may follow a dx of EITHER a partial or complete mole
   -- Rarely an invasive mole can perforate the uterus
   -- Invasive mole occurs in 16% of patients diagnosed with a complete hydatidiform mole
   -- Villi may embolize to distant sites (lung, vagina, brain, spinal cord)

2. **Gross:** May see a hemorrhagic lesion with irregular borders invading the myometrium

3. **Micro:**
   - Molar villi invade the myometrium, its vessels, or the broad ligament
   - Villi may be obscured by trophoblastic proliferation

INCIDENCE OF HYDATIDIFORM MOLE – A REAPPRAISAL:

1. Molecular genotyping is allowing for increased detection of partial moles

2. Prior studies from North America and Europe (based on histologic exam alone in most cases, and selective flow cytometry in 1) show a 1-2 per 1000 delivery incidence of molar gestation (CHM or PHM)

PREVIOUSLY REPORTED INCIDENCE OF HYDATIDIFORM MOLE IN DIFFERENT GEOGRAPHIC LOCATIONS:

TABLE 2. Recent European and North American studies of the incidence of HM

Place/Year	Study Type	Central Histology Review	Adjunctive Technique(s)	Incidence of HM	CM/PM Ratio
British Columbia/1981[20]	Voluntary registry retrospective	Yes	None	1/1202 pregnancies	Not stated
Hawaii/1984[21]	Population-based retrospective	Yes	*	1.2/1000 naturally terminating pregnancies	2:1*
United Kingdom/ 1985[22]	Population-based retrospective	No	None	1/1400 deliveries	4:1
United Kingdom/ 1986[23]	Registry retrospective	No	None	1.54/1000 live births	4:1
Lombardy/1986[24]	Hospital-based retrospective	No	None	0.66/1000 pregnancies	Not stated
United States/ 1986[25]	Retrospective of legal abortions, multi-institutional	No. (includes operator diagnoses)	—	0.75/1000 pregnancies	Not stated
Sweden/1992[26]	Incomplete registry retrospective	No	None	1.54/1000 deliveries 1/1103 pregnancies	Not stated
Ireland/1993[27]	Multi-institutional Retrospective	Yes	Flow cytometry (selective)	1.9/1000 pregnancies	1:3
United Kingdom/ 2002[28]	Registry retrospective	Yes	None	Not stated	1:1.13
Finland/2005[29]	Population-based retrospective	No	None	0.984/1000 deliveries	Not stated
England and Wales/2010[30]	Registry retrospective	Yes	None	2.17/1000 live births	1:1.35

*A subset of this study was analyzed by cytogenetics and CM/PM of 1:2.

INCIDENCE OF HYDATIDIFORM MOLE – A REAPPRAISAL:

A recent study from Toronto, using P57 immunostaining and ploidy analysis by PCR is reporting a **3.3 per 1000** delivery incidence of molar gestation (in a 27 month time frame - 2013-2015). This is the highest reported incidence to date in a geographic location.

TABLE 1. Diagnostic method and ratio per 1000 deliveries (27-month retrospective analysis) of HM

	Histopathology ± IHC Only	Histopathology and Adjunctive MG	Total	Ratio Per 1000 Deliveries
CM	18	0	18	1.2
PM	7	24	31	2.1
HM	25	24	49	3.3

There are 14,944 deliveries for 27 months.

Proposed reason for this higher incidence:
Some cases of PHM may have previously gone underrecognized without adjunctive immunostain and ploidy analysis

Ref: Colgan T et al. A reappraisal of the incidence of placental hydatidiform mole using selective molecular genotyping. Int J Gynecol Cancer; 2016; Vol 26 (7): 1345-1350.

Take Home points:

1. **Invasive mole is usually diagnosed following evacuation of a molar gestation**

2. **The presence of villi invading myometrium and myometrial vessels is pathognemonic for this entity**

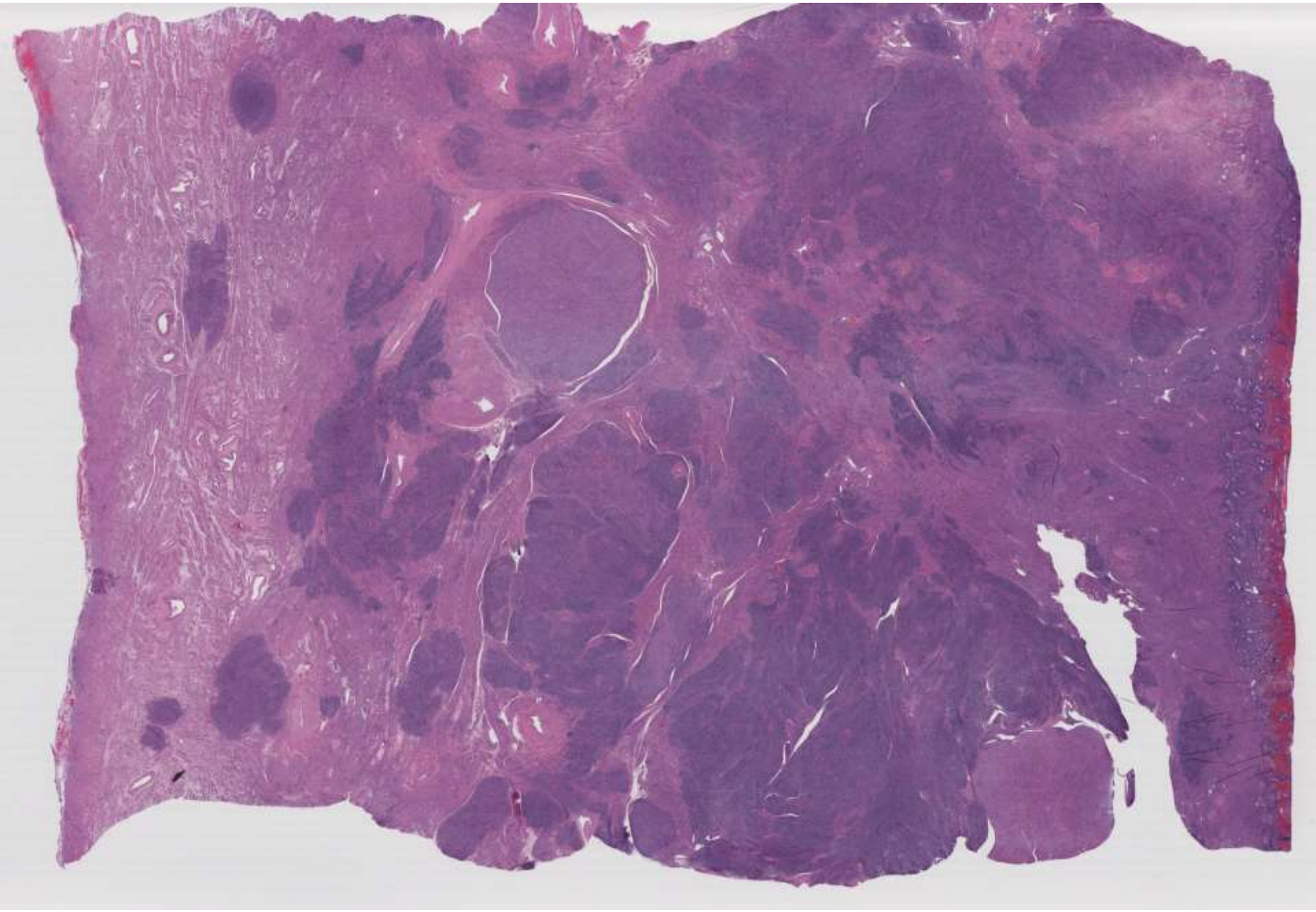
3. **The villi may be sparse**

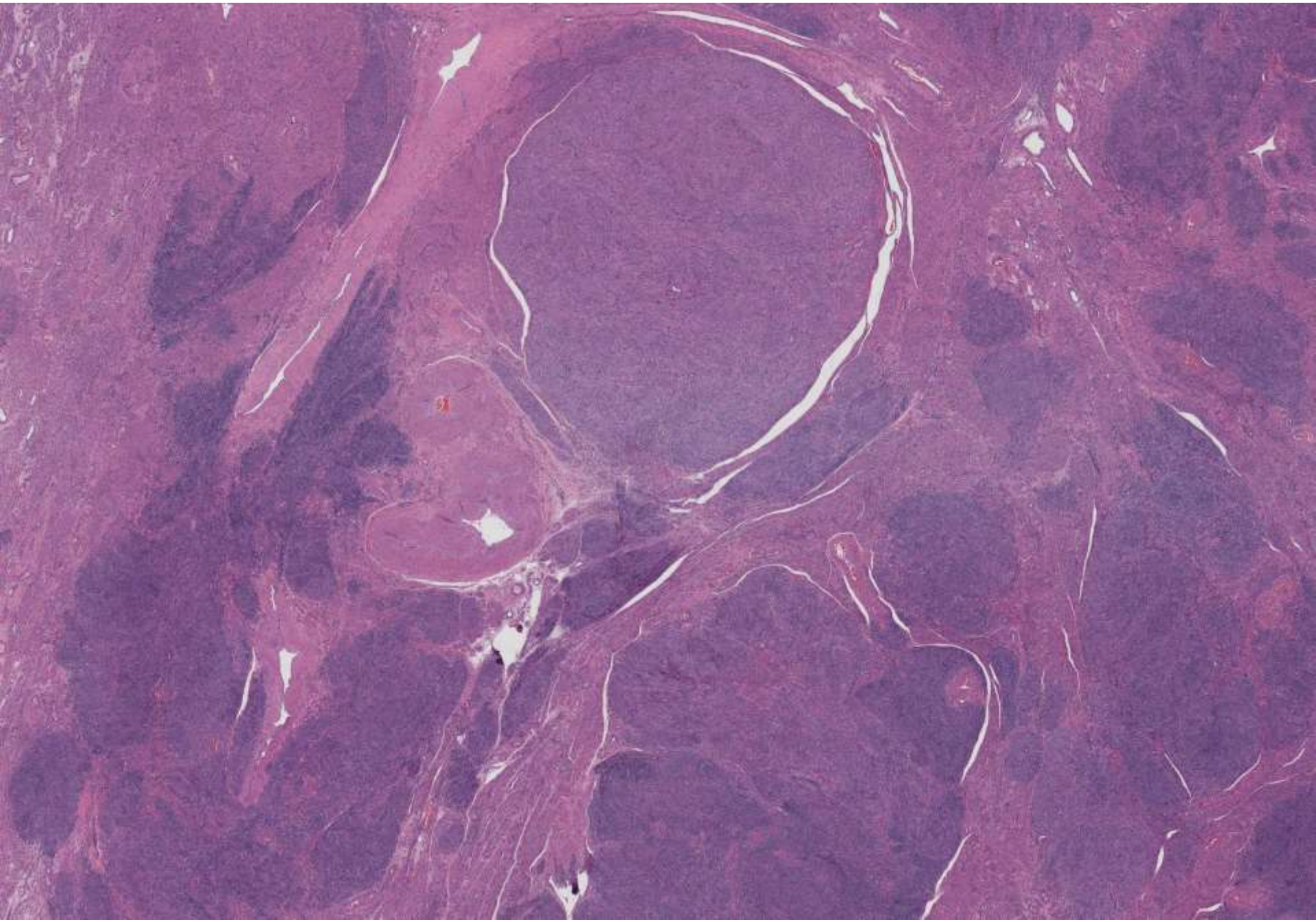
4. **The highest reported incidence of molar gestation to date has been recently reported in Toronto…this is likely due to the increased detection of PHM by adjunctive immunohistochemistry and molecular analysis of abortus specimens**

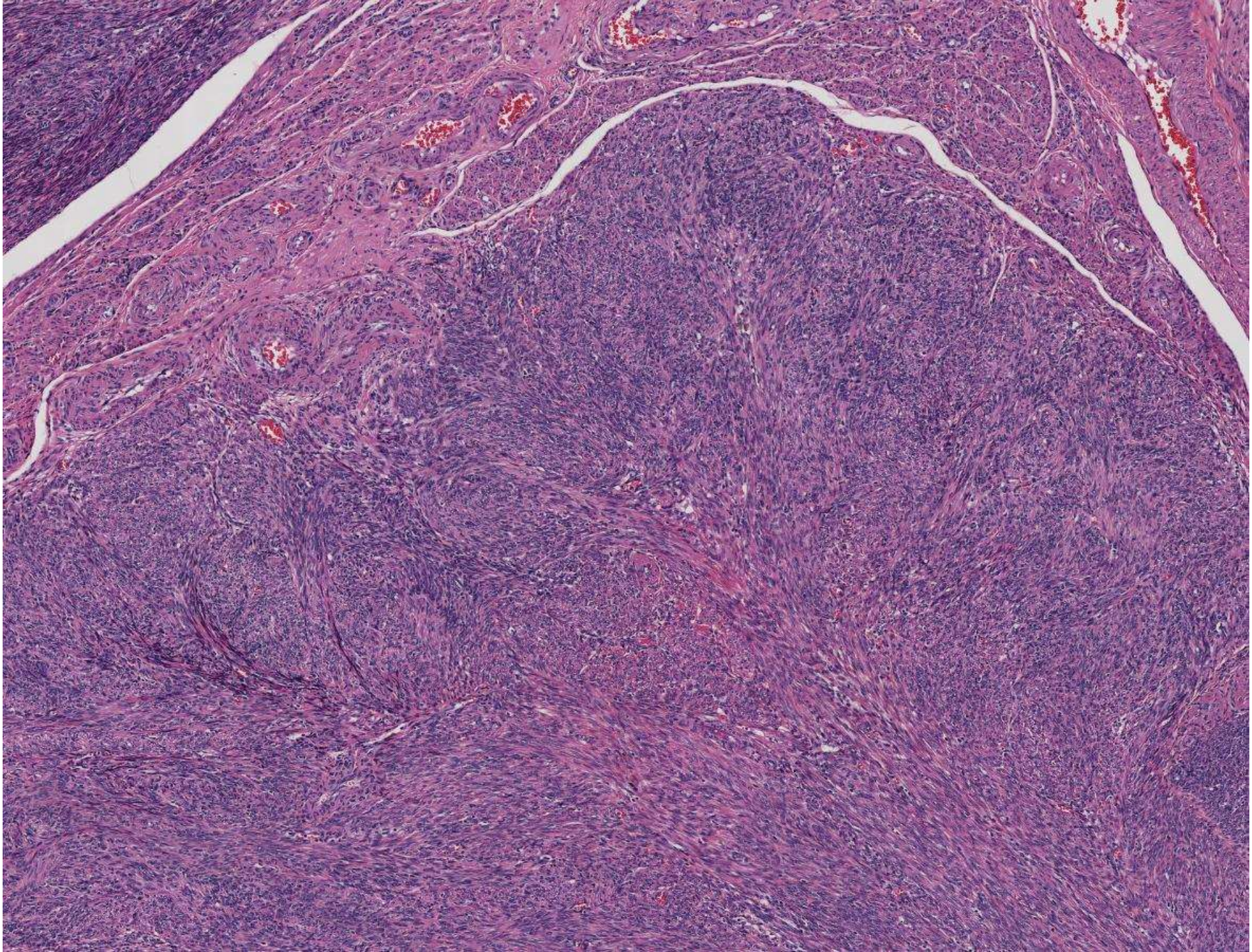
SB 6096 (scanned slide)

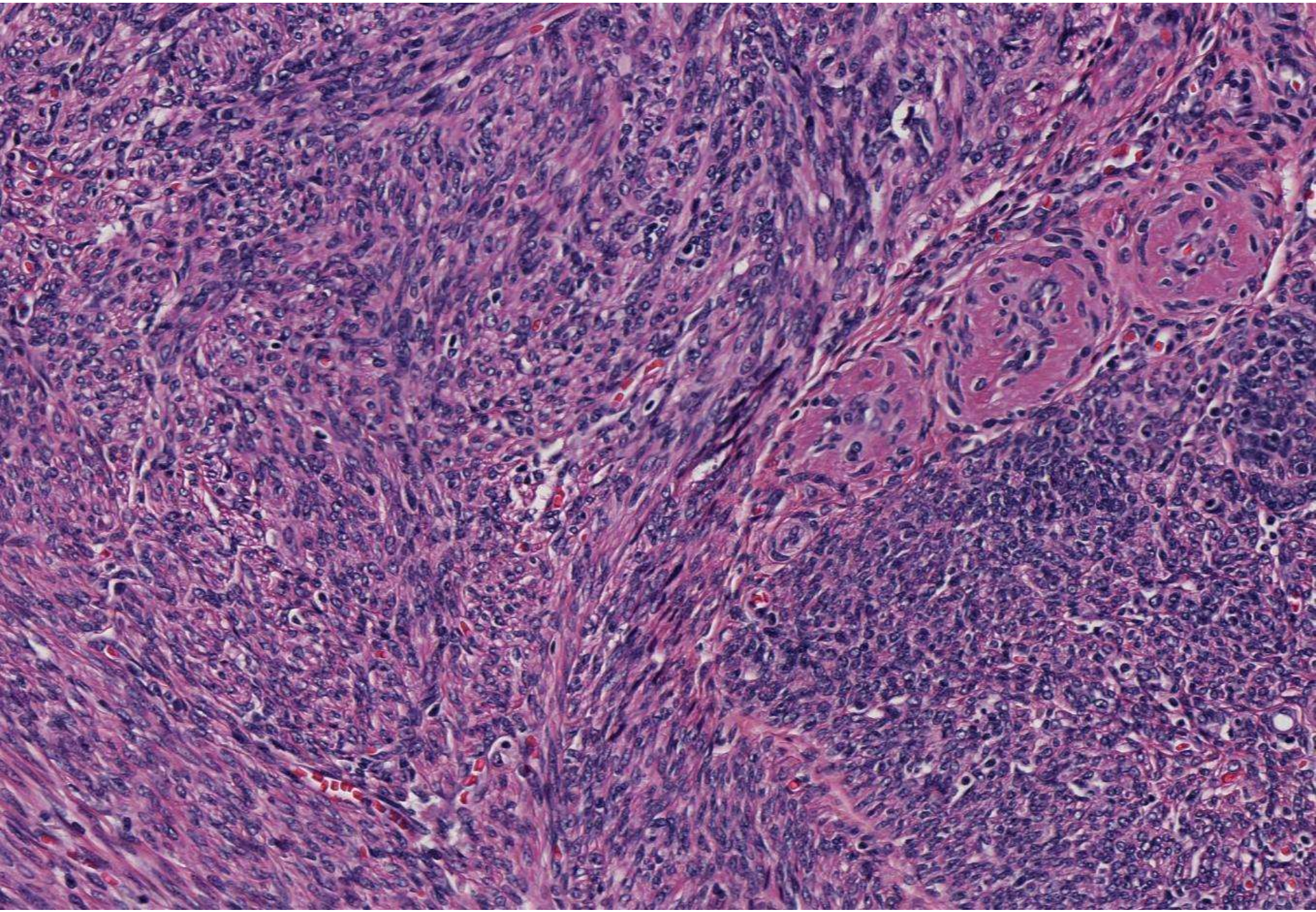
Malti Kshirsagar; El Camino Hospital

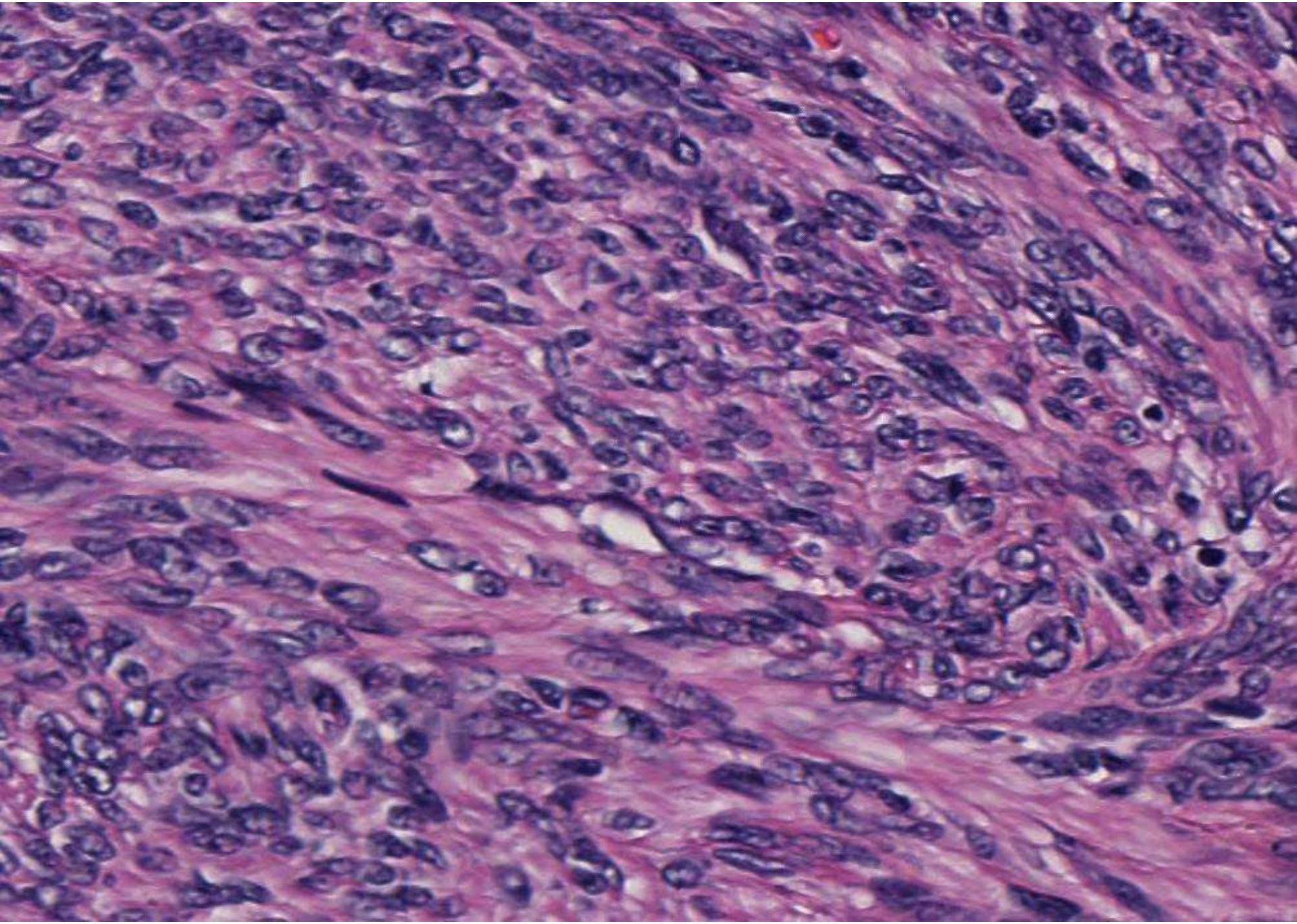
40-year-old female with TAH/BSO for uterine fibroids.

