MARCH 2020 DIAGNOSIS LIST

20-0301: pseudoangiomatous spindle cell lipoma (soft tissue/soft tissue pathology)
20-0302: nodular elastosis (liver/neoplastic liver pathology)
20-0303: anastomosing hemangioma, GNA11 mutated (mandible/soft tissue pathology)
20-0304: radiation cystitis (pseudocarcinomatous hyperplasia) (bladder/GU pathology)
20-0305: ORISE injection lifting agent (colon/GI pathology)
20-0306: metastatic angiosarcoma (bone/soft tissue pathology)
20-0307: ALK positive large B-cell lymphoma (lymph node/hematopathology)
20-0308: tanycytic ependymoma (brain/neuropathology)
20-0309: subcutaneous panniculitis-like T-cell lymphoma (skin/hematopathology&dermatopathology)
20-0310: primary cutaneous gamma/delta T-cell lymphoma (skin/hematopathology&dermatopathology)

Disclosures
March 9, 2020

Dr. Ankur Sangoi has disclosed a financial relationship with Google (consultant). Dr. Keith Duncan has disclosed a financial relationship with Abbvie (consultant/contractor). Dr. Robert Novoa has disclosed a financial relationship with Enspectra (consultant with stock options). South Bay Pathology Society has determined that these relationships are not relevant to the planning of the activity (Dr. Sangoi) or the clinical cases being presented.

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

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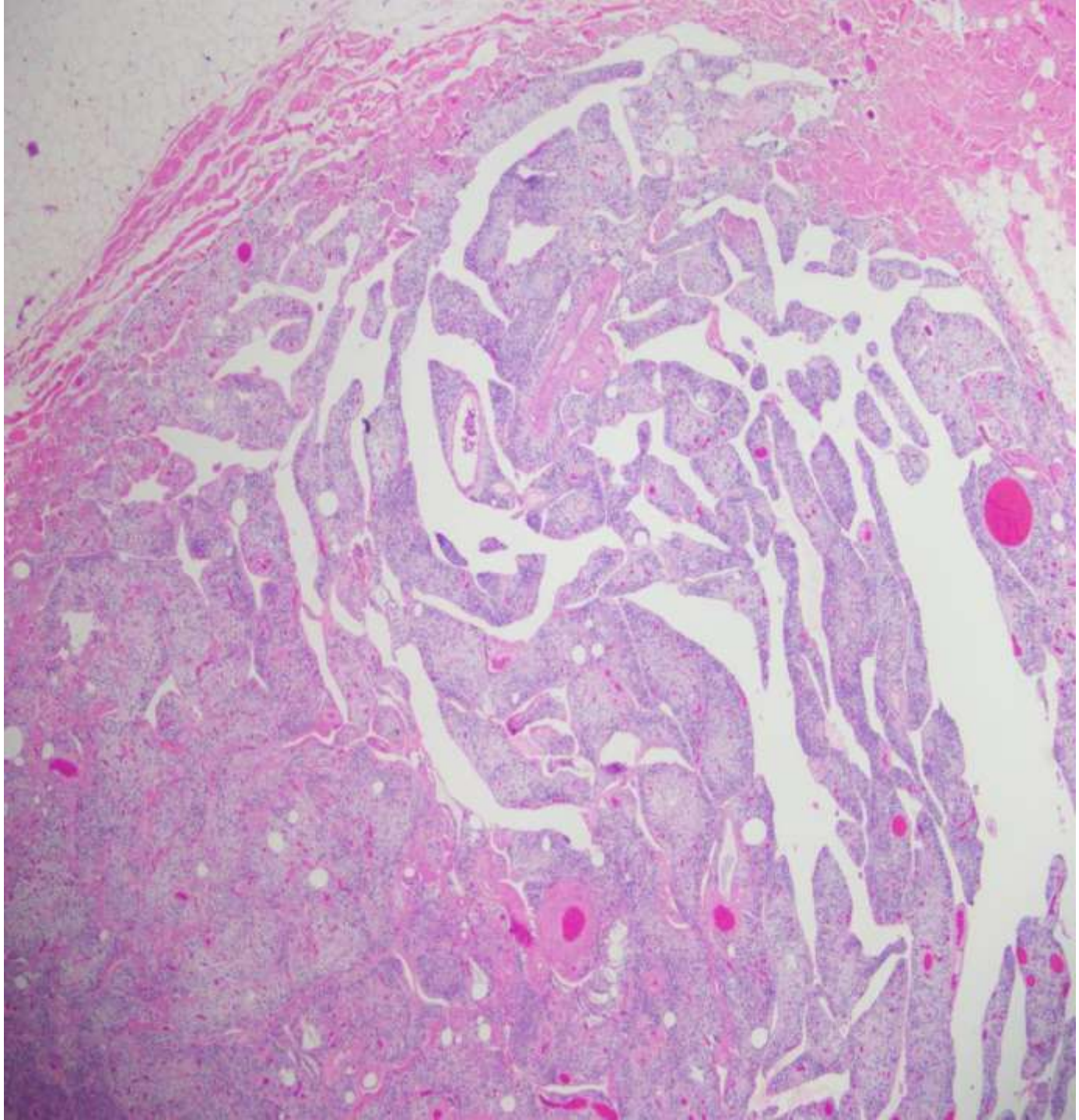