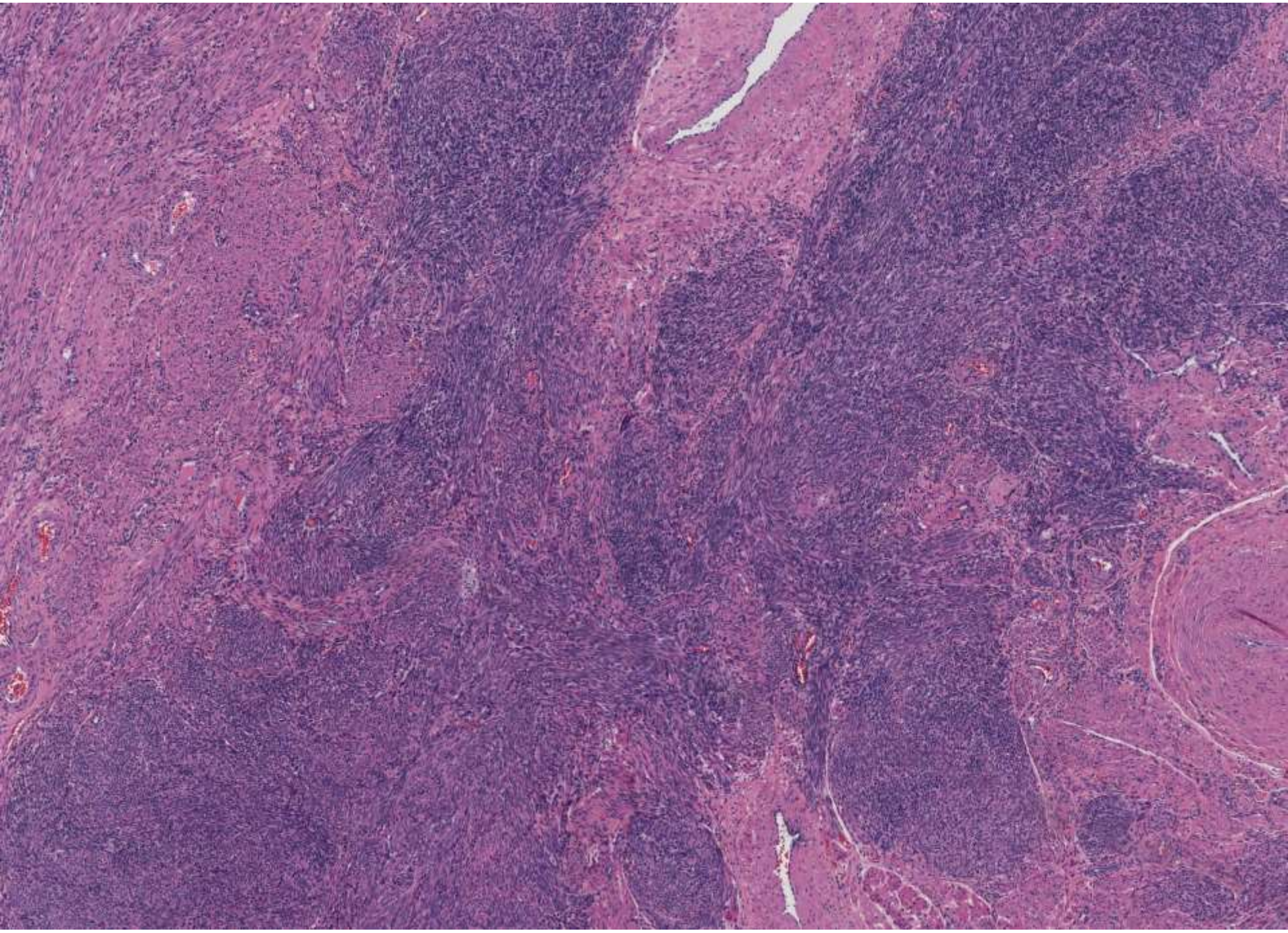


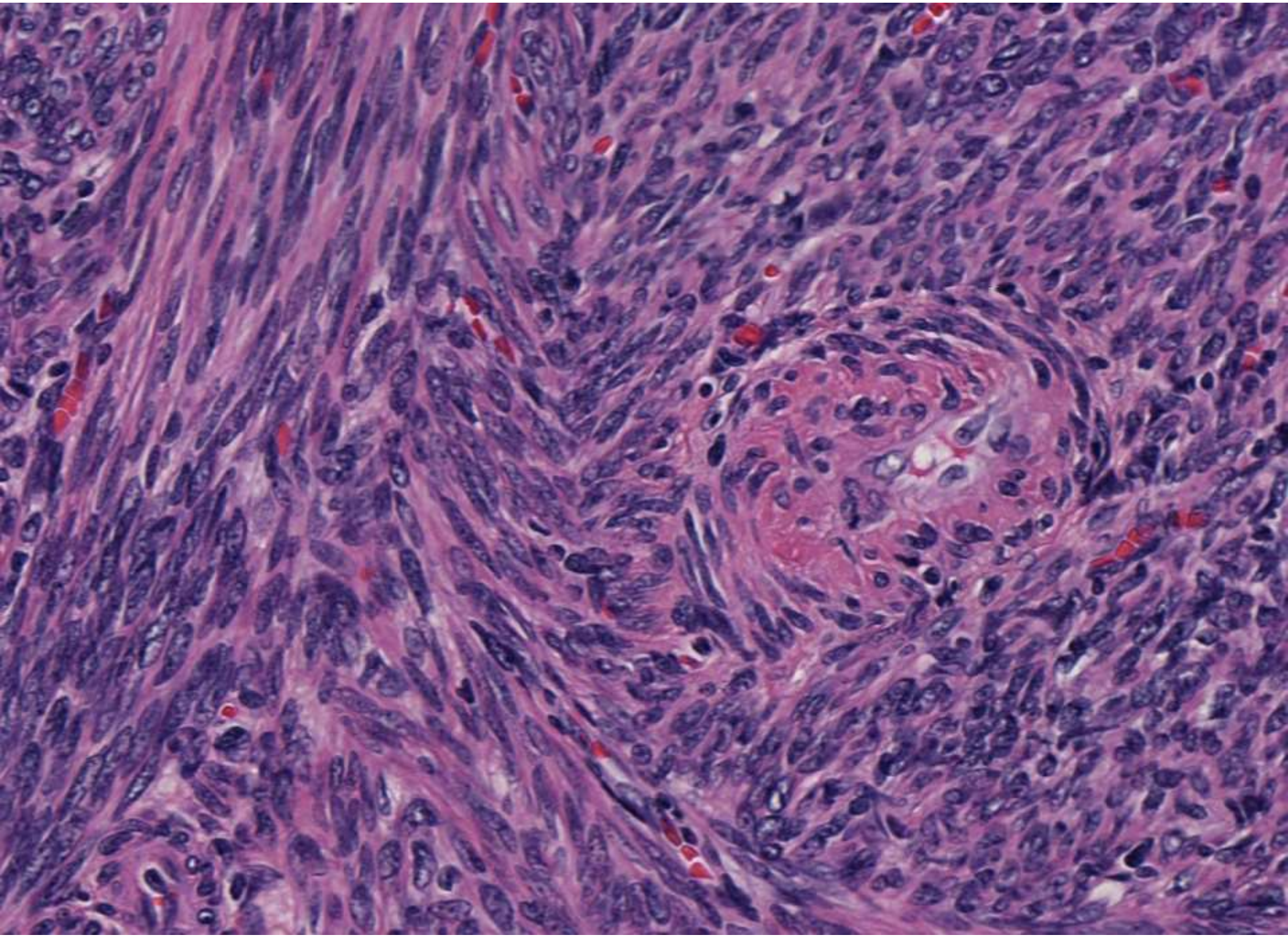








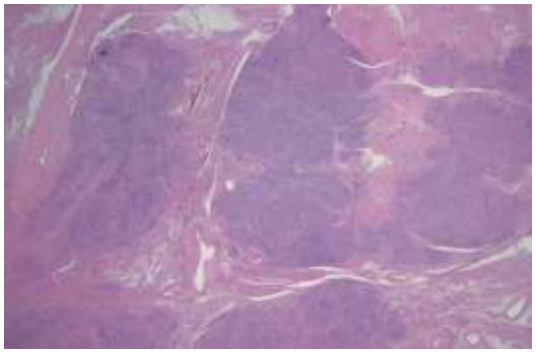




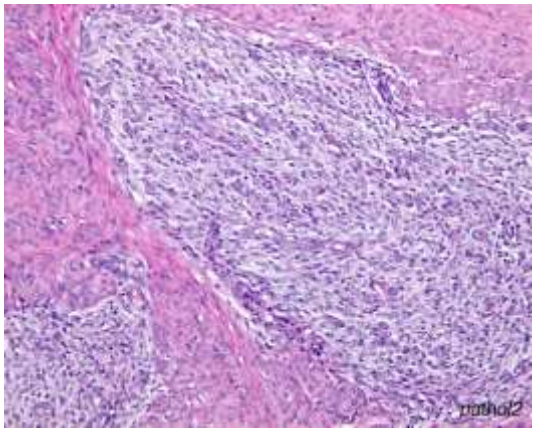
DIAGNOSIS?

Primary differential diagnosis:

1. **Diffuse leiomyomatosis of the uterus**



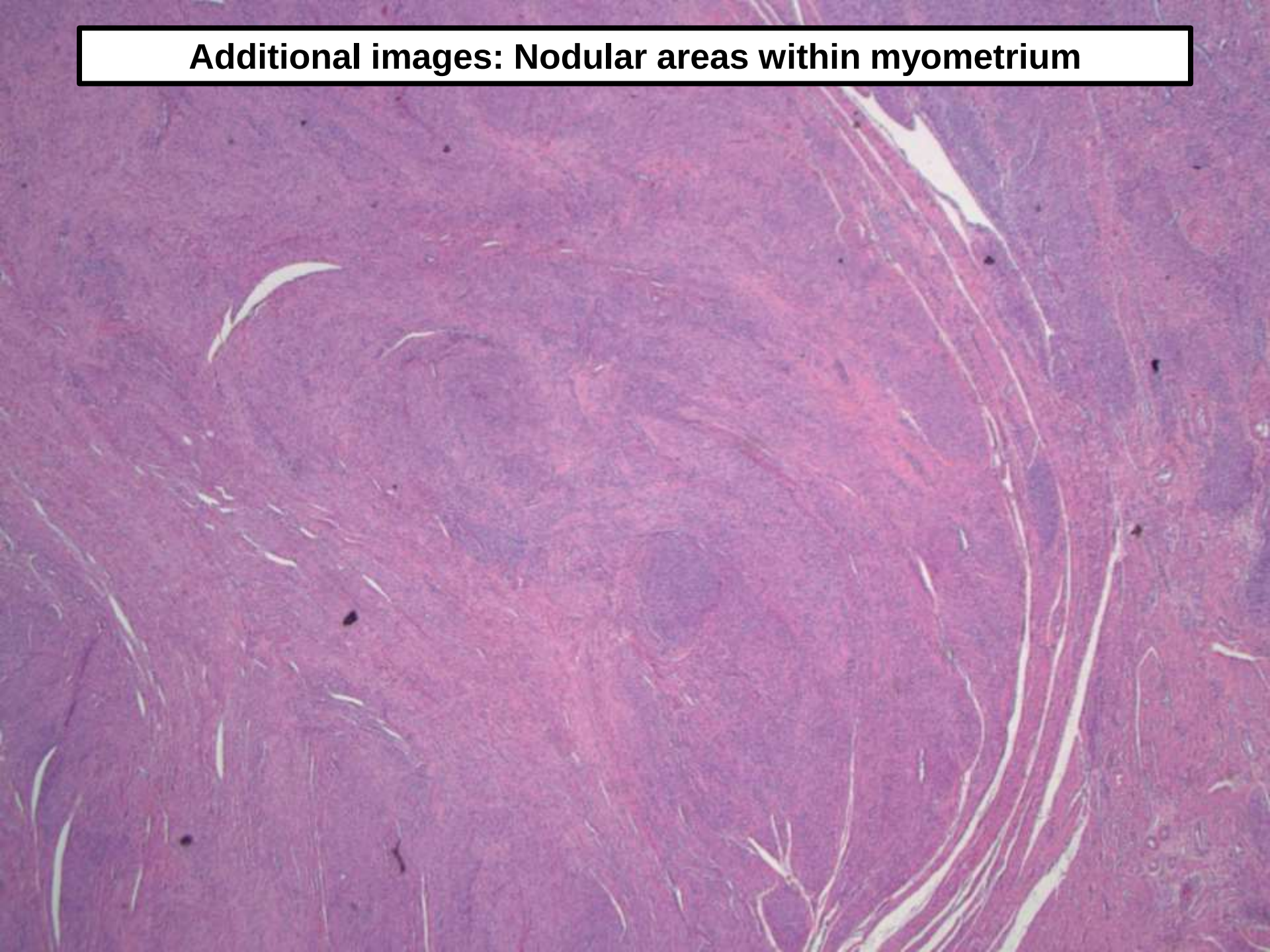
2. **Low grade endometrial stromal sarcoma**



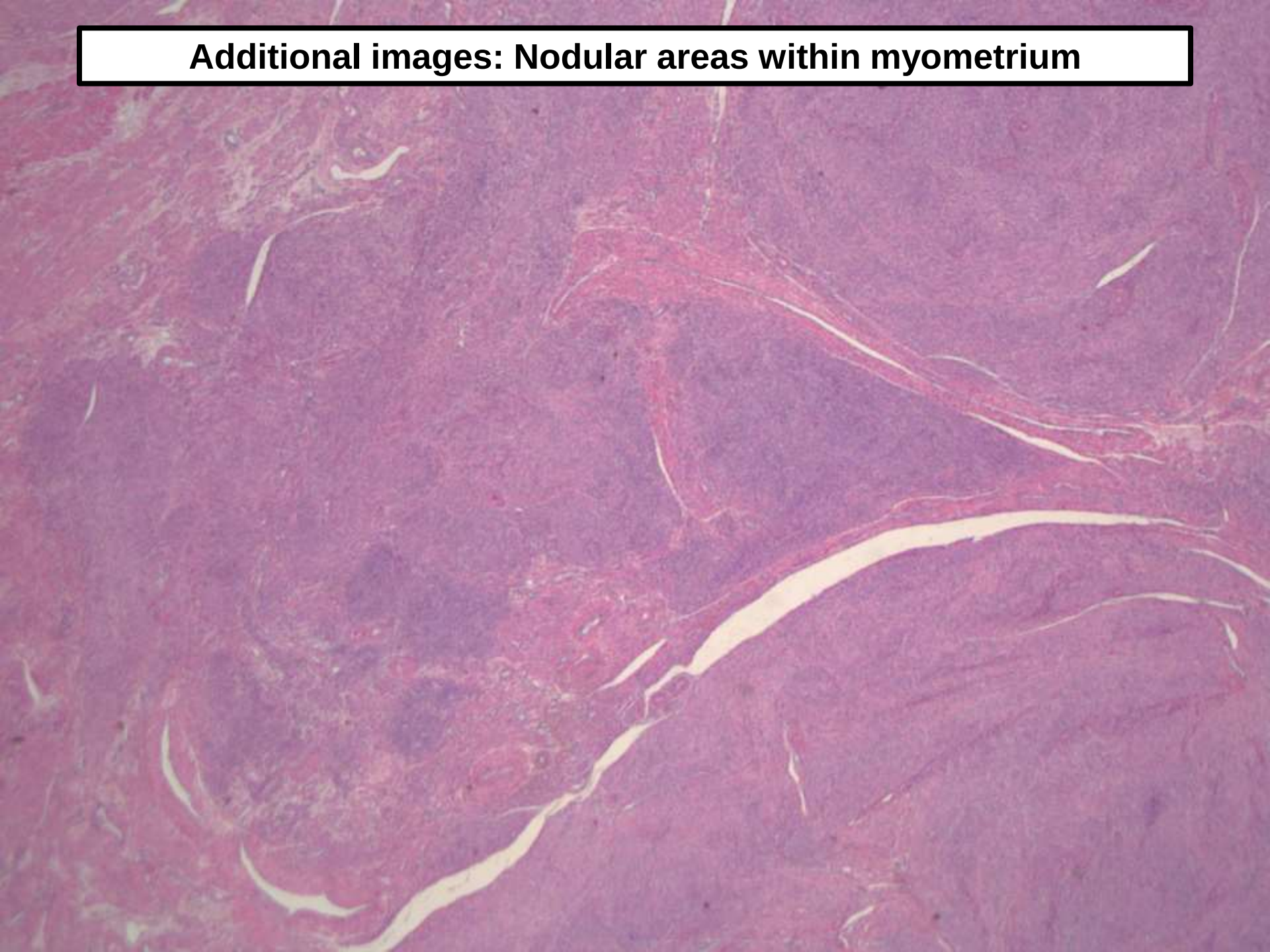
3. **Intervenous (intravascular) leiomyomatosis**

Images 2-3: www. pathology outlines. com

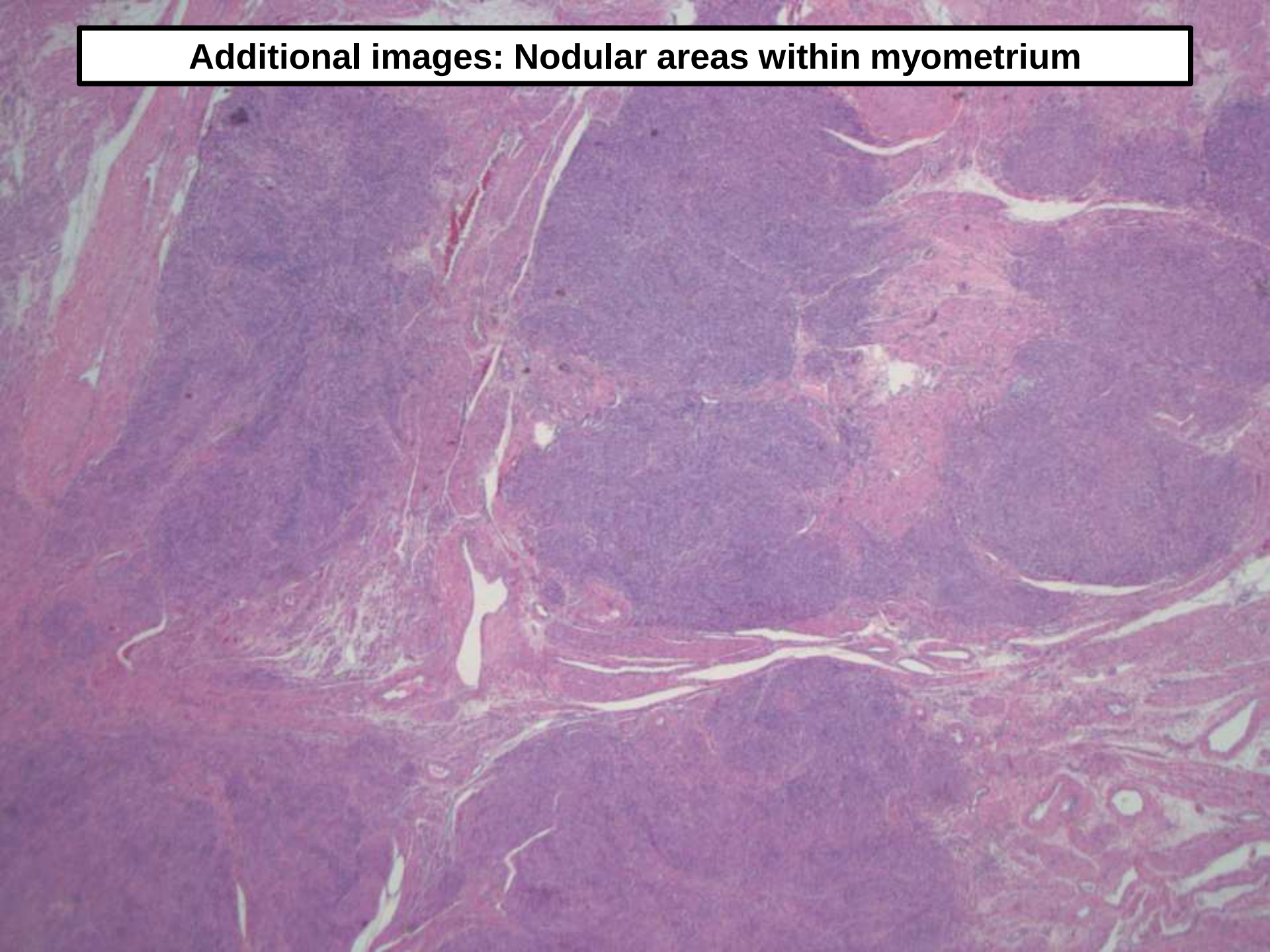
Additional images: Nodular areas within myometrium



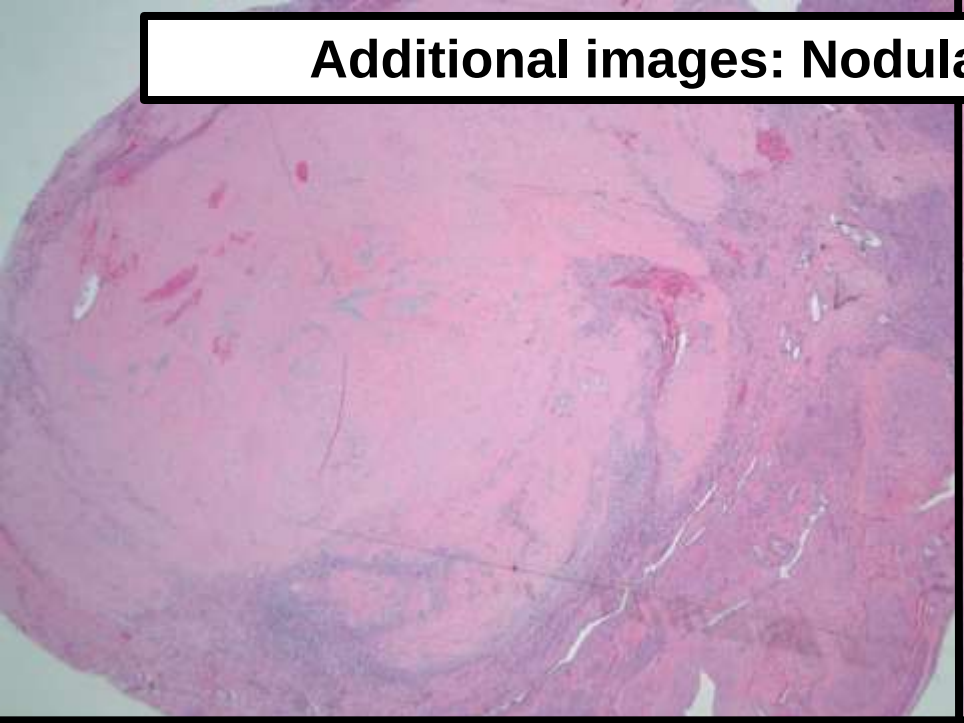
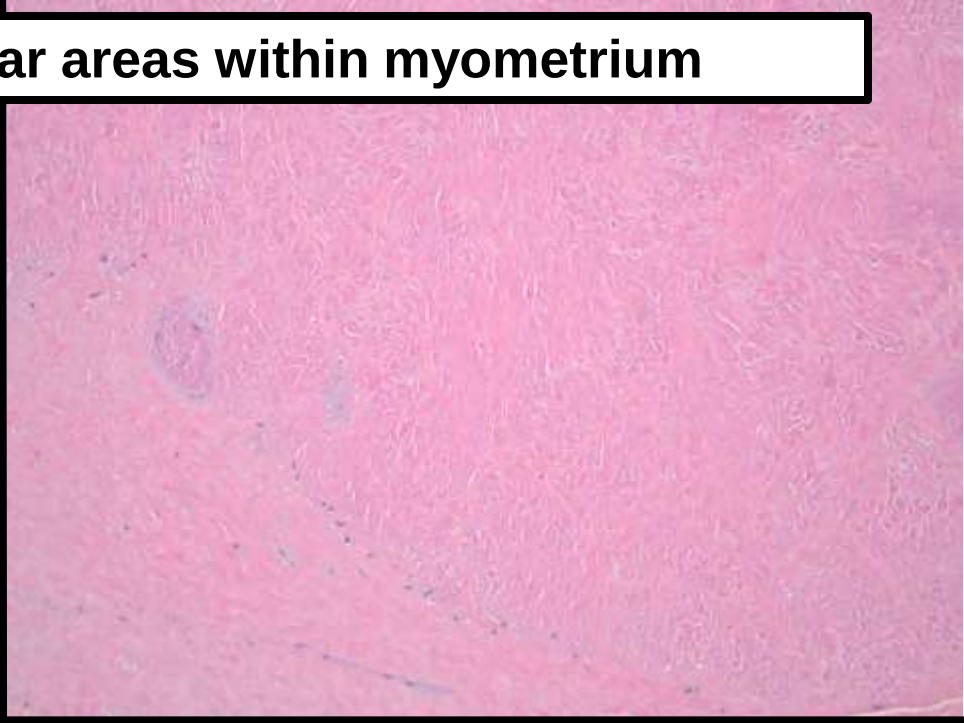
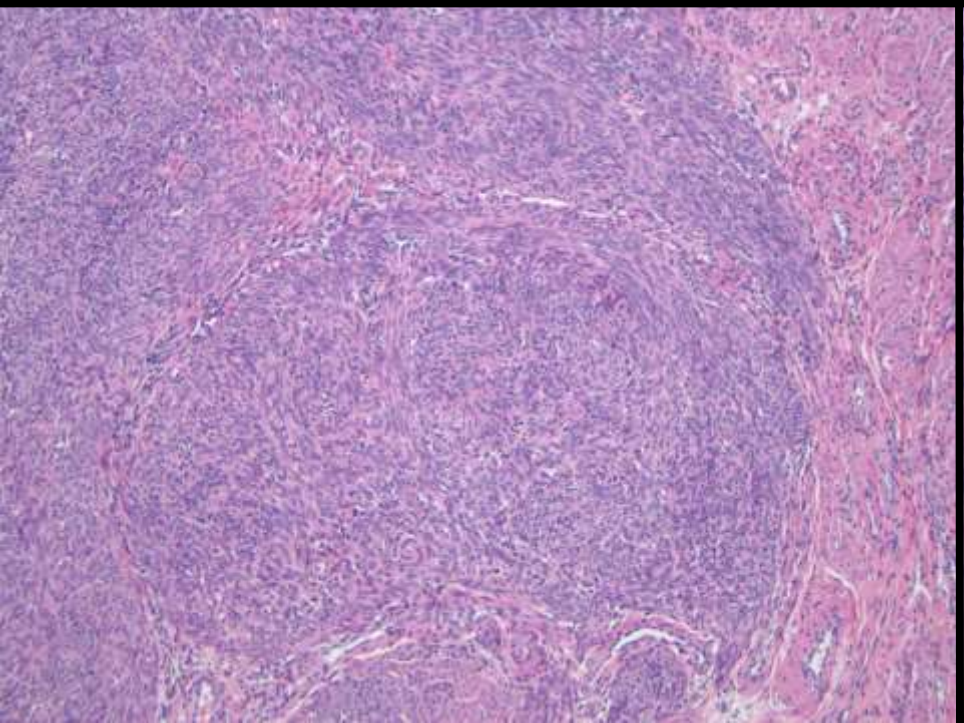
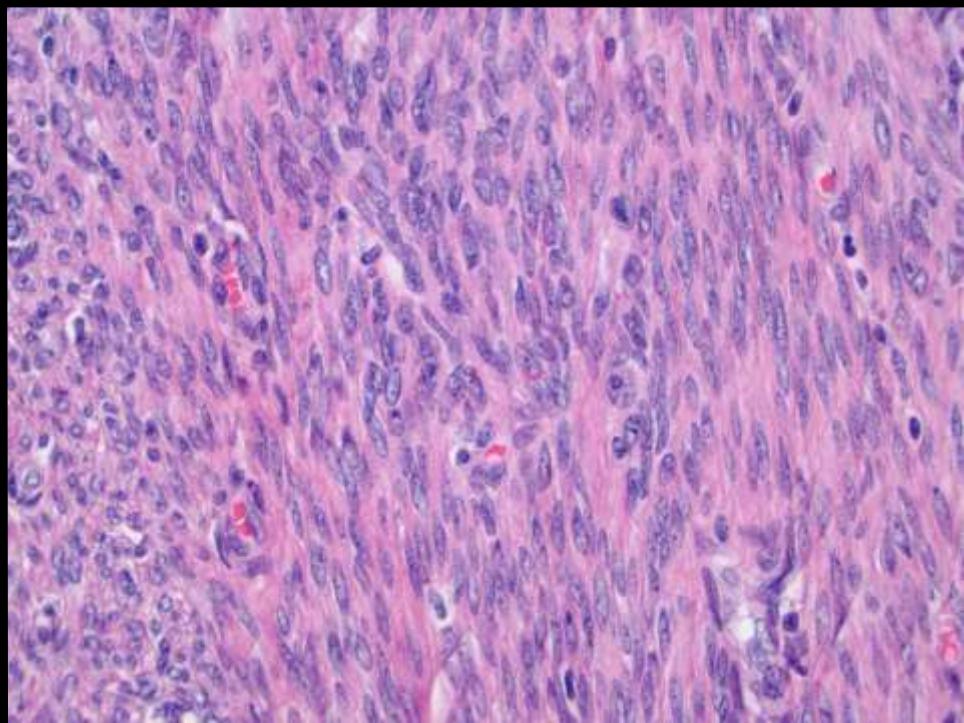
Additional images: Nodular areas within myometrium

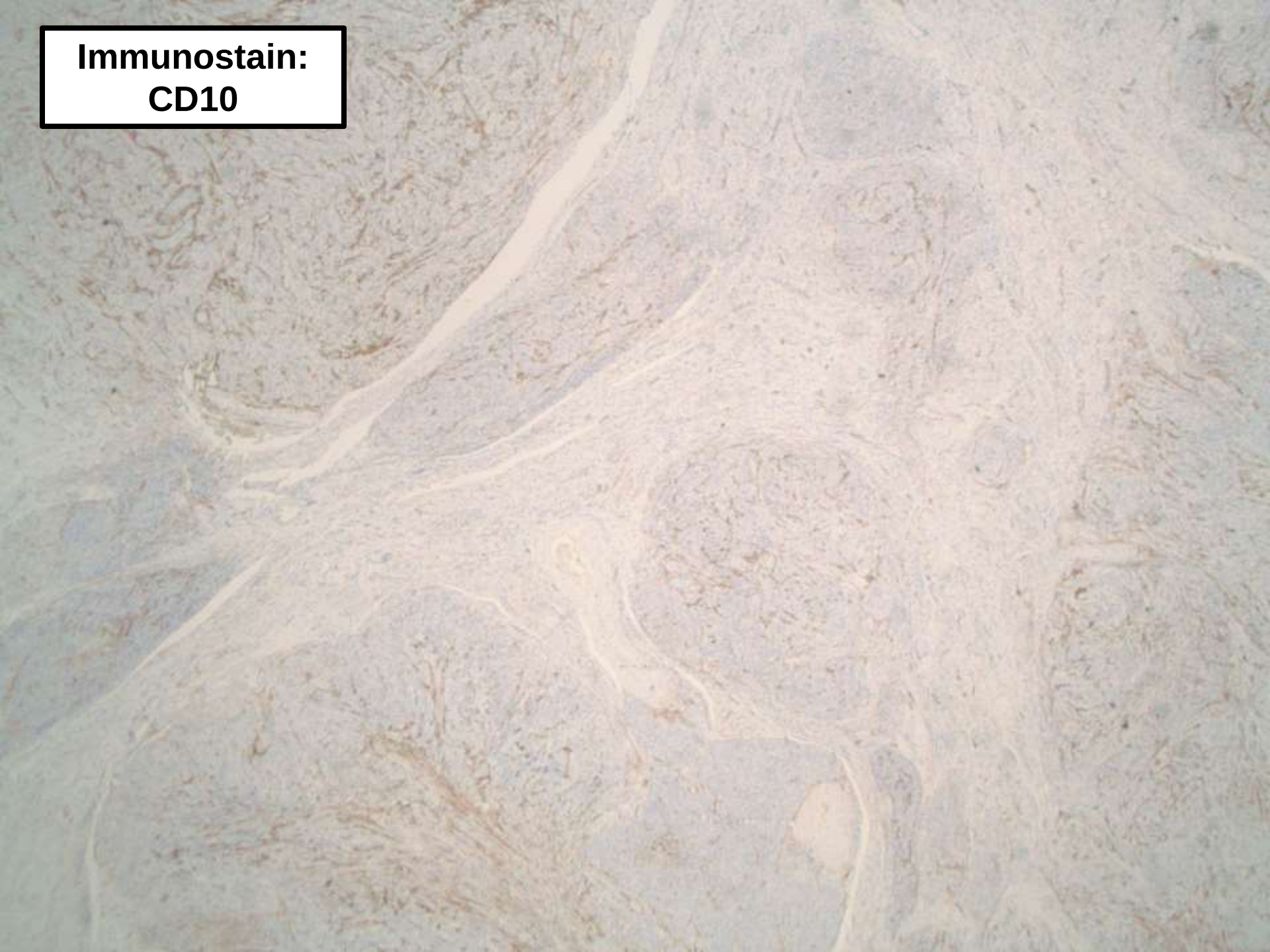


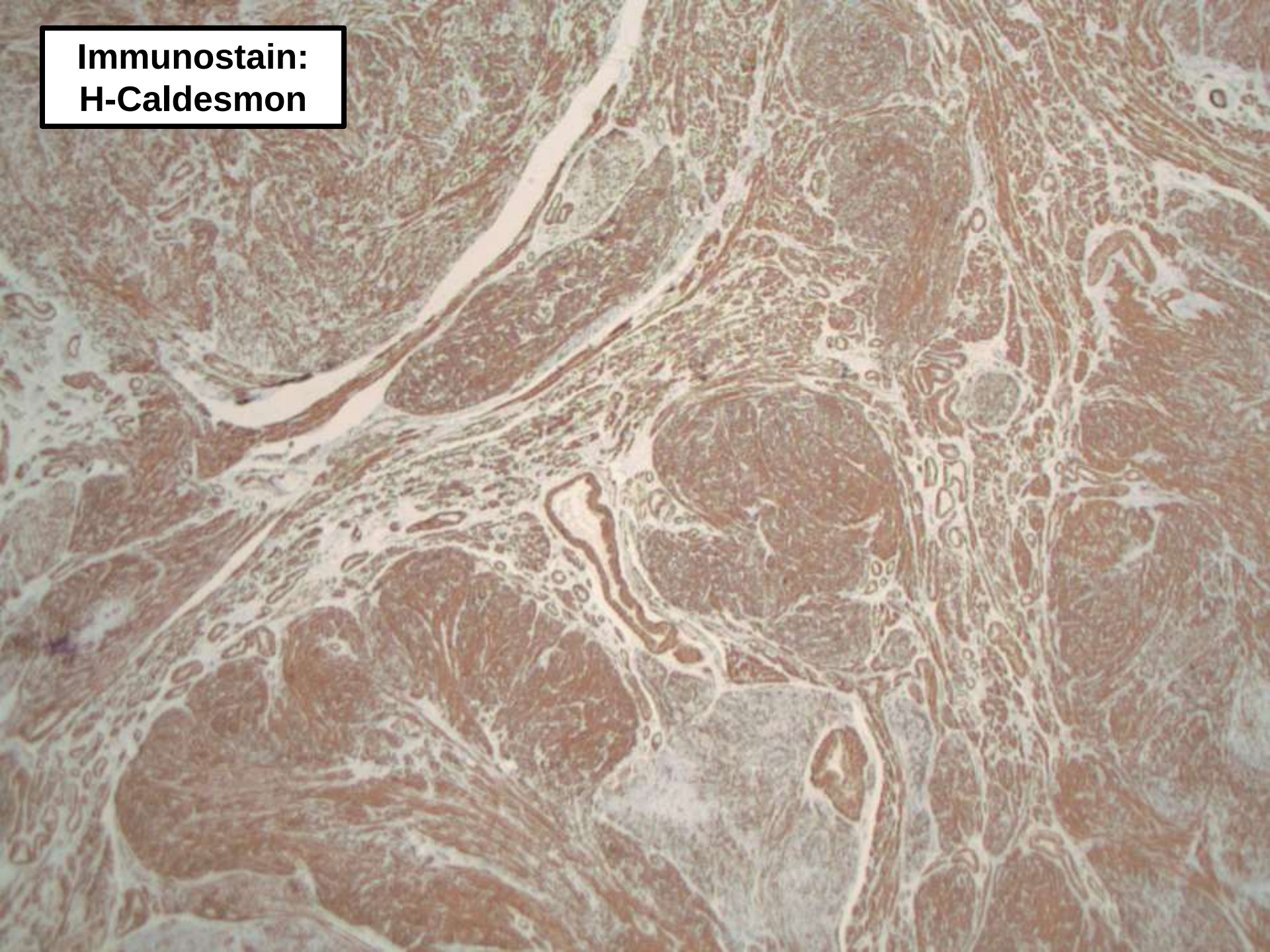
Additional images: Nodular areas within myometrium

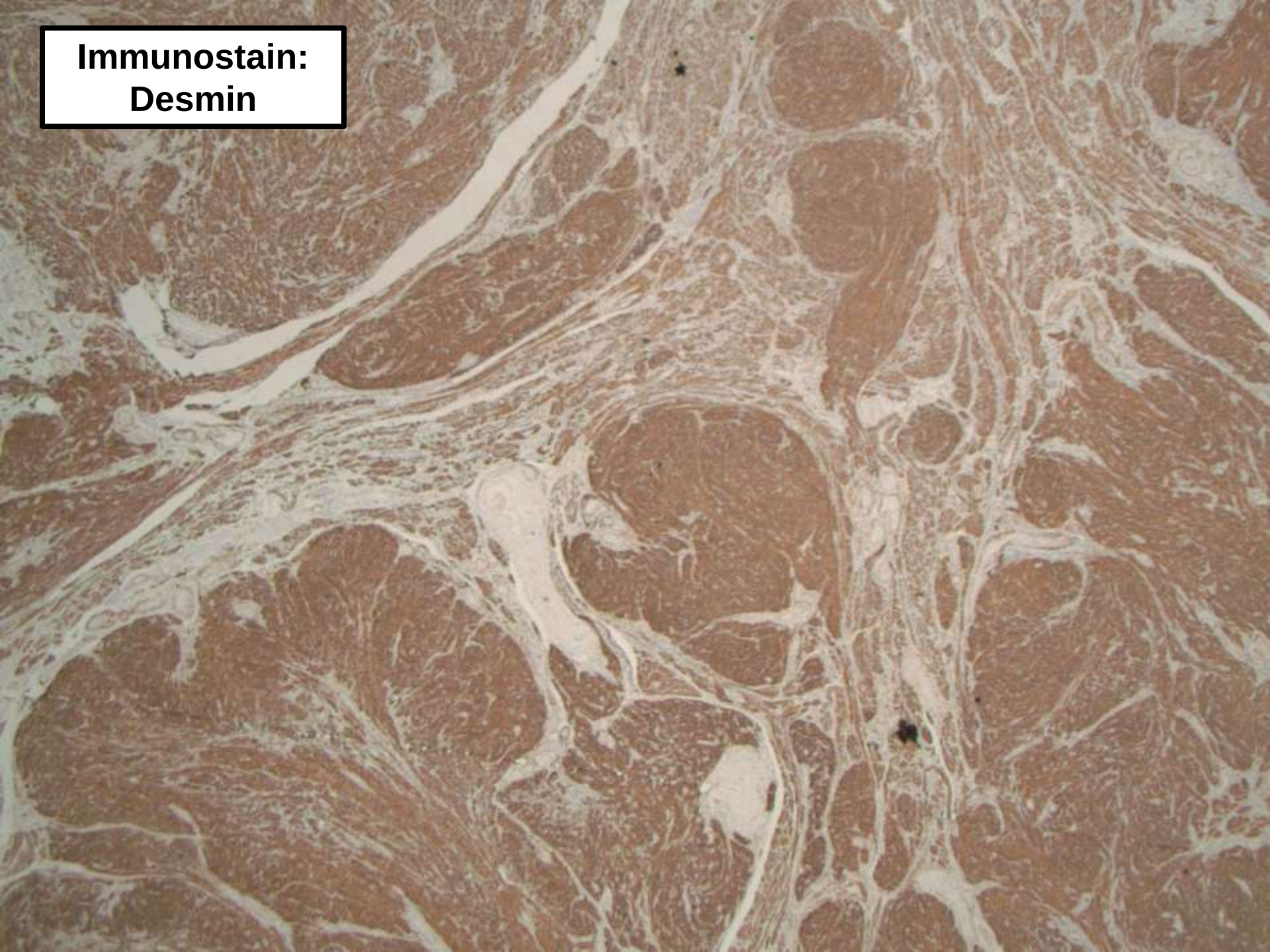


Additional images: Nodular areas within myometrium


Immunostain:
CD10


Immunostain:
H-Caldesmon


Immunostain:
Desmin

Summary of findings:

1. Numerous poorly circumscribed smooth muscle proliferations that are variable in appearance and cellularity
2. Some nodules appear infarcted with focal calcification
3. No intravenous growth identified

DIAGNOSIS: DIFFUSE LEIOMYOMATOSIS

DIFFUSE LEIOMYOMATOSIS OF THE UTERUS:

1. Described by Clement and Young in 1987 – 4 cases
   - The uterus typically appears symmetrically enlarged due to almost complete replacement of the myometrium by innumerable confluent smooth muscle nodules

2. Most nodules are less than 1 cm.

3. Uterine weight increases with age and increasing parity; uterine weight decreases after menopause.

4. It is important to exclude an endometrial stromal neoplasm.

5. This is a RARE, benign condition.

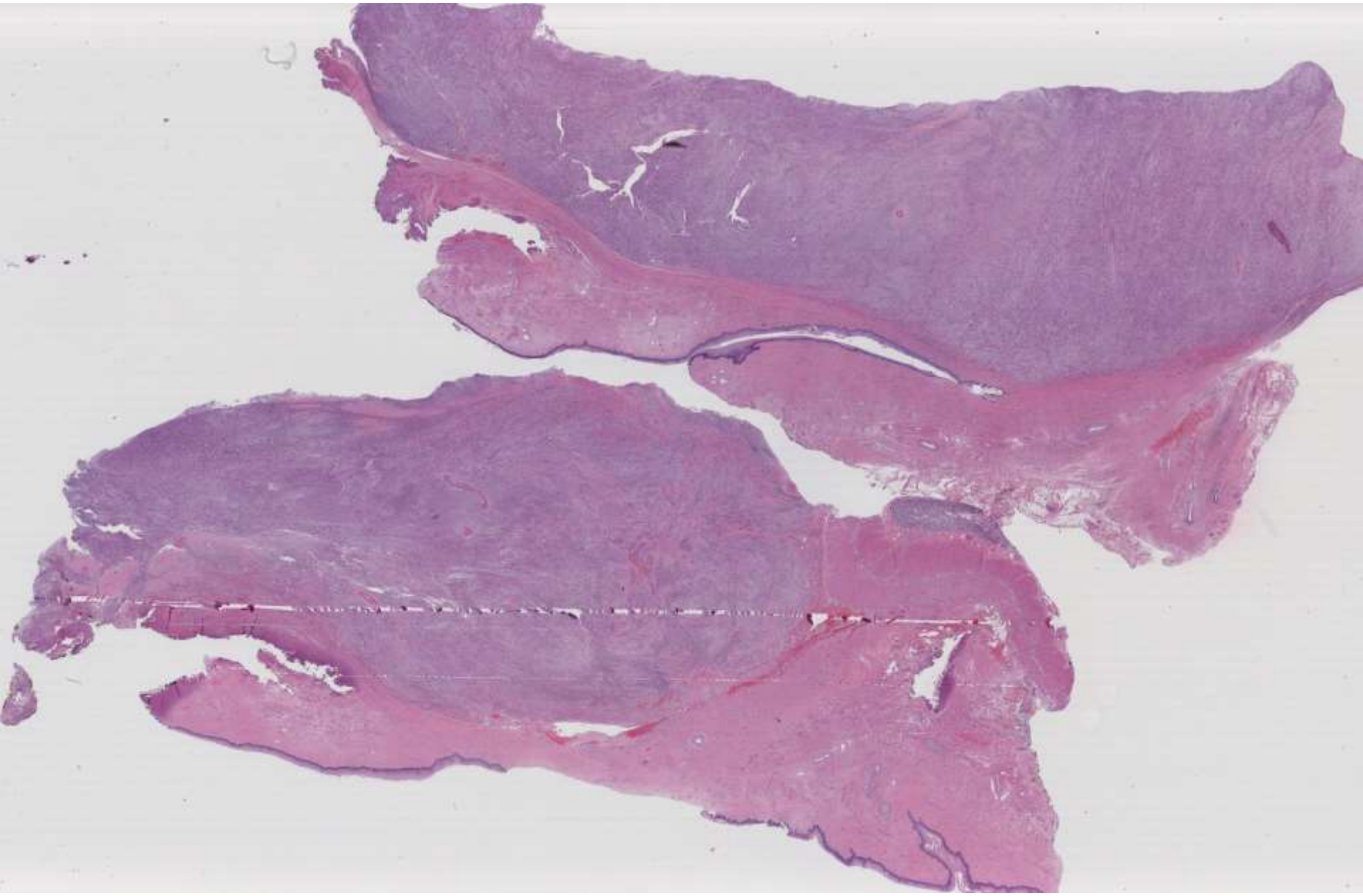
Ref:
Clement PB, Young RH. Diffuse leiomyomatosis of the uterus: a report of 4 cases. Int J Gynecol Pathol. 1987; 6(4): 322-30.

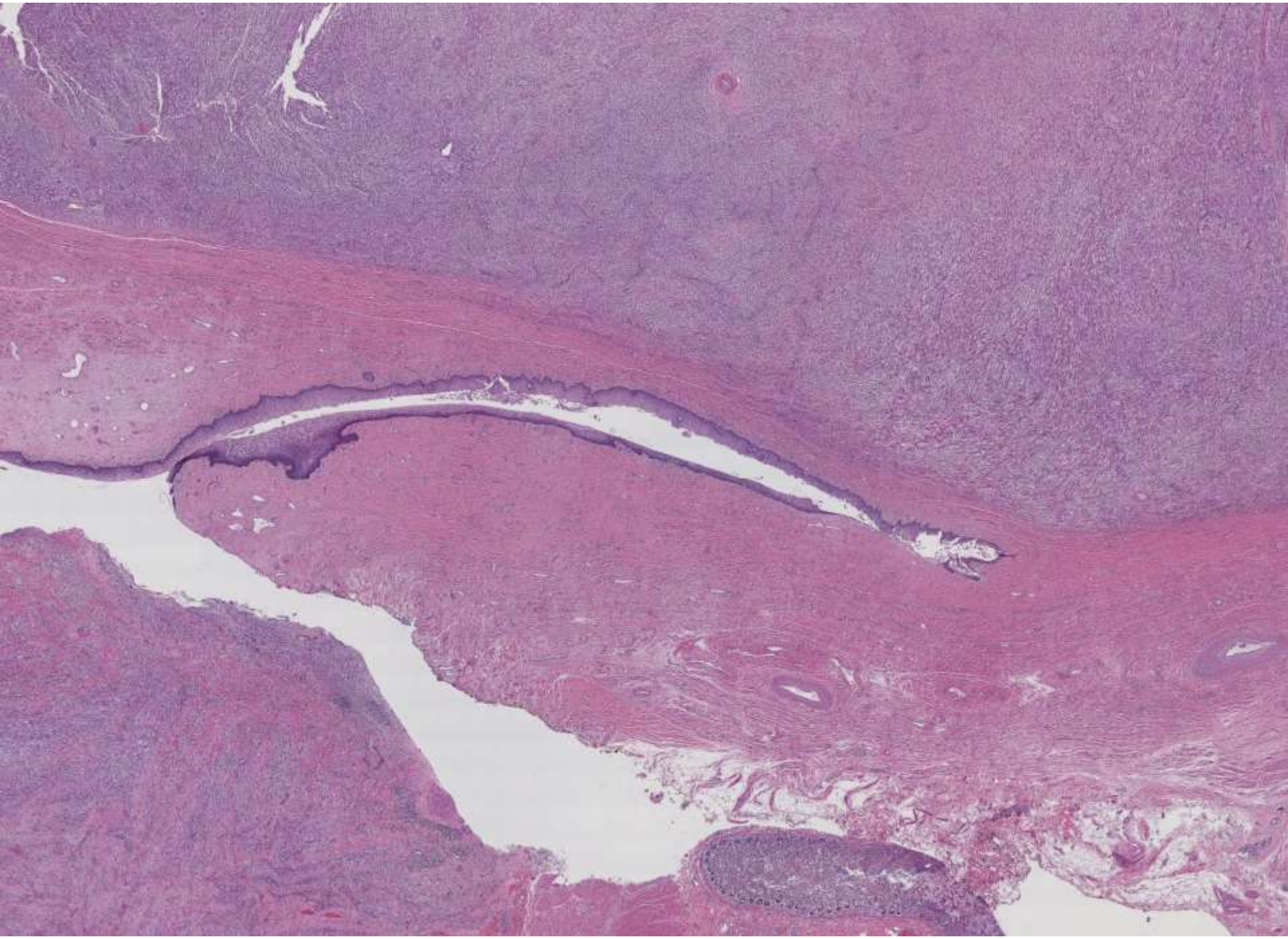
Blaustein's Pathology of the Female Genital Tract, 6th Edition. Editors: Kurman, RJ, Ellenson LH, Ronnett, BM. 2011; p. 468

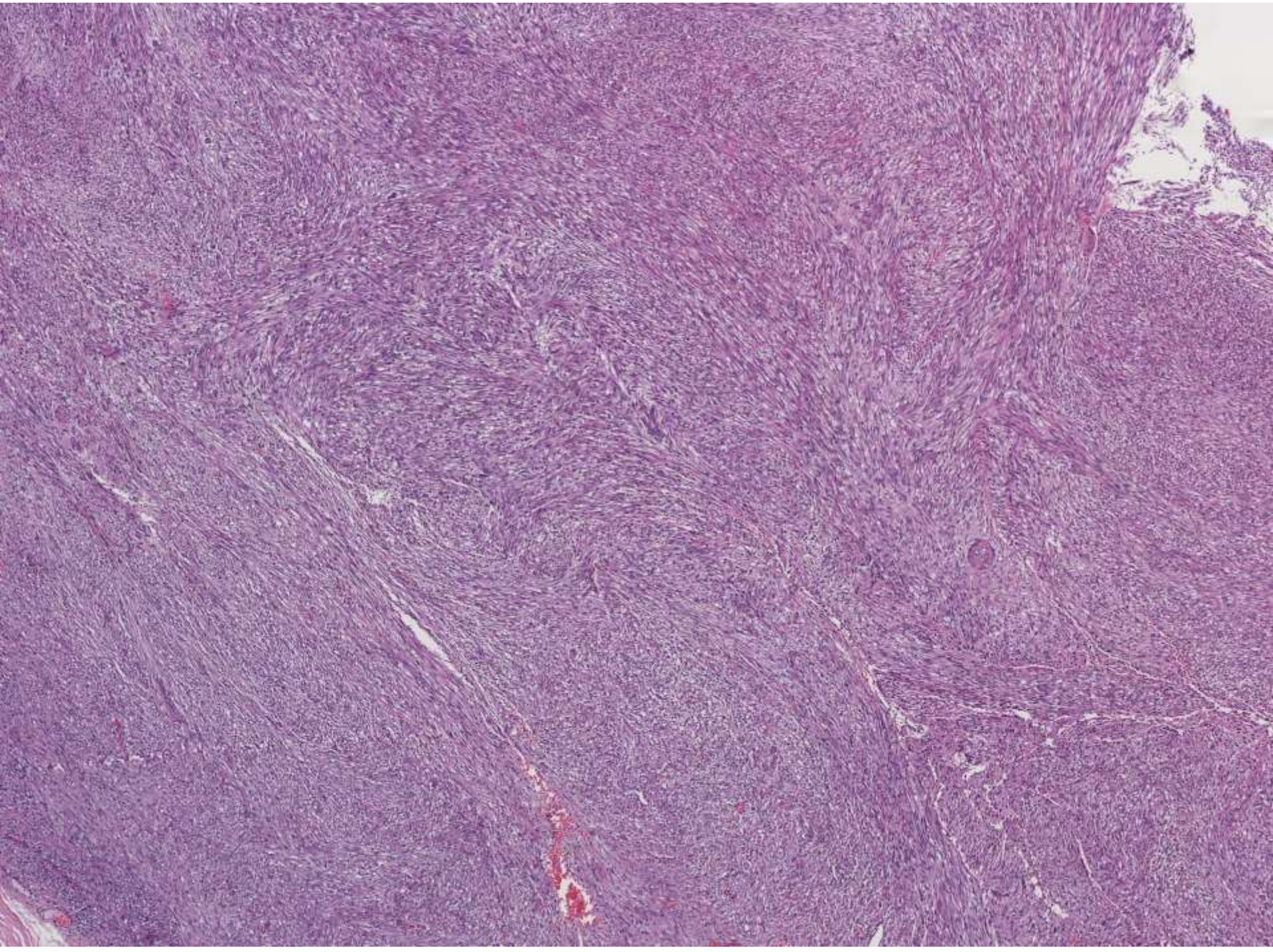
SB 6097 (scanned slide)

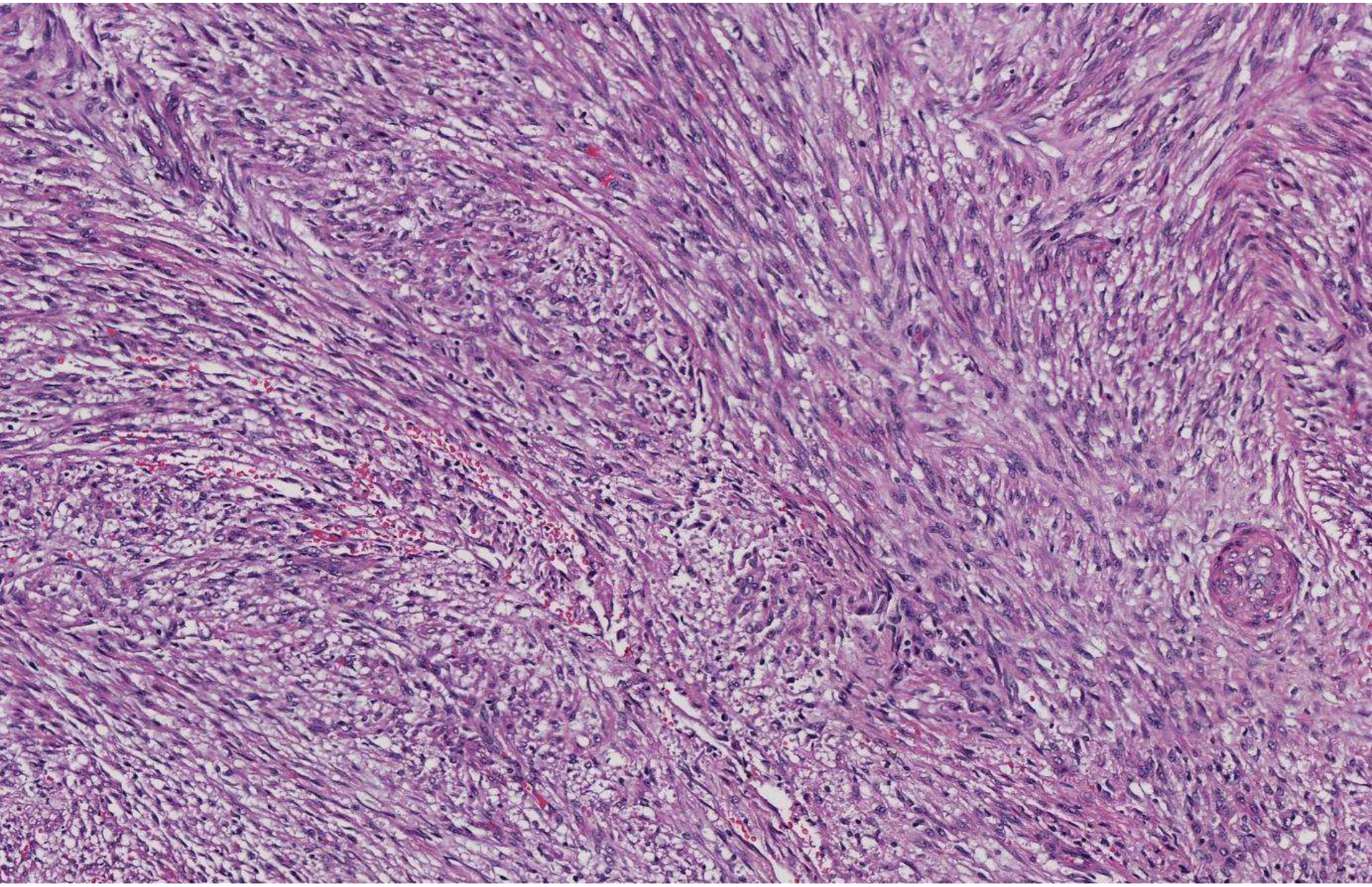
Ankur Sangoi; El Camino Hospital

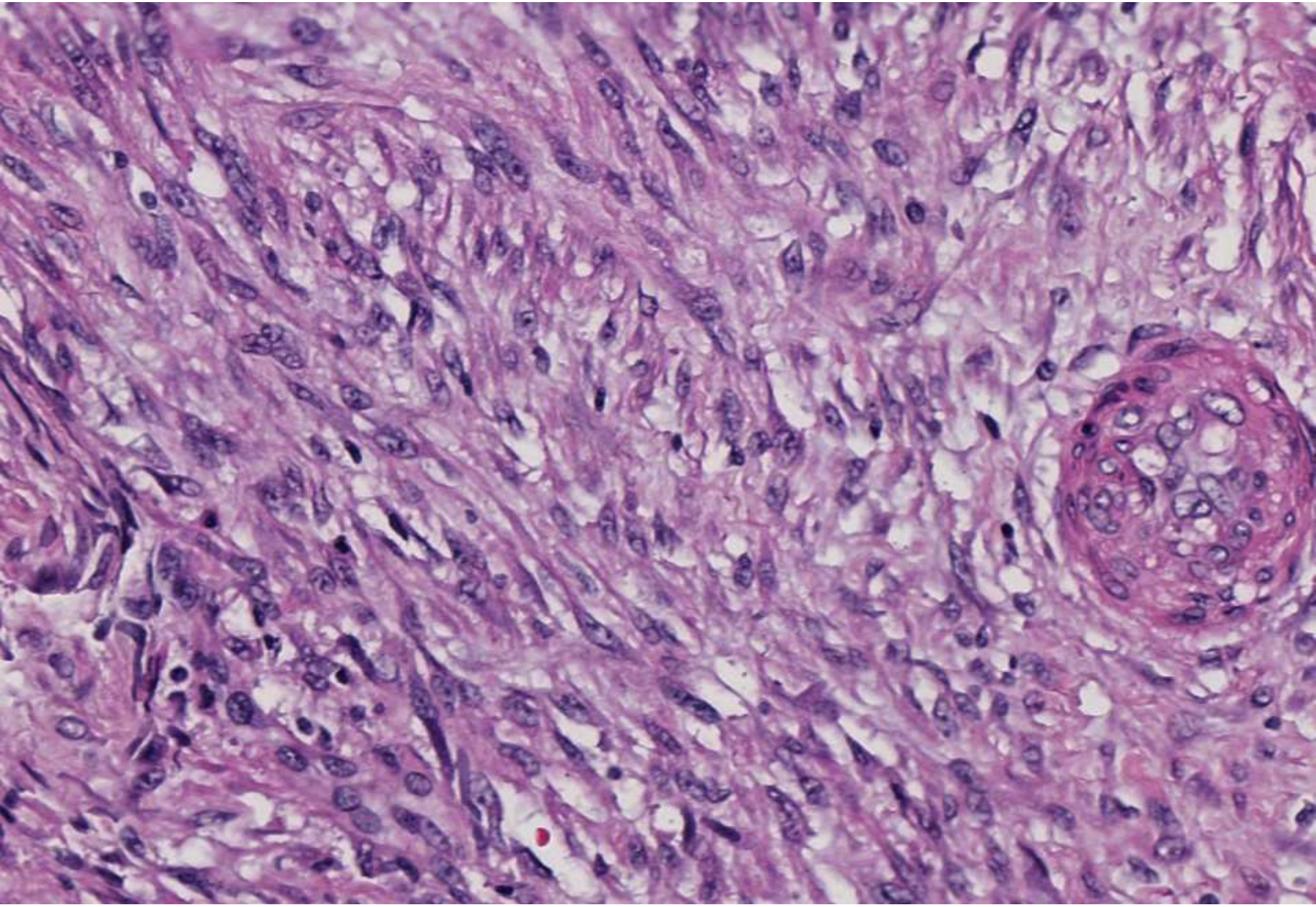
55-year-old female with pelvic/rectosigmoid/vaginal/abdominal wall tumor debulking. One year ago she was diagnosed with a uterine STUMP on hysterectomy.

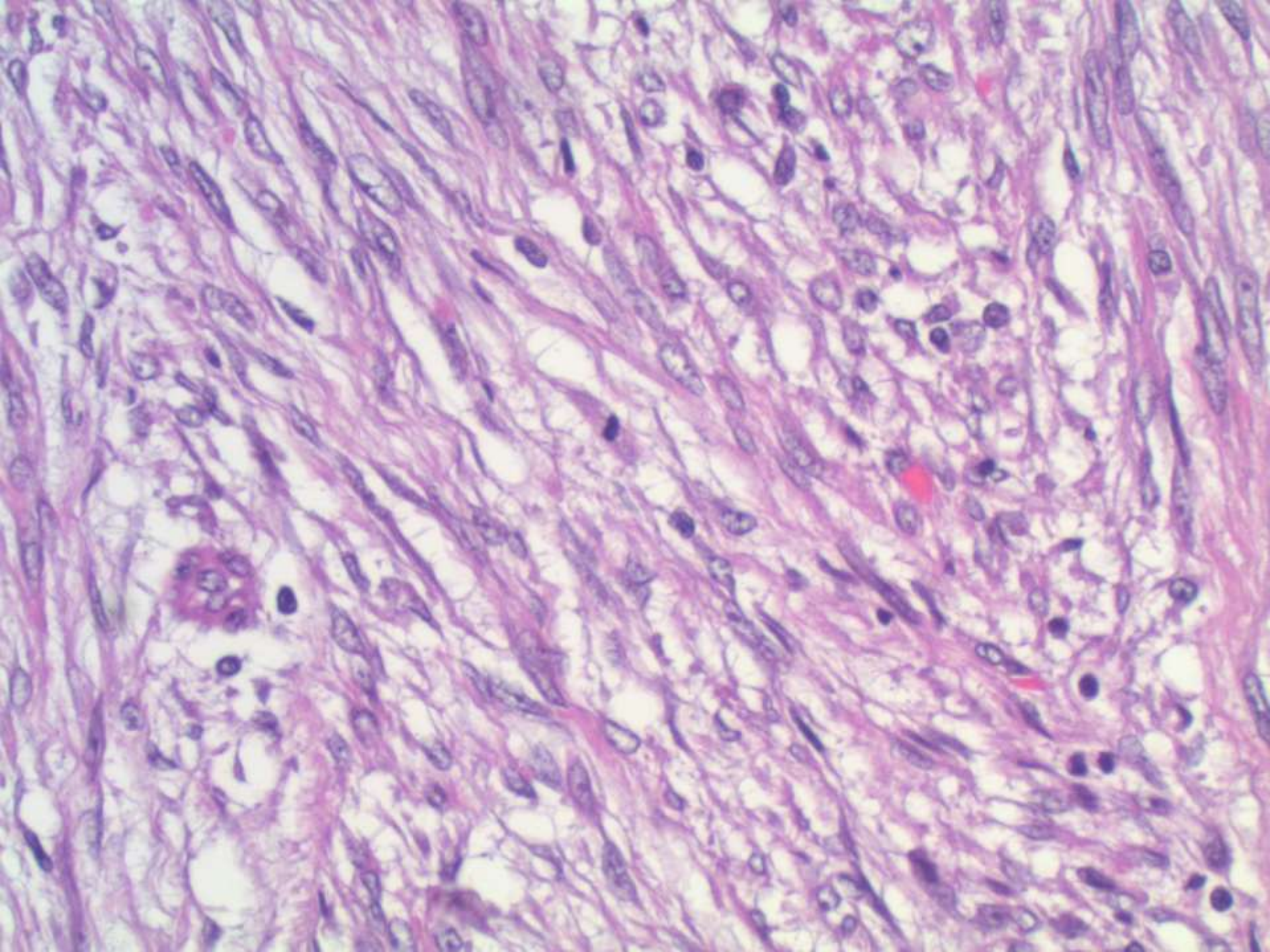


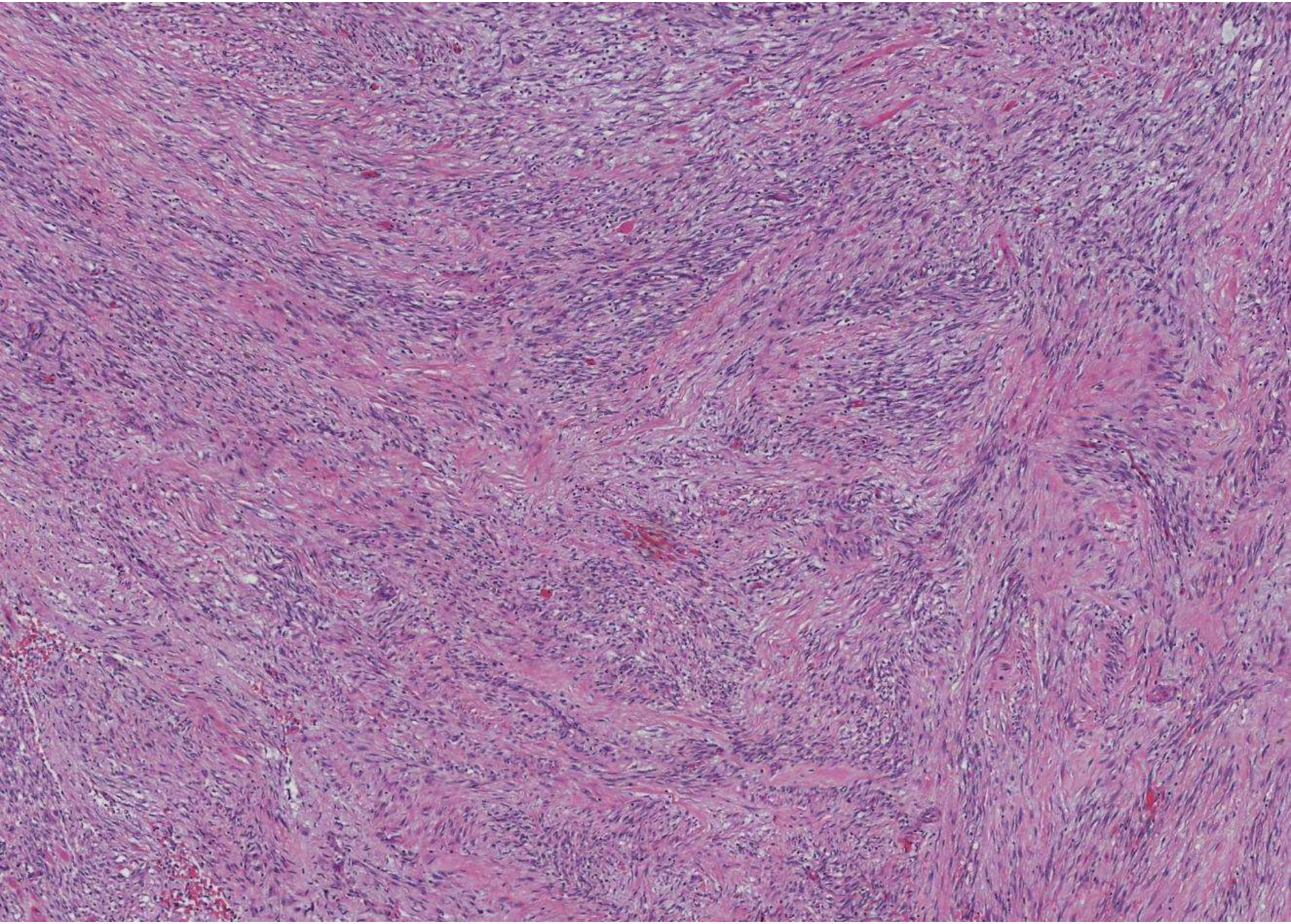


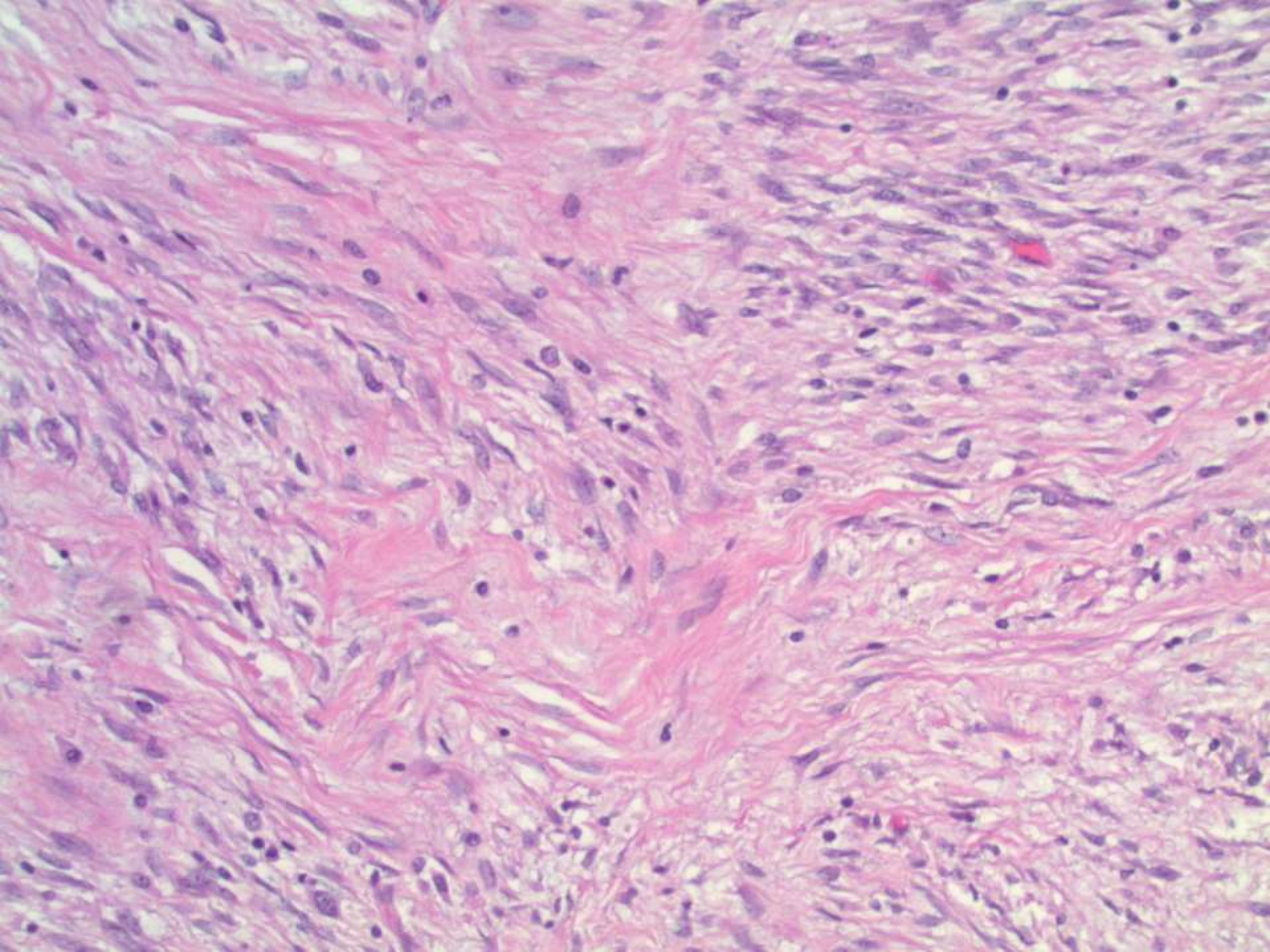












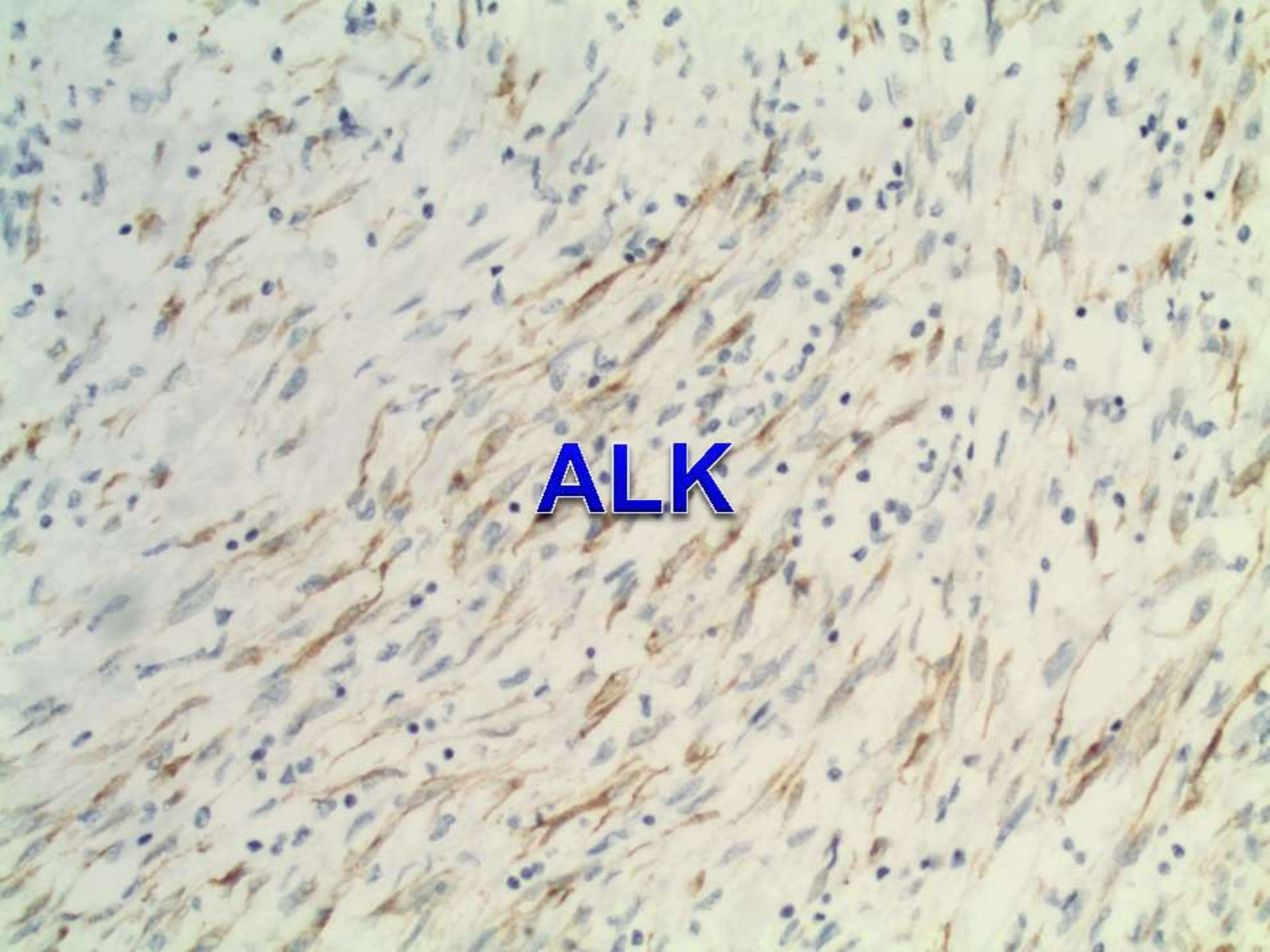
DIAGNOSIS?


Everyone has a backstory.

2013 Hysterectomy: STUMP diagnosis

- **Clinical: uterine fibroid**
- **Morcellated specimen**
- **Diffuse infiltrative border, mitotic activity, cellular, occasional large atpyical cells, mitotic activity 15/10 hpf**
  - No coagulative tumor cell necrosis or diffuse cytologic atypia
- **Strong/diffuse desmin IHC**


ALK

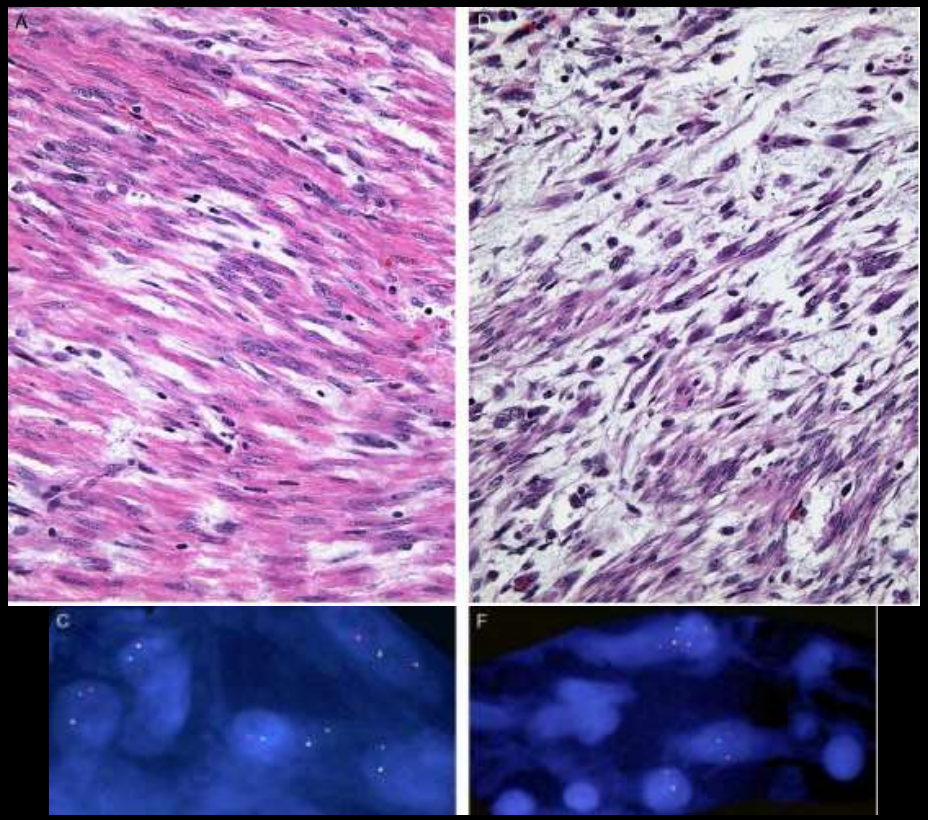

ALK

Inflammatory Myofibroblastic Tumor of the Uterus

Clinical and Pathologic Review of 10 Cases Including a Subset With Aggressive Clinical Course

Carlos Parra-Herran, MD, Charles M. Quick, MD,† Brooke E. Howitt, MD,‡ Paola Dal Cin, PhD,‡ Bradley J. Quade, MD, PhD,‡ and Marisa R. Nucci, MD‡*

Am J Surg Pathol • Volume 39, Number 2, February 2015



DDx of uterine inflammatory myofibroblastic tumor

- **Smooth muscle tumor**
  - Leiomyoma → leiomyosarcoma
- **PEComa**
- **Endometrial stromal tumor**
  - with myxoid change

TABLE 3. Immunohistochemistry and FISH Results in Uterine IMTs

Patient	ALK IHC	ALK Pattern	ALK FISH	Desmin	SMA	H-caldesmon	CD10
1	3+	Cytoplasmic	Positive*	2+	2+	Not done	2+
2	3+	Cytoplasmic	Positive	3+	3+	1+†	1+‡
3	3+§	Cytoplasmic	Positive*	3+	2+‖	2+	2+‡
4	3+	Cytoplasmic	Positive*	3+	2+‖	2+	2+
5	1+	Cytoplasmic	Not done	1+	1+	Not done	3+
6	3+	Cytoplasmic	Positive	3+	3+	0	3+
7	2+	Cytoplasmic	Positive	0	Not done	0	Not done
8	2+	Cytoplasmic	Not done	2+	2+	Not done	Not done
9	1+	Cytoplasmic	Positive	1+	0	0	Not done
10	3+	Cytoplasmic	Positive	1+	1+	0	Not done

TABLE 2. Macroscopic and Microscopic Features of Uterine IMTs

Patient	Hemorrhage	Border	Necrosis	Nuclear Atypia	Mitoses/ 10 HPF	Myxoid Pattern (%)	Fascicular Pattern (%)	Inflammatory Infiltrate
1	No	Smooth	No	Mild	5	20	80	Present
2	No	Smooth	No	Mild	2	60	40*	Present
3	Yes	Smooth	No	Moderate	1	60	40*	Present
4	Yes	Infiltrative	No	Moderate	4	80	20	Present
5	No	Infiltrative	No	Mild	7	80	20	Present
6	No	UNK	No	Mild	1	80	20	Present
7	No	Smooth	No	Mild	4	90	10	Present
8	No	Infiltrative	Yes	Mild	10	90	10	Present
9	Yes	Infiltrative	Yes	Moderate	8	90	10	Present
10	Yes	Infiltrative	Yes	Mild	20	90	10	Present

TABLE 1. Clinical Features of Patients with Uterine IMT

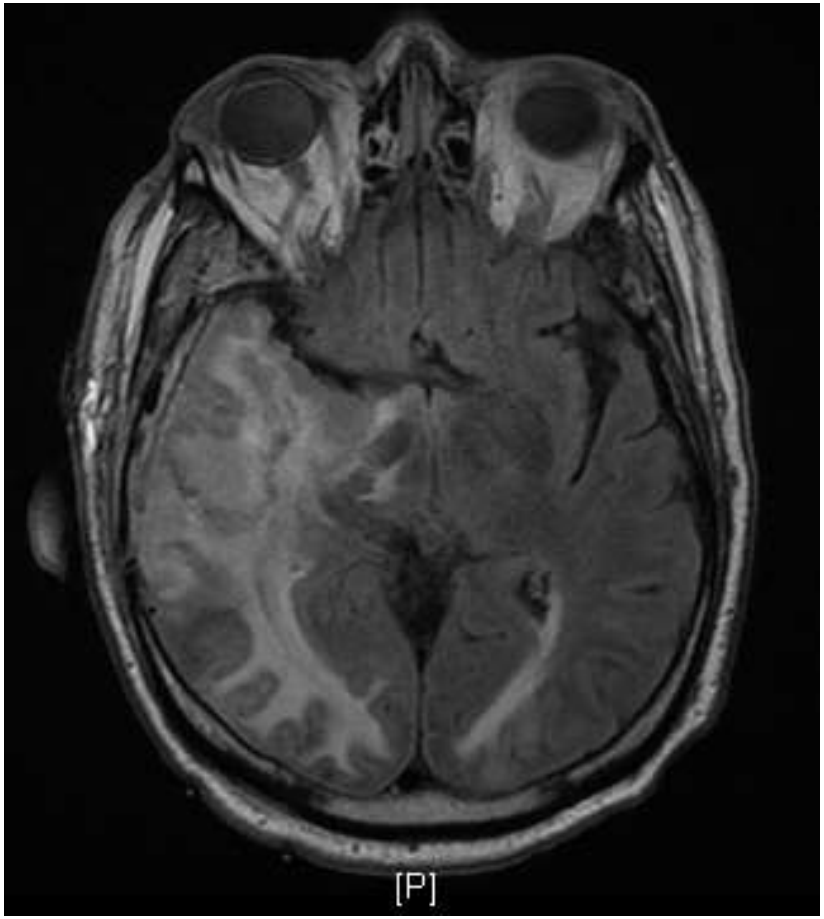
Patient	Age	Symptoms	Size	Location	Procedure	Extrauterine Spread (At Presentation)	Follow-up Interval	Status at Follow-up
1	40	Mass	7	Lower uterine segment	Hysterectomy	No	6 mo	Alive, no evidence of disease
2	37	Abnormal bleeding	1.5	Fundus	Hysterectomy	No	3 y	Alive, no evidence of disease
3	45	Abnormal bleeding, pain	5.5	Fundus	Hysterectomy	No	16 mo	Alive, no evidence of disease
4	29	Abnormal bleeding	4.2	Fundus	Hysterectomy	No	12 mo	Alive, no evidence of disease
5	43	Mass	11	Cervix	Hysterectomy	No	Not available	Not available
6	46	Abnormal bleeding, polyp	UNK	Fundus	Endometrial curettage	No	Recent case	Not applicable
7	36	Mass	1.3	Lower uterine segment	Excision	No	Recent case	Not applicable
8	73	Mass	10.5	Fundus	Hysterectomy	Yes (vagina)	Not available	Not available
9	39	Mass	7	Cervix, fundus	Hysterectomy	No	2 mo	Recurrence (omentum, subcutaneous tissue-drain site)
10	55	Mass	19.5	Fundus	Hysterectomy	No	2 y	Recurrence (left pelvis)

SB 6099

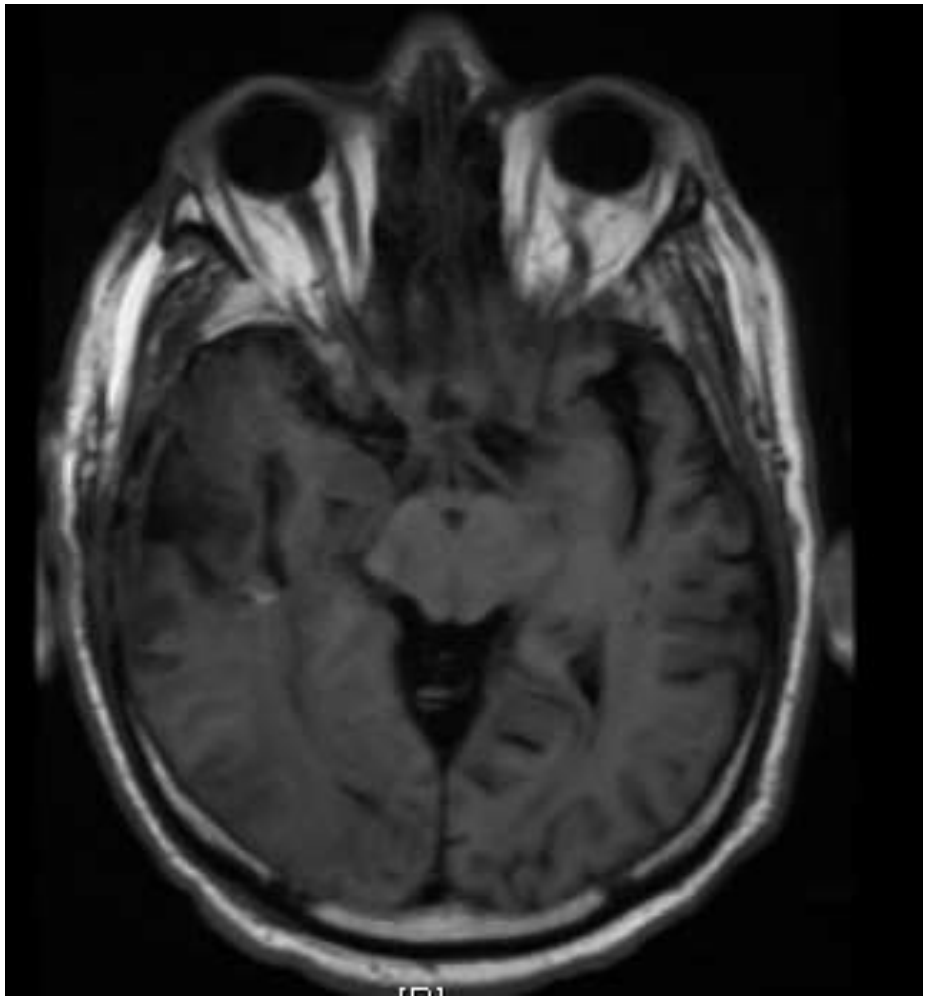
Seth Lummus/Hannes Vogel; Stanford

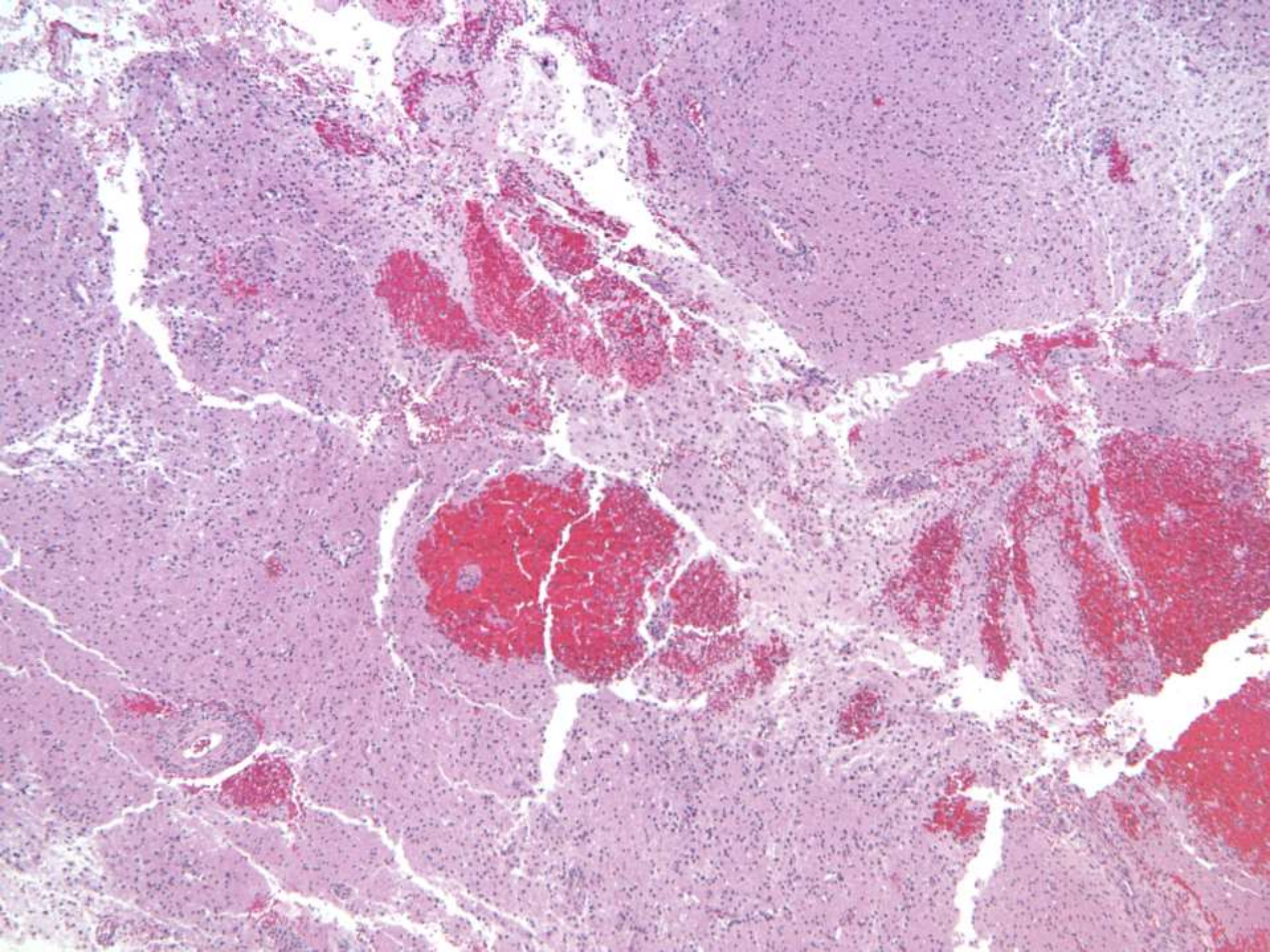
73-year-old male with skin lesions, nausea, vomiting, problems with coordination, and left hand numbness. Neuroradiology: Right temporal hemorrhagic mass.

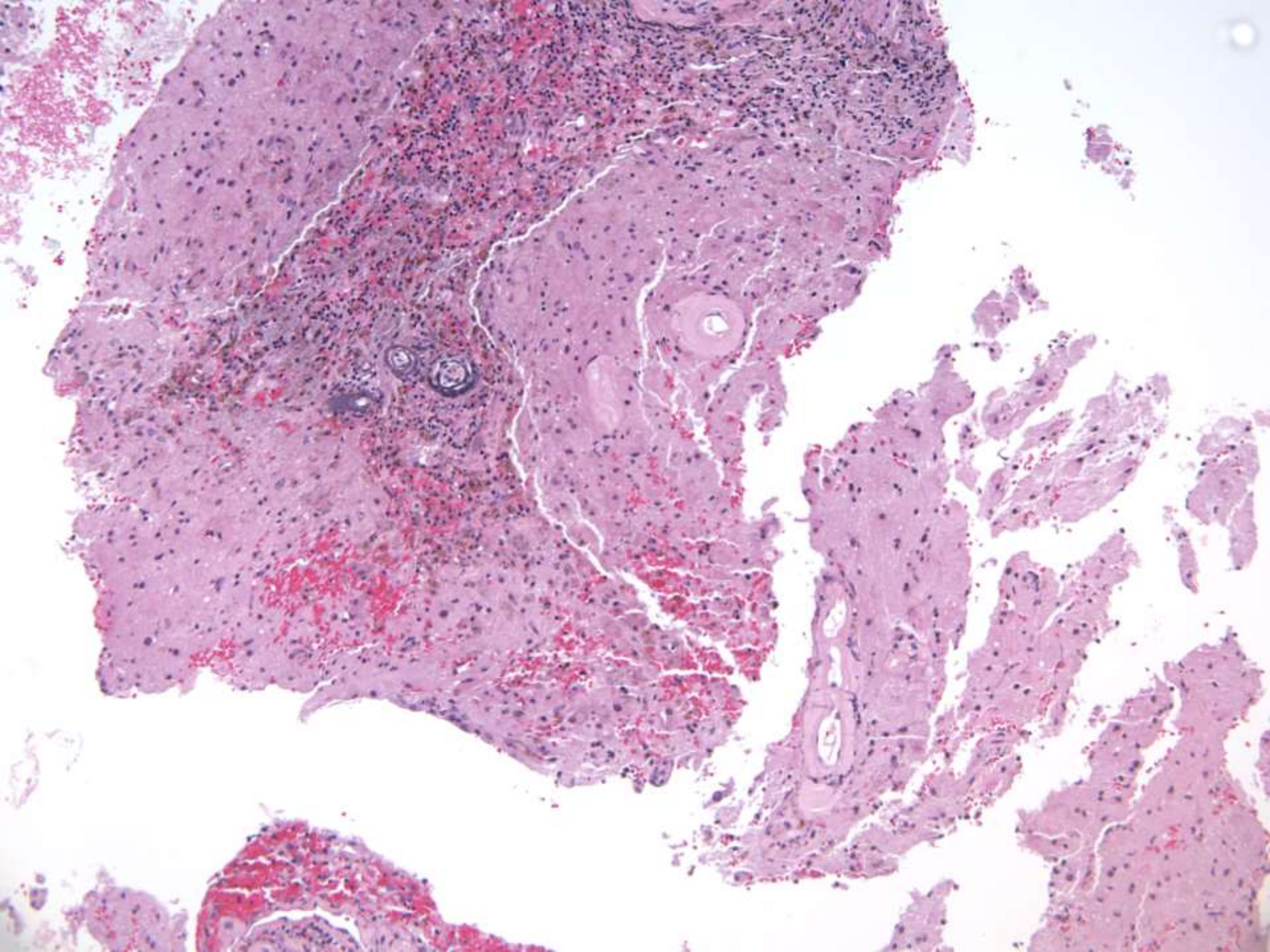
T2 FLAIR

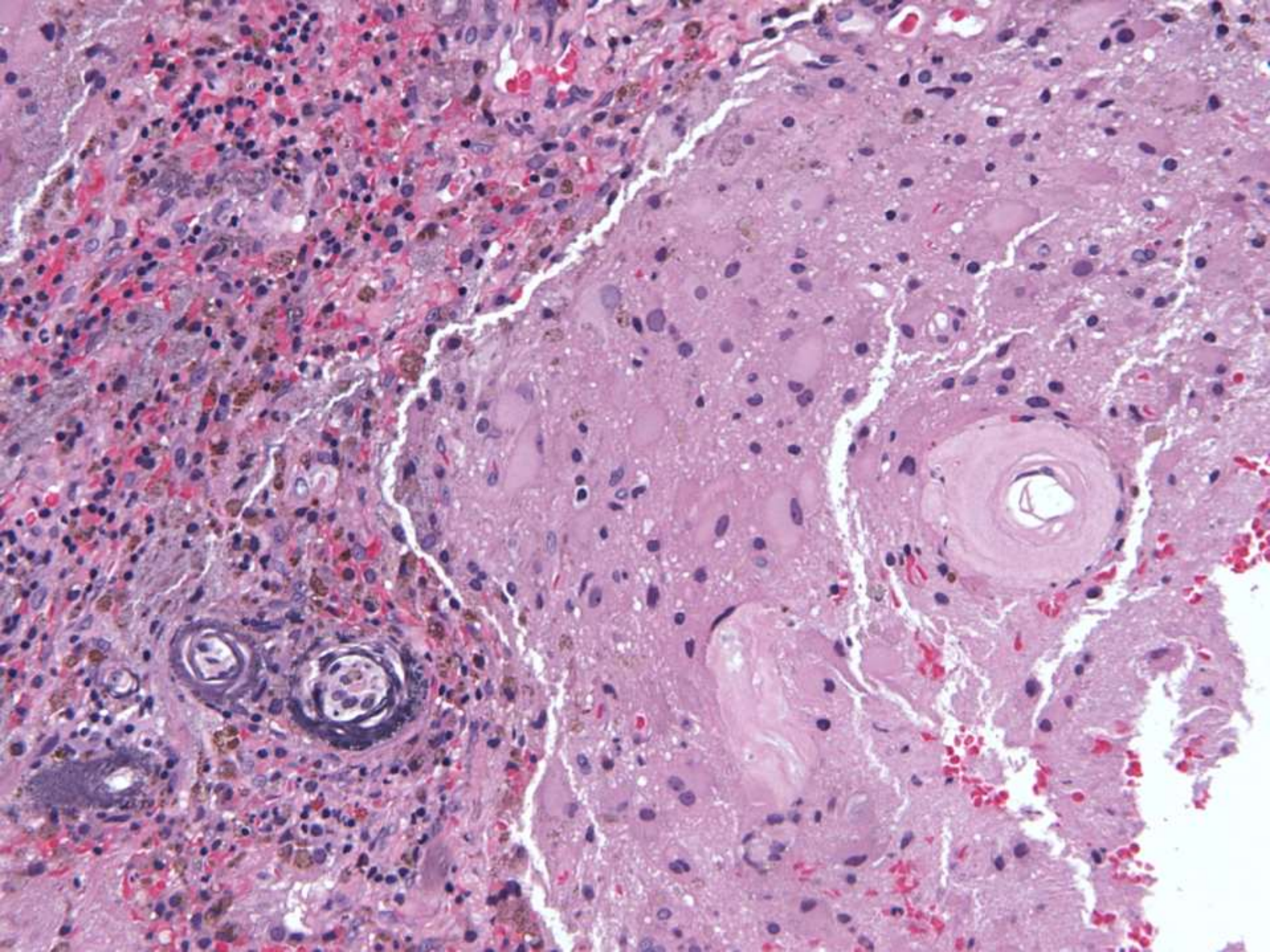


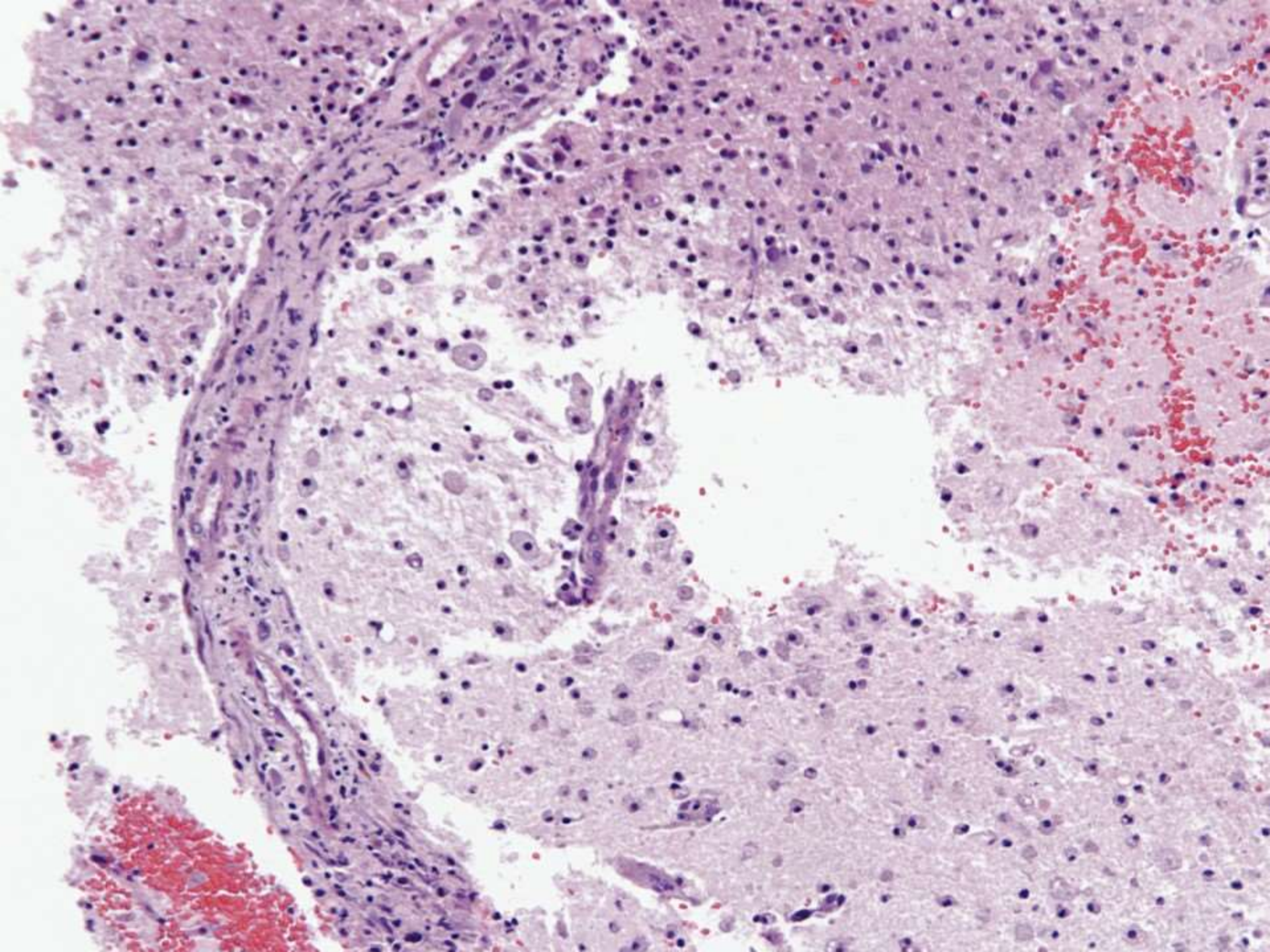
T1 FLAIR

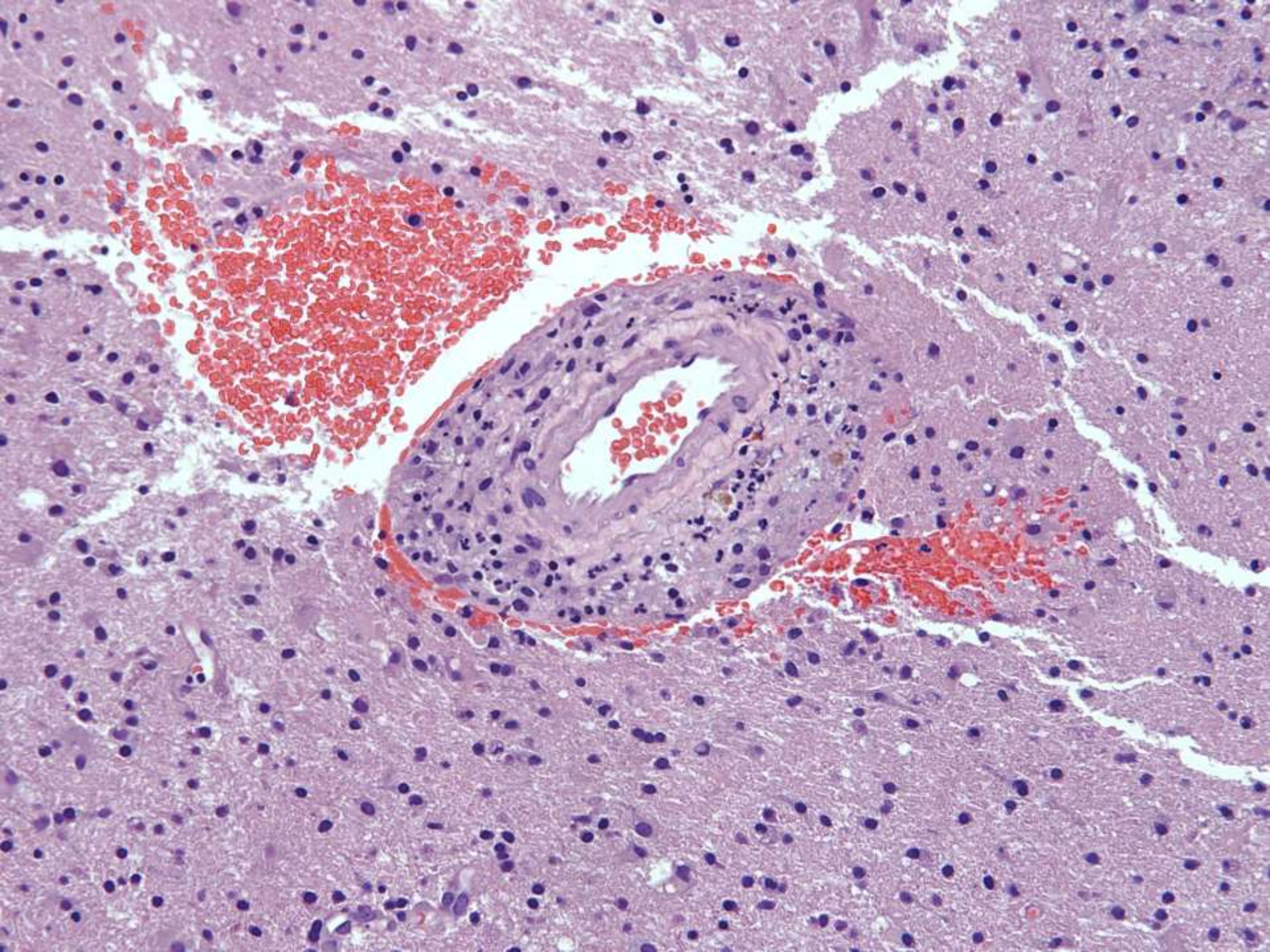




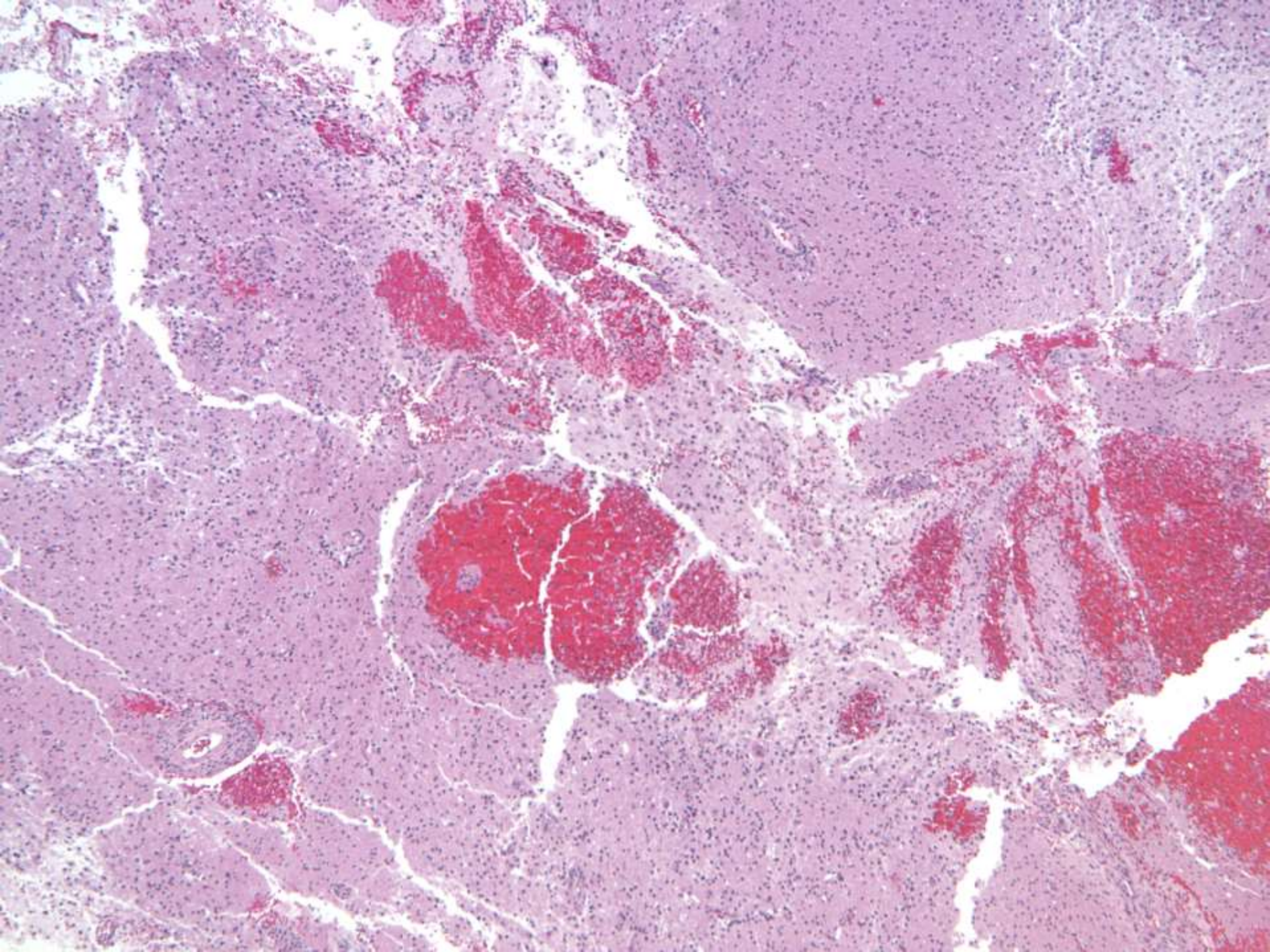


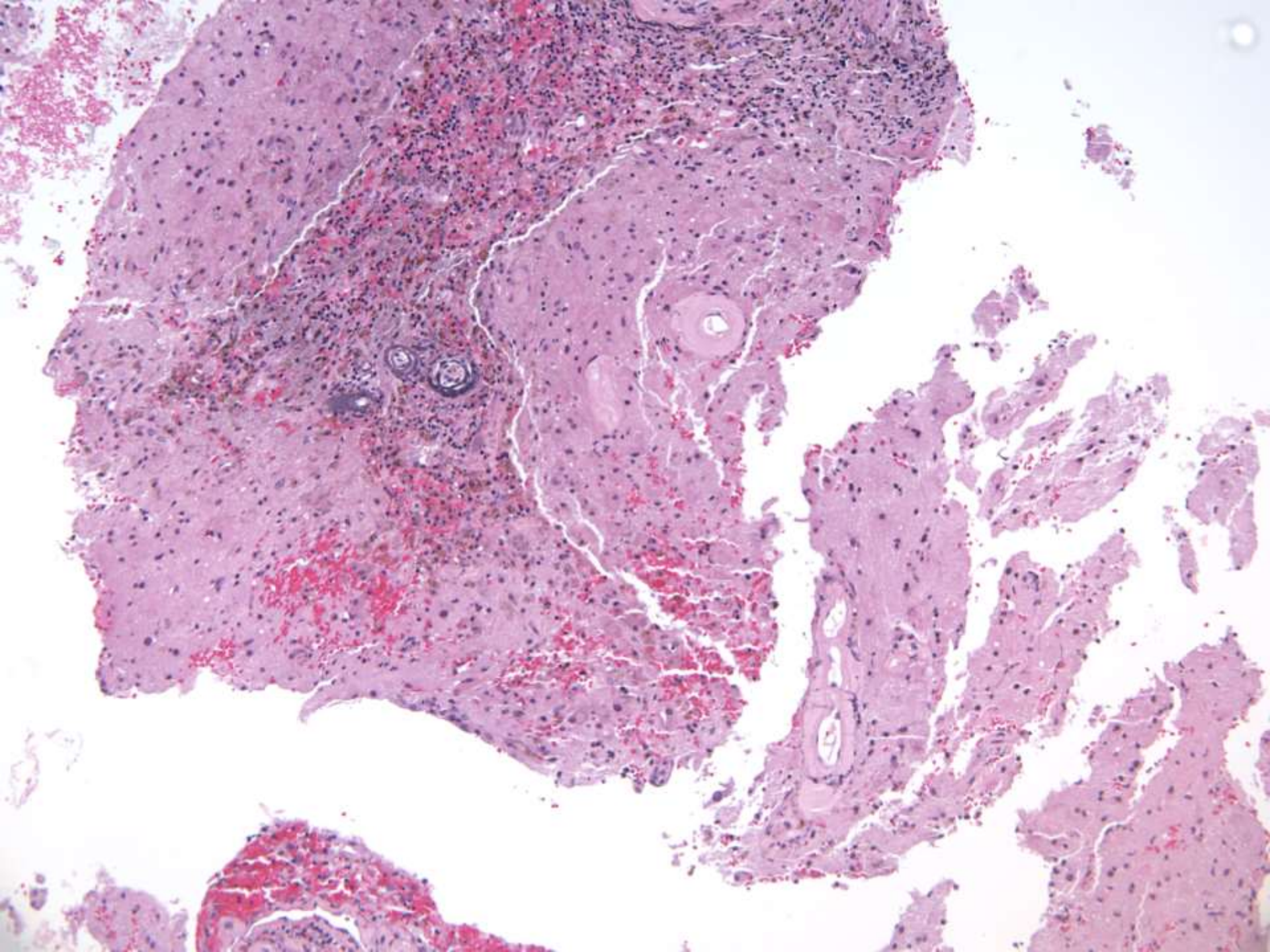


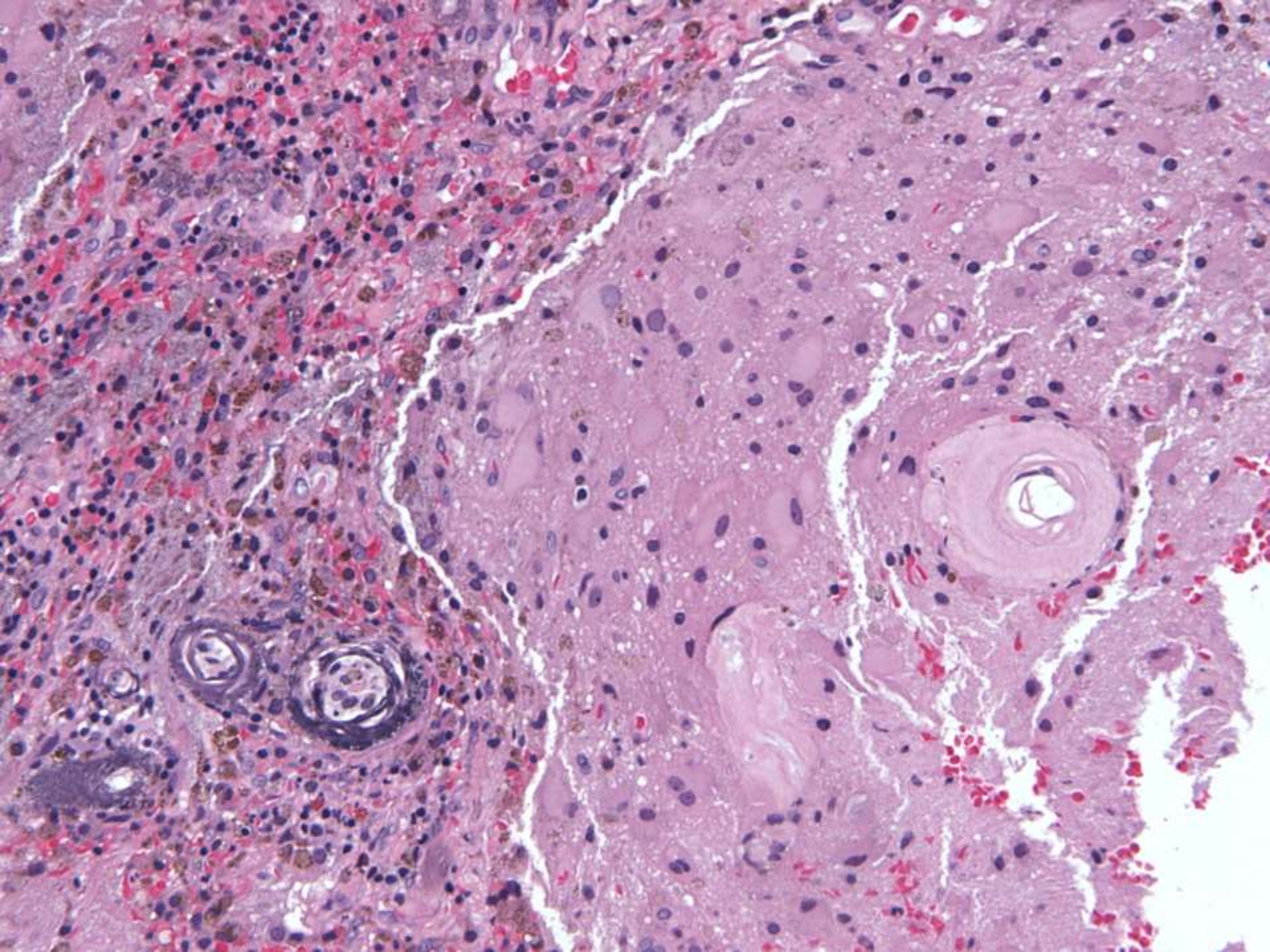


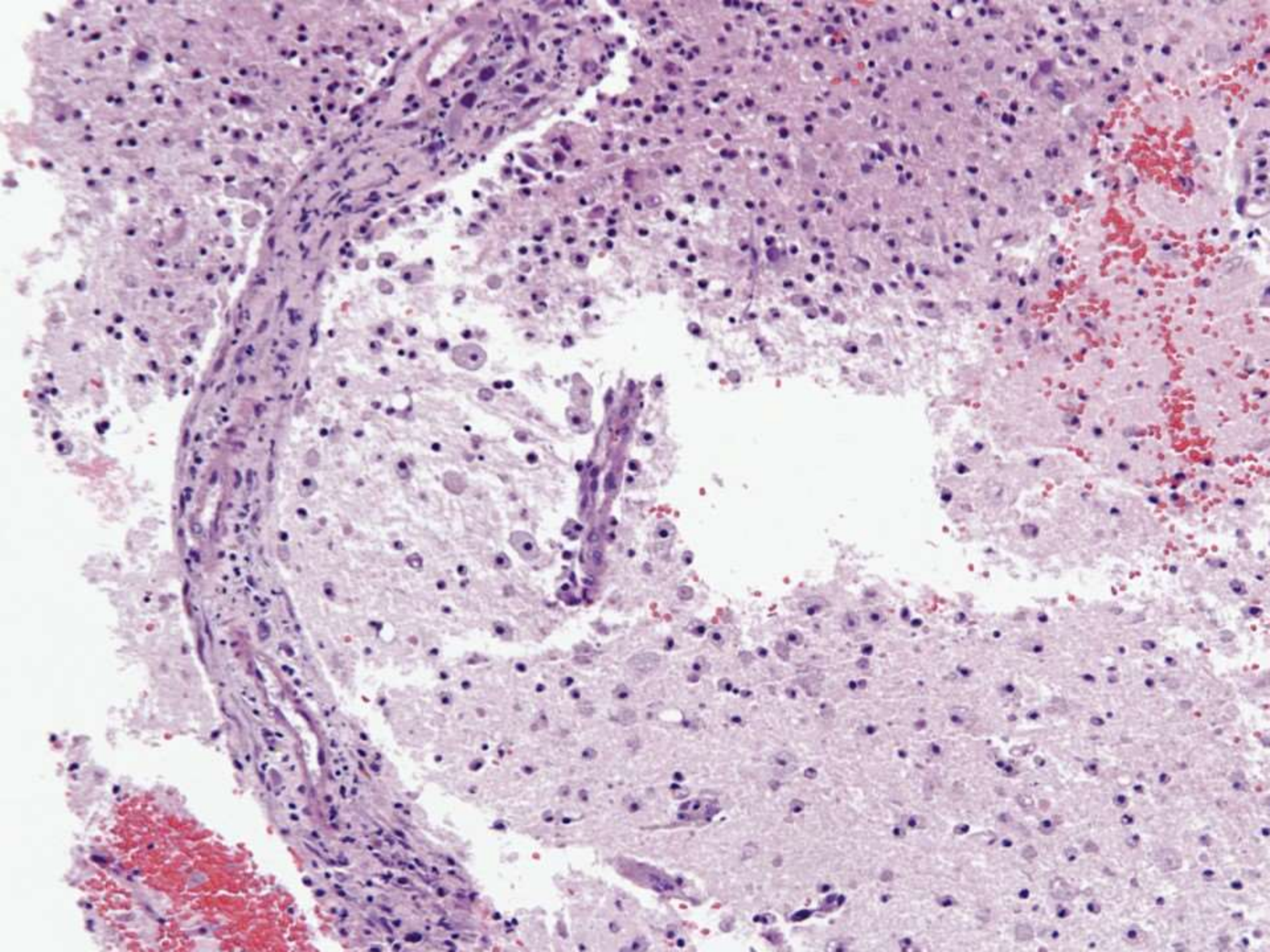


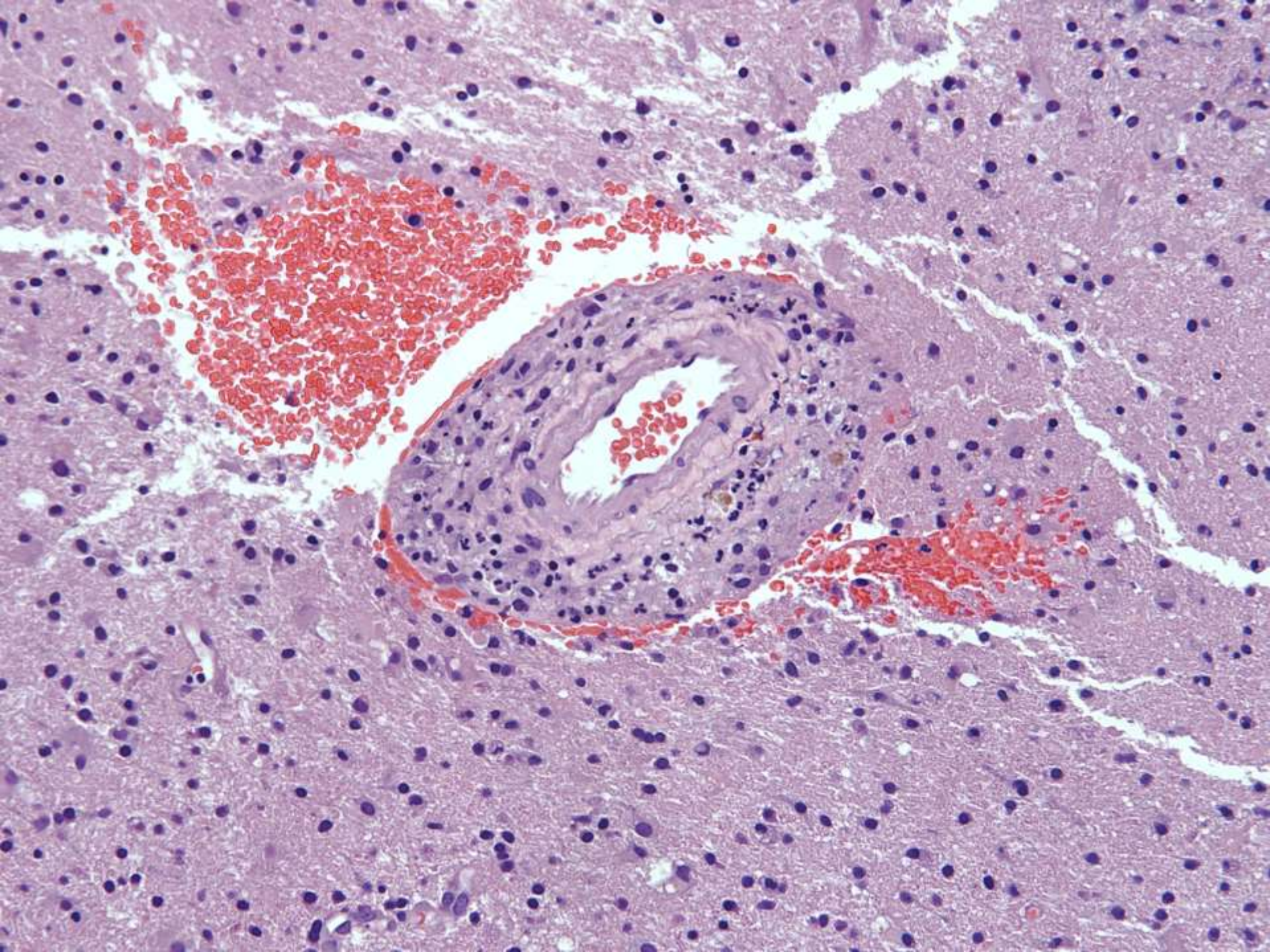
DIAGNOSIS?

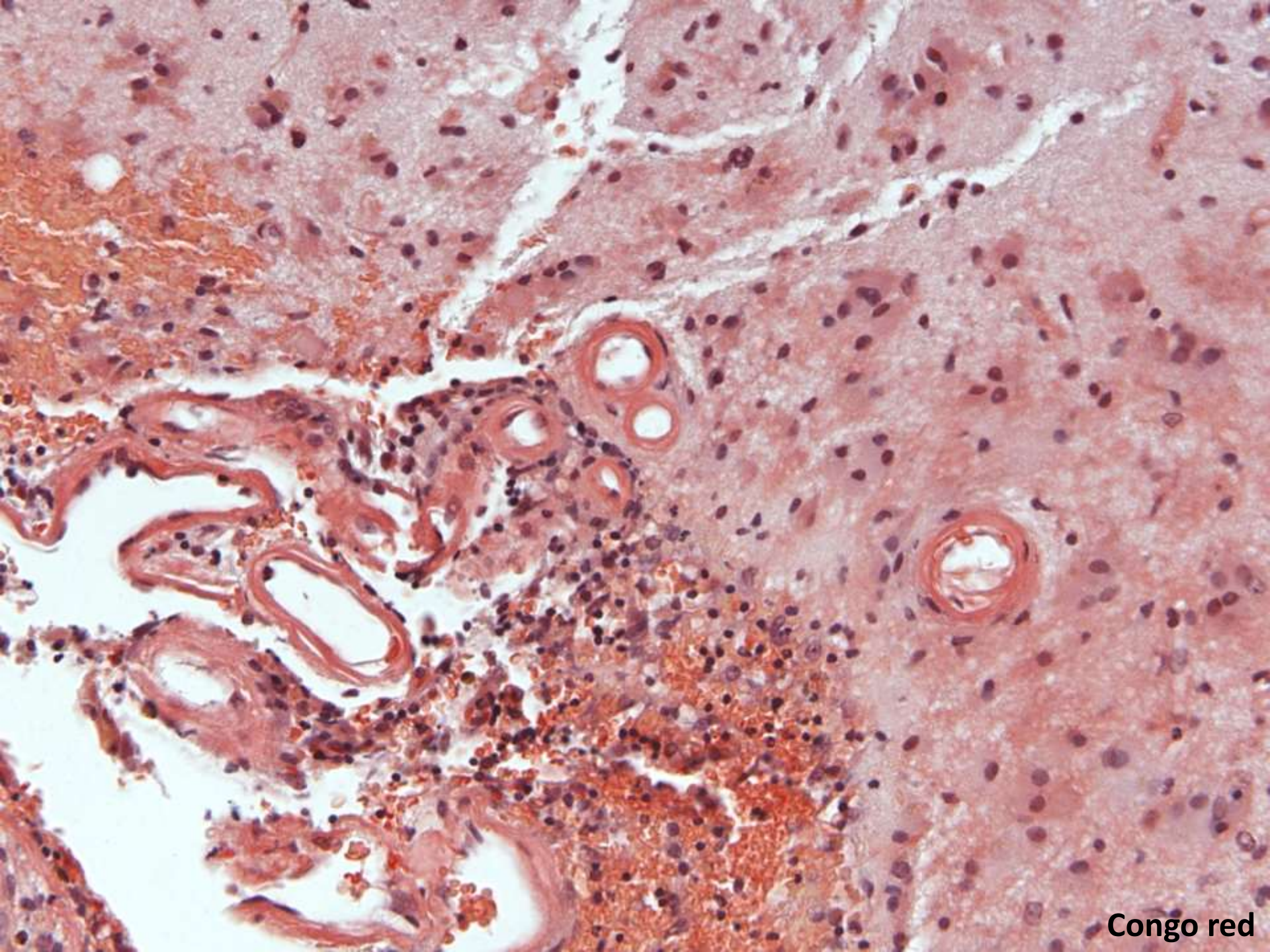


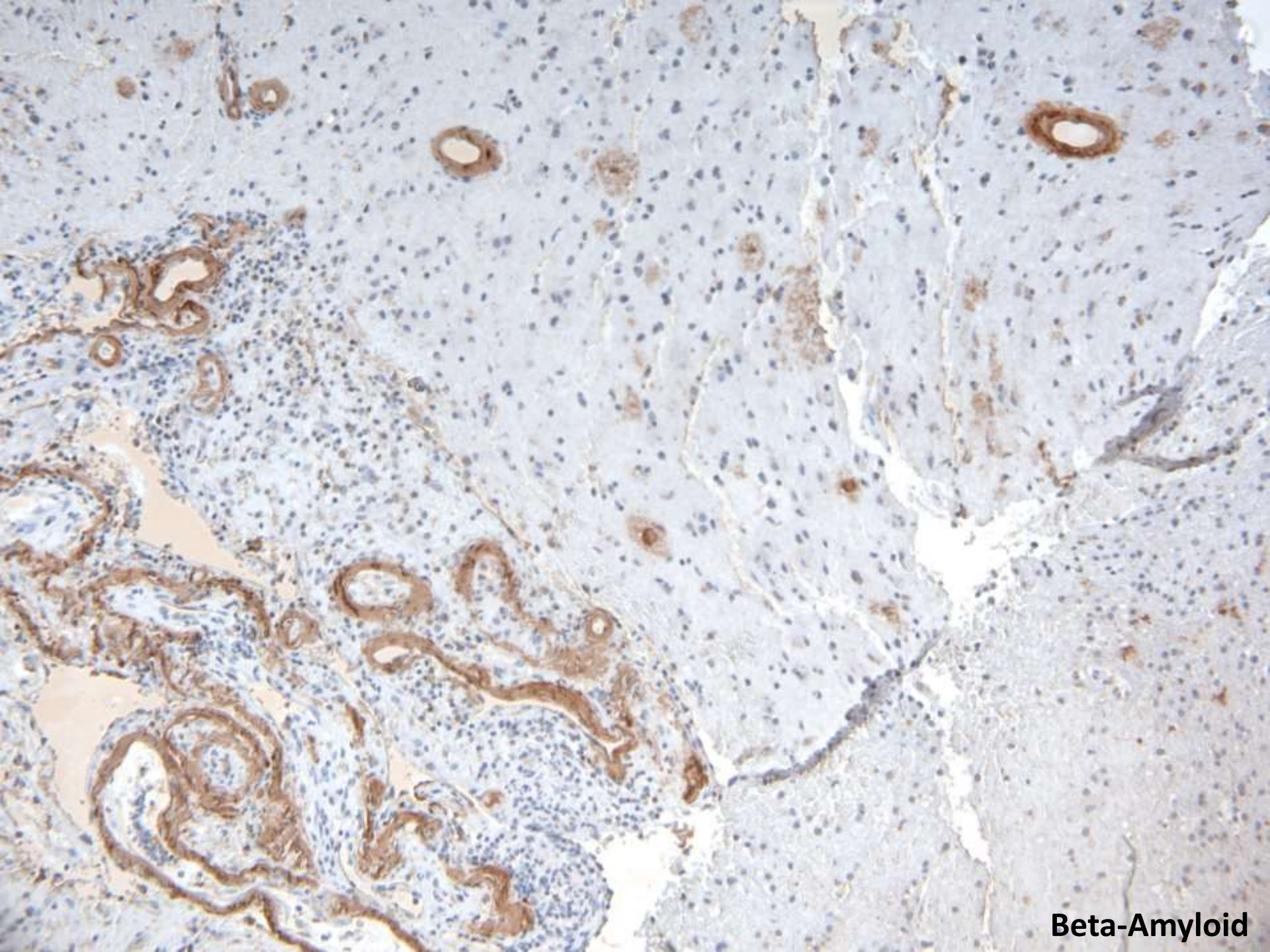









Congo red


Beta-Amyloid

Cerebral beta-amyloid angiopathy associated angiitis

Main clinical and radiologic differential diagnoses:

1. Primary CNS angiitis
2. Cerebral beta-amyloid angiopathy (without angiitis)
3. Ischemic stroke
4. Demyelinating
5. Infectious

Illustrative Teaching Cases

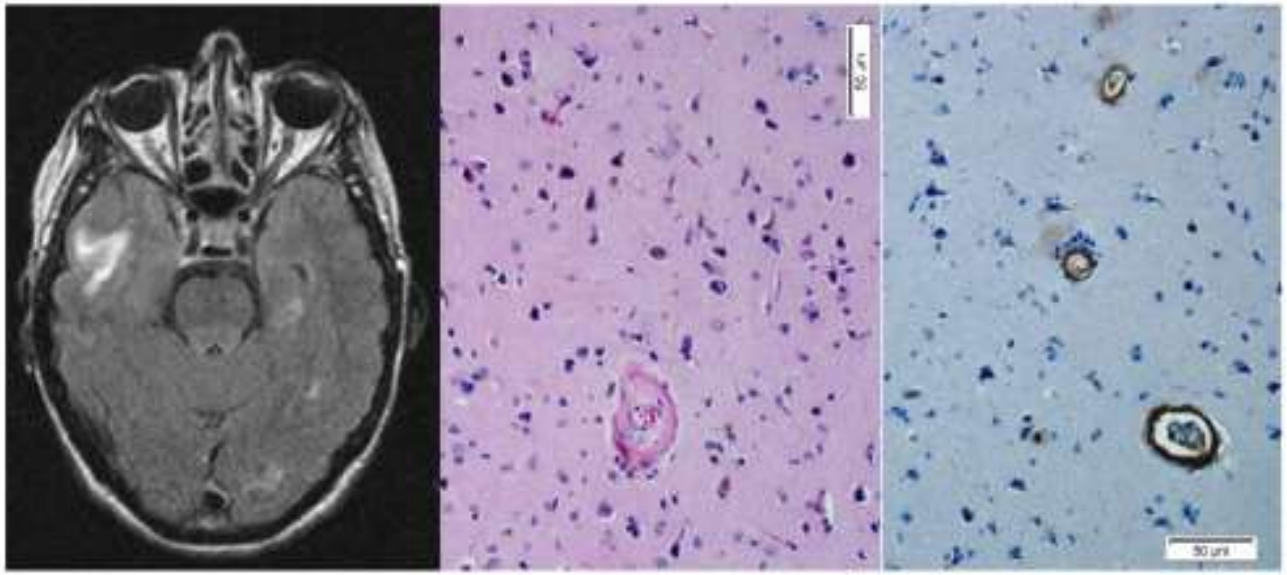
Section Editors: Scott Silverman, MD, and Sophia Sundararajan, MD, PhD

Inflammatory Cerebral Amyloid Angiopathy, Amyloid-β–Related Angiitis, and Primary Angiitis of the Central Nervous System

Similarities and Differences

Aimen Moussaddy, MD; Ariel Levy, MD, FRCP; Daniel Strbian, MD, PhD;
Sophia Sundararajan, MD, PhD; France Berthelet, MD, FRCP; Sylvain Lanthier, MD, OD, CSPQ

Inflammatory cerebral beta-amyloid angiopathy (no angiitis)



Moussaddy A. Inflammatory Cerebral Amyloid Angiopathy, Amyloid-β-Related Angiitis, and Primary Angiitis of the Central Nervous System: Similarities and Differences. Stroke. 2015 Sep;46(9).

Illustrative Teaching Cases

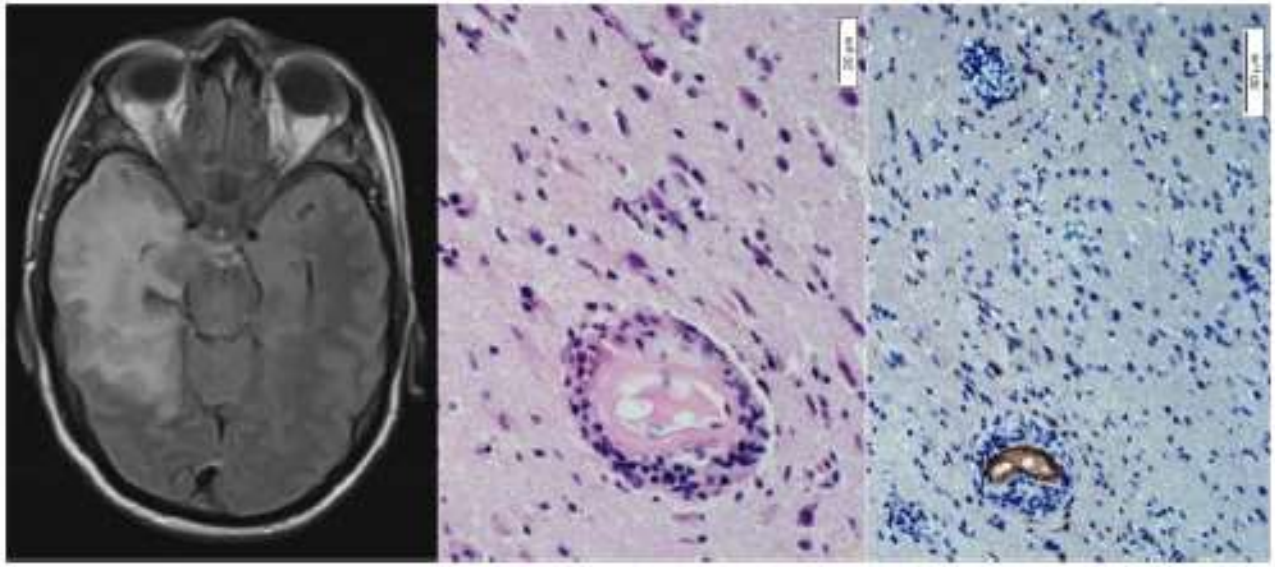
Section Editors: Scott Silverman, MD, and Sophia Sundararajan, MD, PhD

Inflammatory Cerebral Amyloid Angiopathy, Amyloid-β–Related Angiitis, and Primary Angiitis of the Central Nervous System

Similarities and Differences

Aimen Moussaddy, MD; Ariel Levy, MD, FRCP; Daniel Strbian, MD, PhD; Sophia Sundararajan, MD, PhD; France Berthelet, MD, FRCP; Sylvain Lanthier, MD, OD, CSPQ

Cerebral beta-amyloid angiopathy associated angiitis



Moussaddy A. Inflammatory Cerebral Amyloid Angiopathy, Amyloid-β-Related Angiitis, and Primary Angiitis of the Central Nervous System: Similarities and Differences. Stroke. 2015 Sep;46(9).

Illustrative Teaching Cases

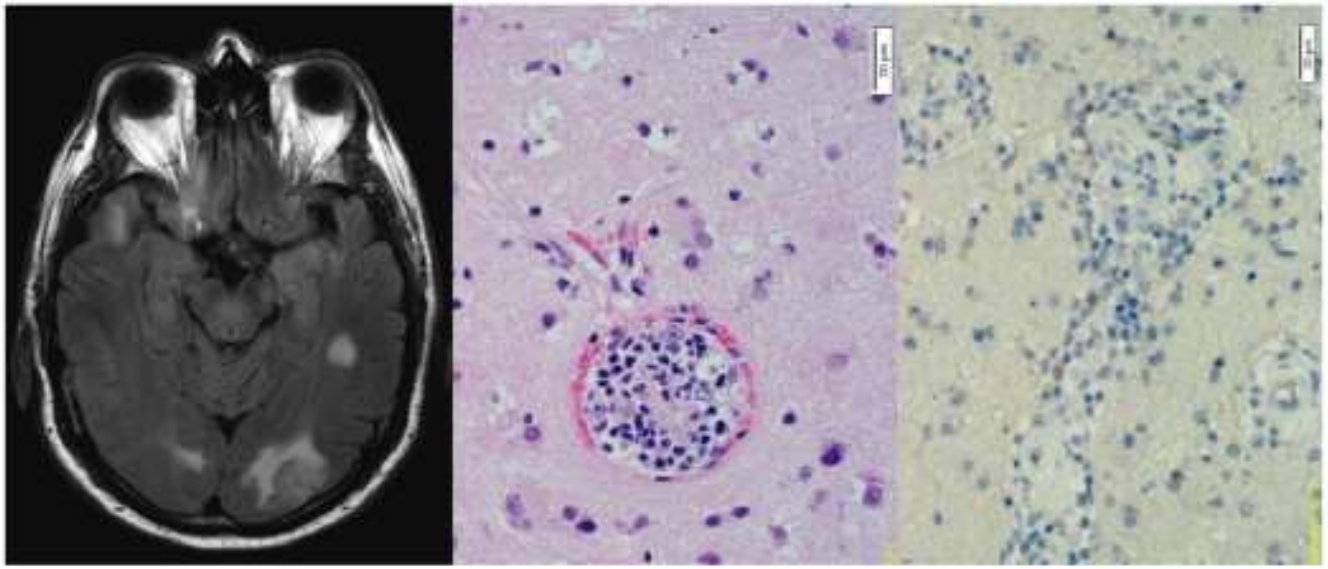
Section Editors: Scott Silverman, MD, and Sophia Sundararajan, MD, PhD

Inflammatory Cerebral Amyloid Angiopathy, Amyloid-β–Related Angiitis, and Primary Angiitis of the Central Nervous System

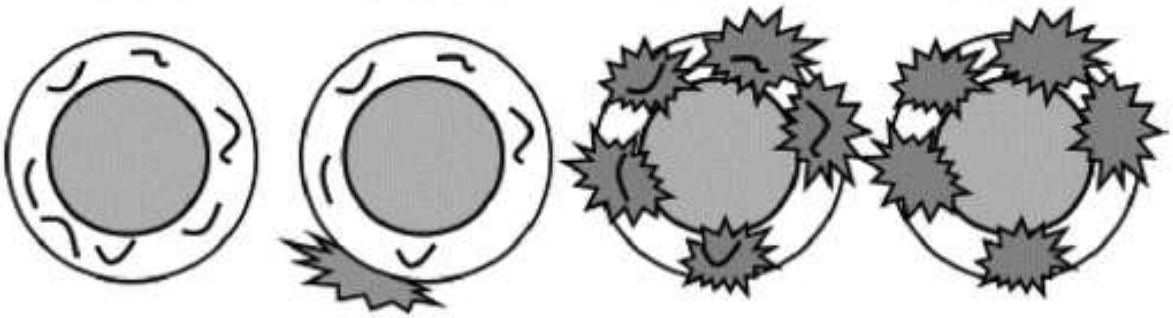
Similarities and Differences

Aimen Moussaddy, MD; Ariel Levy, MD, FRCP; Daniel Strbian, MD, PhD; Sophia Sundararajan, MD, PhD; France Berthelet, MD, FRCP; Sylvain Lanthier, MD, OD, CSPQ

Primary CNS angiitis



Moussaddy A. Inflammatory Cerebral Amyloid Angiopathy, Amyloid-β-Related Angiitis, and Primary Angiitis of the Central Nervous System: Similarities and Differences. Stroke. 2015 Sep;46(9).



	CAA	I-CAA	ABRA	PACNS
Amyloid-beta deposits (⌒)	Present	Present	Present	Absent
Inflammation (✸)	Absent	Perivasculitis (no vasculitis)	Vasculitis (centered on amyloid-beta)	Vasculitis

Clinical features

These are treated differently, so distinction is important.

Beta-amyloid angiopathy

- Usually >50
- Multiple lobar microbleeds

Beta-amyloid associated angiitis

- Hallucinations
- Acute infarcts, pseudotumors, cerebral enhancing lesions

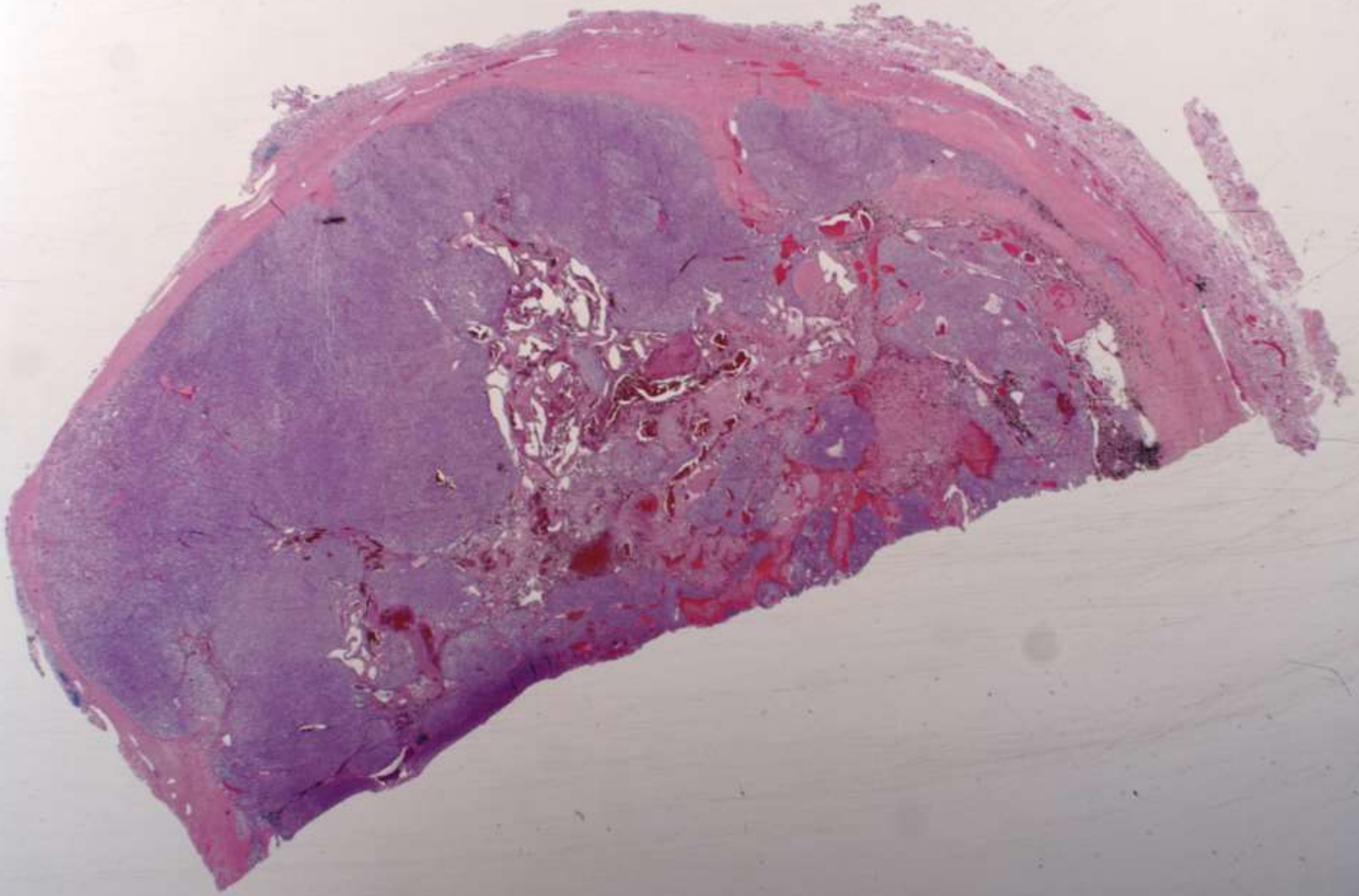
Primary CNS angiitis

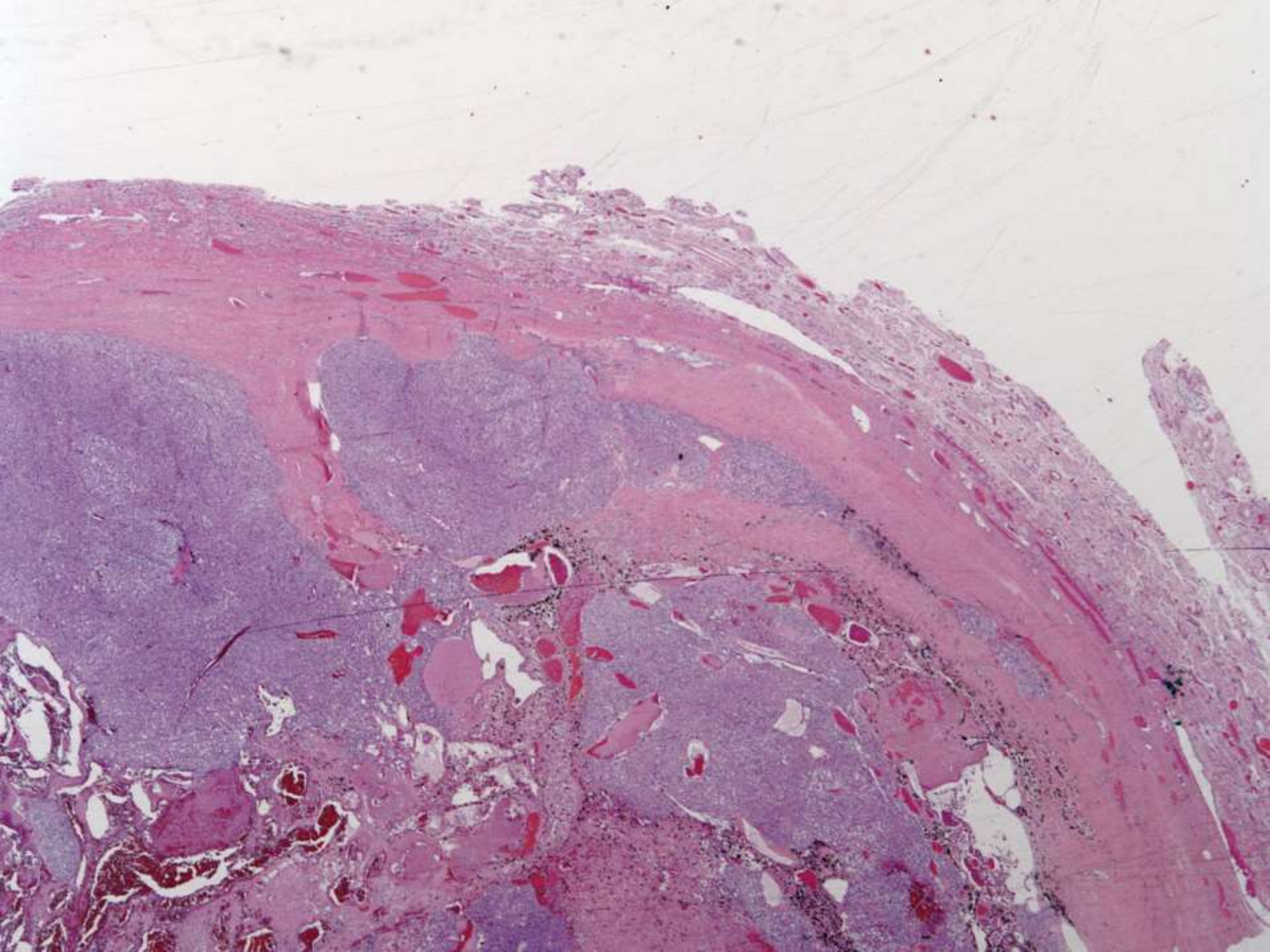
- Typically young, involves spinal cord vessels leading to myelopathy
- Acute infarcts, pseudotumors, cerebral enhancing lesions

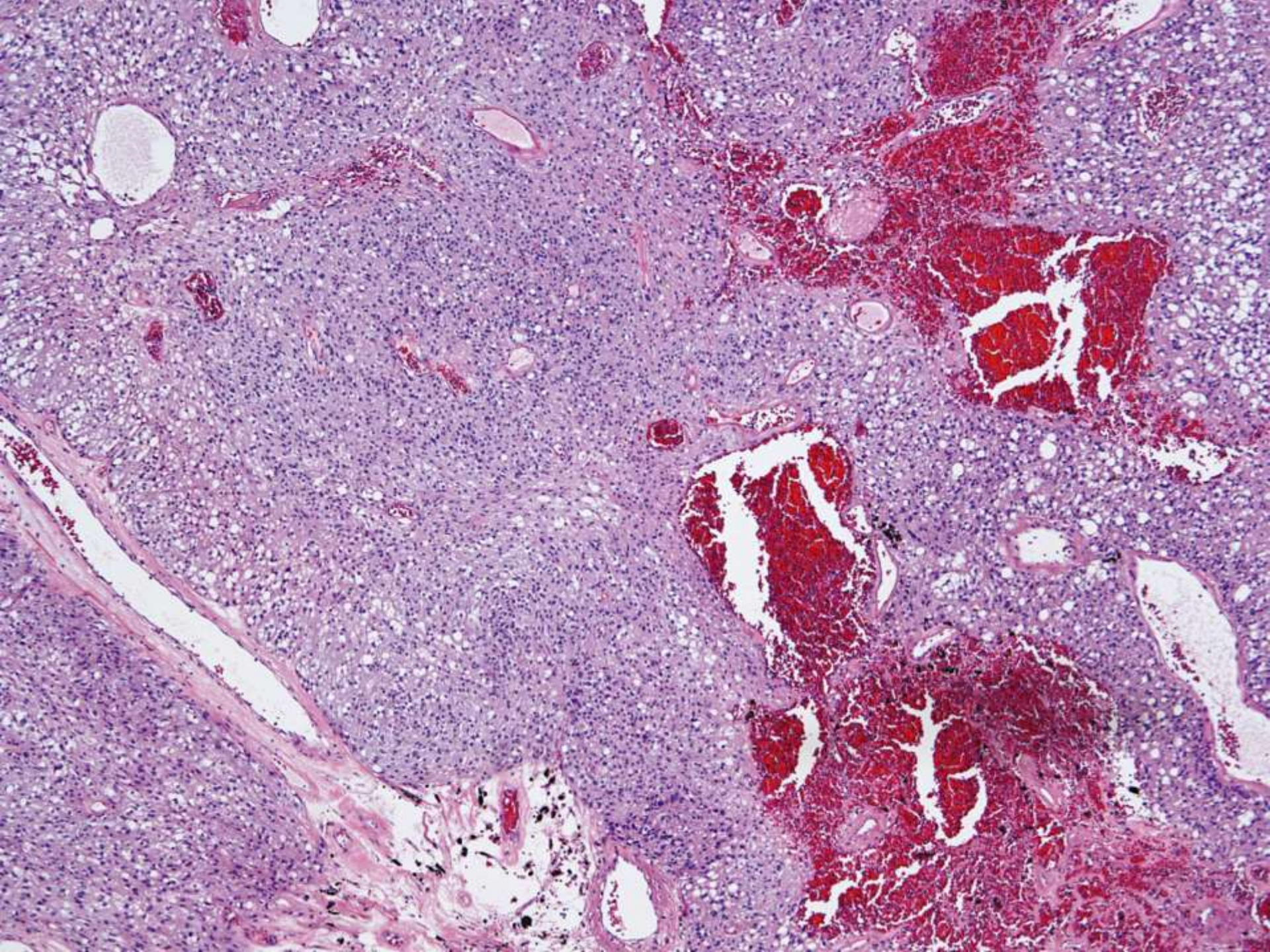
SB 6100

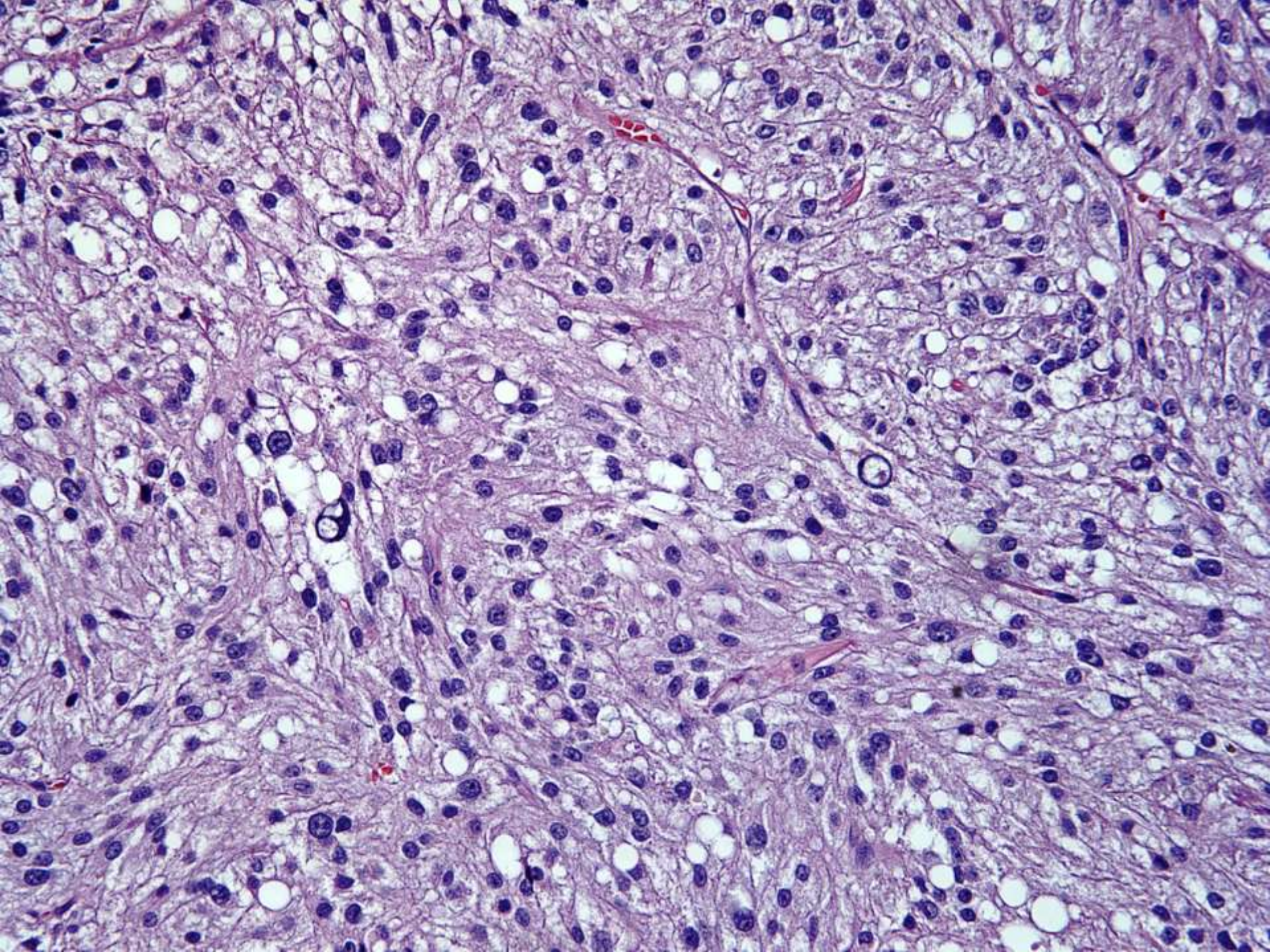
Alana Shain/Sunny Kao; Stanford

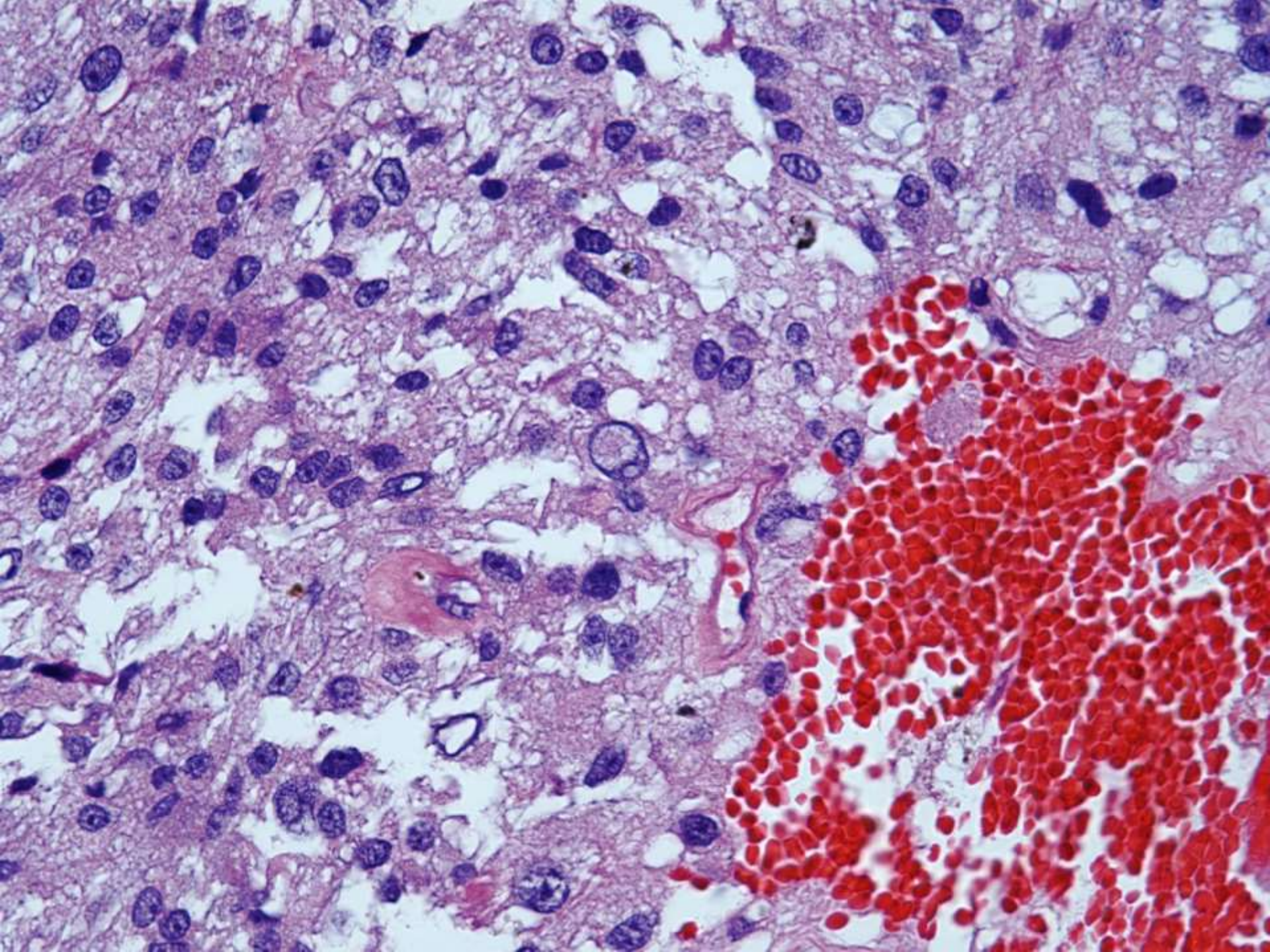
53-year-old male with a painful testicle.

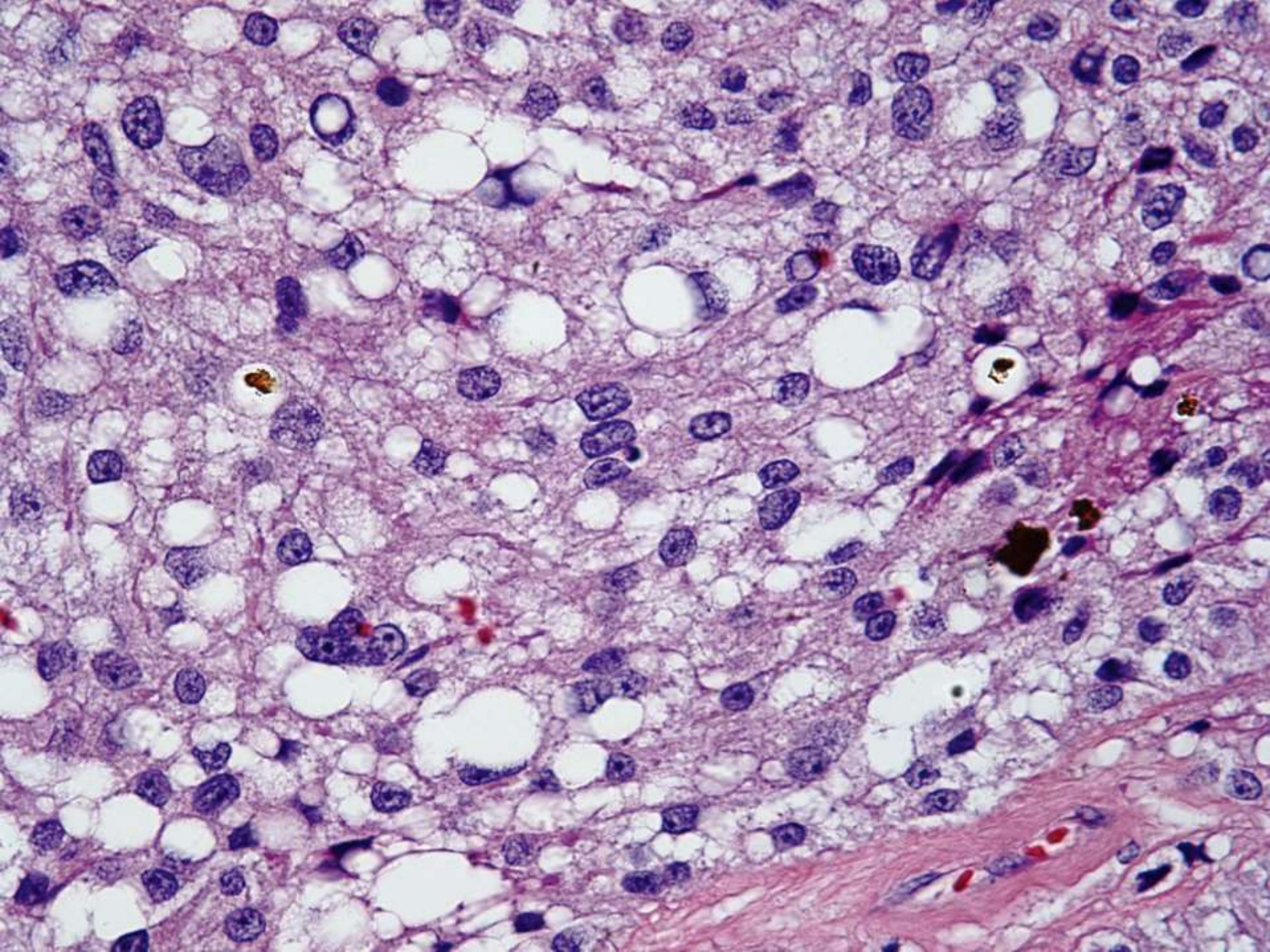


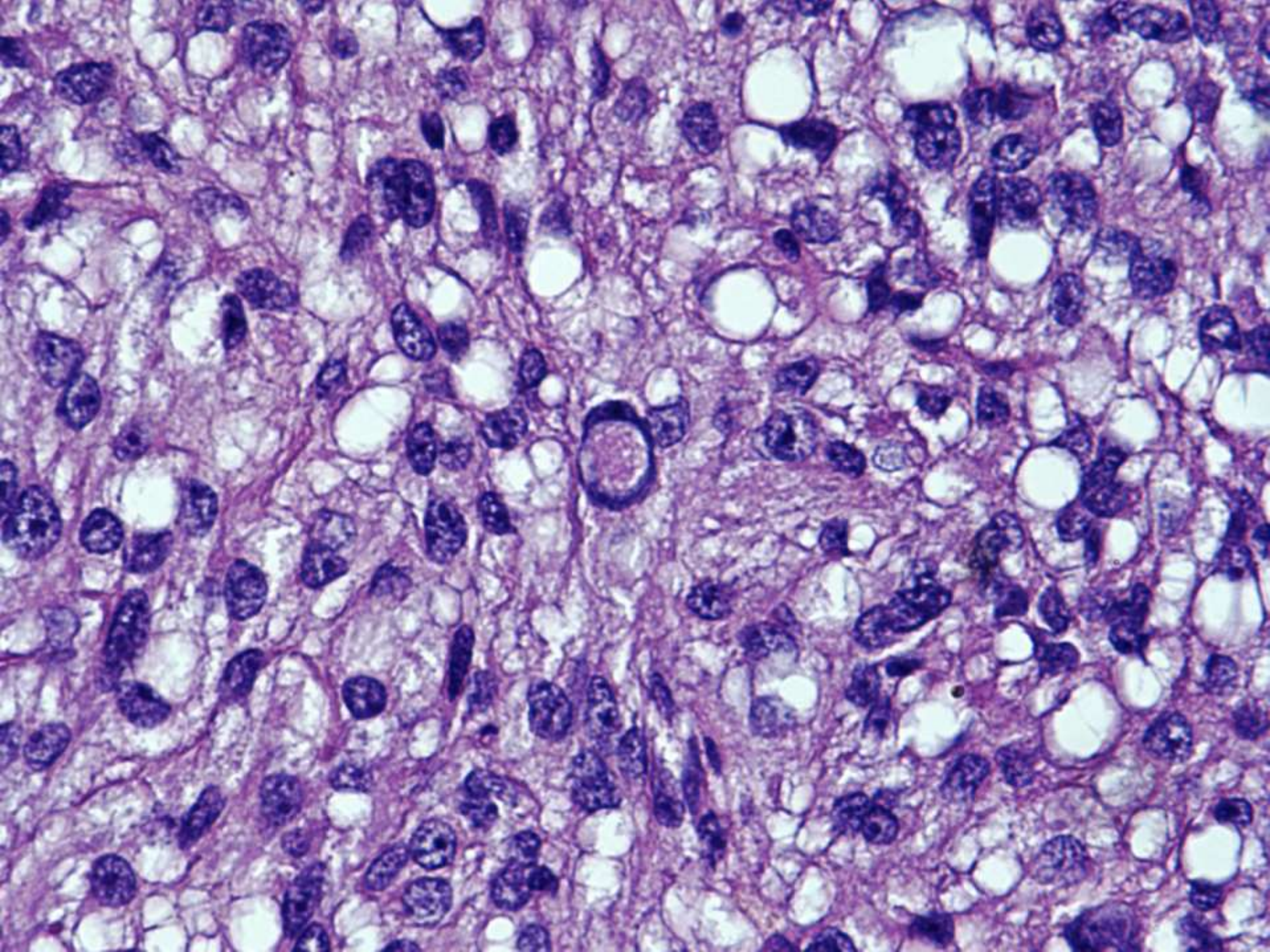




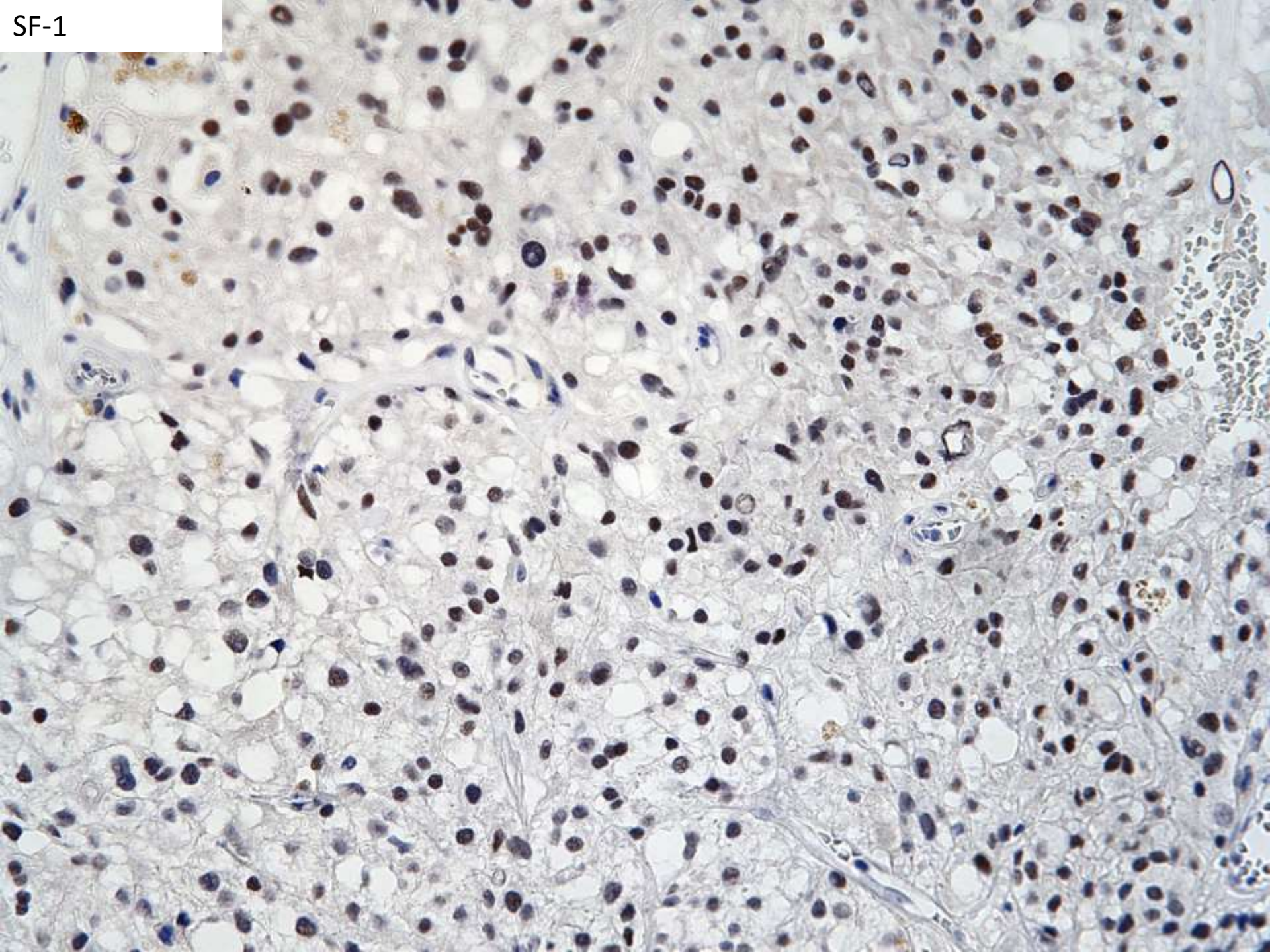


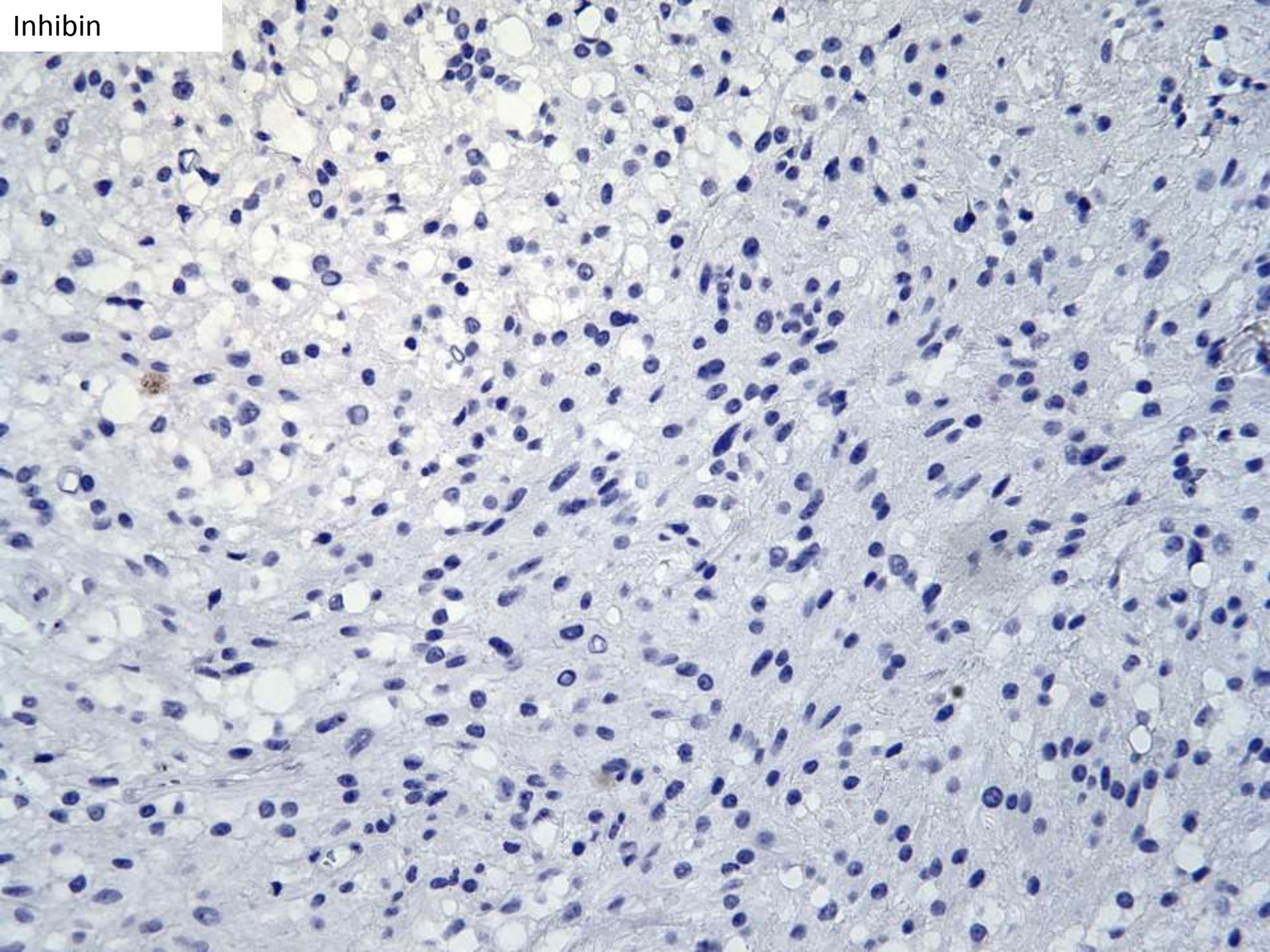


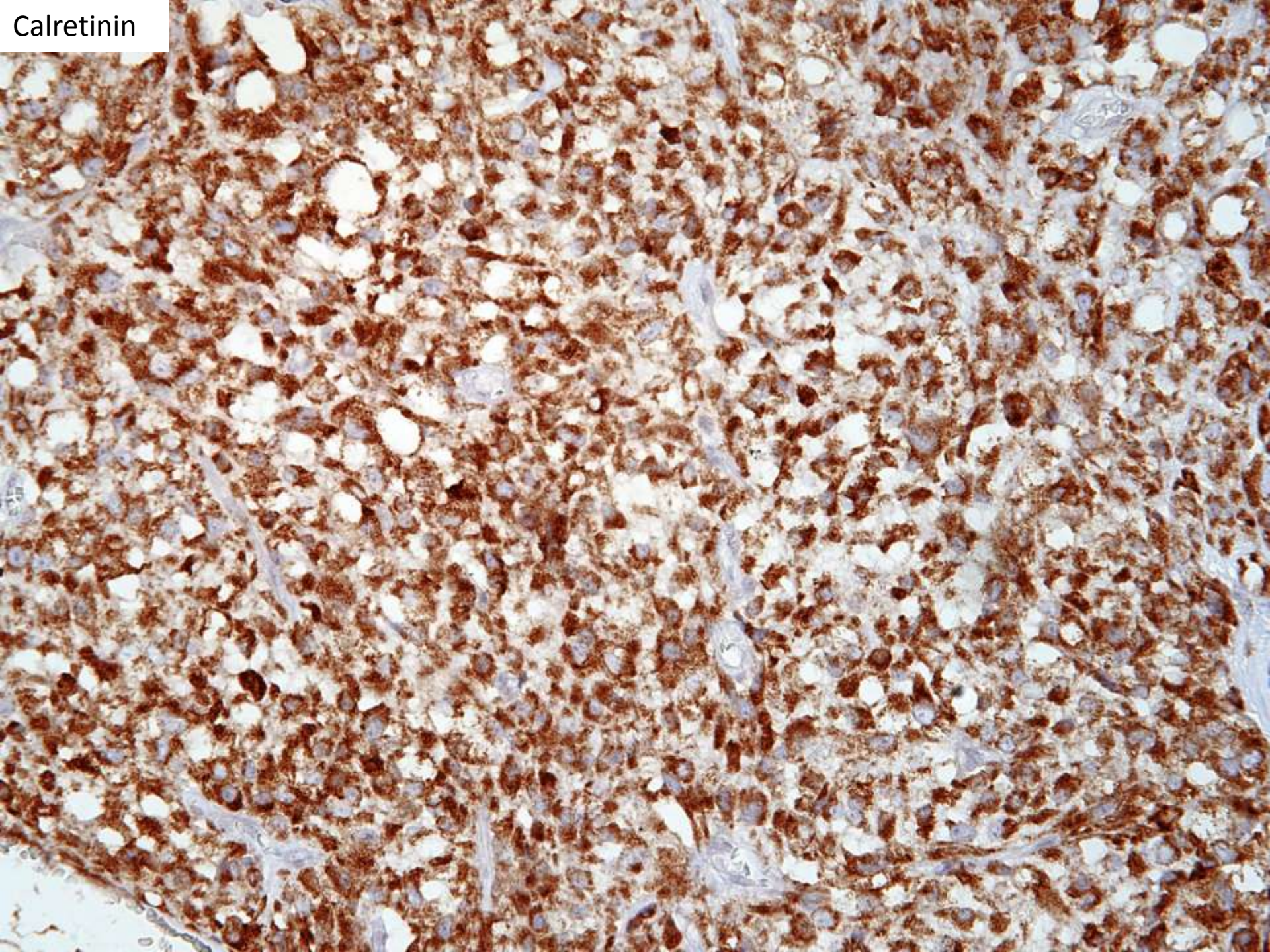




DIAGNOSIS?


SF-1


Inhibin


Calretinin

Immunohistochemistry

Positive:

Calretinin

SF-1

CD10

Vimentin

Negative:

Inhibin

Pancytokeratin

S100

HMB45

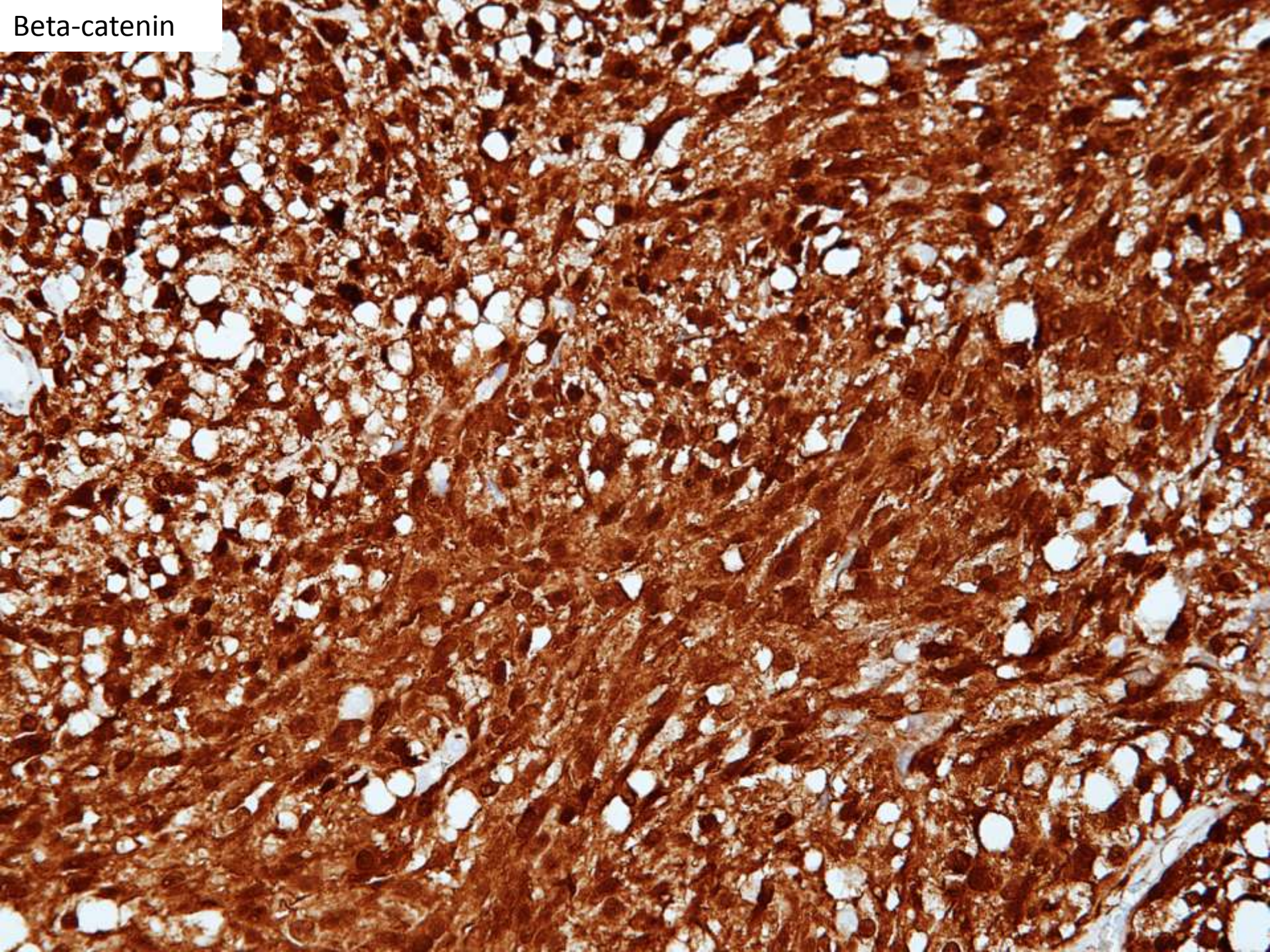
Pax8

GFAP

SMA

Desmin

SALL4


Beta-catenin

Nuclear Localization of β-Catenin in Sertoli Cell Tumors and Other Sex Cord–Stromal Tumors of the Testis

An Immunohistochemical Study of 87 Cases

Chen Zhang, MD, PhD and Thomas M. Ulbright, MD

Sex-cord stromal tumors of testis difficult to classify

- Leydig cell tumors

  --> Pseudoglandular formation can mimic SCT

- Sertoli cell tumors

  --> Diffuse areas, eosinophilic cytoplasm can mimic LCT

- Granulosa cell tumors

  --> Microfollicular JGCT can mimic SCT (tubules)

- Unclassified

AJSP 2015.

Nuclear Localization of β-Catenin in Sertoli Cell Tumors and Other Sex Cord–Stromal Tumors of the Testis

An Immunohistochemical Study of 87 Cases

Chen Zhang, MD, PhD and Thomas M. Ulbright, MD

- **Nuclear beta catenin for SCT-NOS, SSCT:**
  - Sensitivity 63% - **Negative result does not exclude SCT**
  - **Specificity 100%**
- **Further subtype SCT**
  - Large cell calcifying sertoli cell tumor
    - Associated with Carney complex, *PRKAR1A gene mutation*
    - All cases negative for nuclear beta-catenin

AJSP 2015.

Clinical

Treatment

- Radical orchiectomy
- Retroperitoneal LND if Rad evidence of disease
- Close follow up or LND if concerning pathologic features
- Chemo/XRT not proven to be effective

Features that correspond with a malignant course

- Diameter ≥ 5 cm
- Necrosis
- **Mod** -> Sev Cytologic Atypia
- **Vascular invasion**
- > 5 mit/10 hpf

Young et al. AJSP 1998.

References

Young RH, Koelliker DD, Scully RE. Sertoli Cell Tumors of the Testis, Not Otherwise Specified: A Clinicopathologic Analysis of 60 Cases. Am J. Surg Pathol 1998;22:709-721.

Zhang C, Ulbright T M. 2015. Nuclear Localization of β-Catenin in Sertoli Cell Tumors and Other Sex Cord-Stromal Tumors of the Testis: An Immunohistochemical Study of 87 Cases. The American journal of surgical pathology 39 (10): 1390-1394.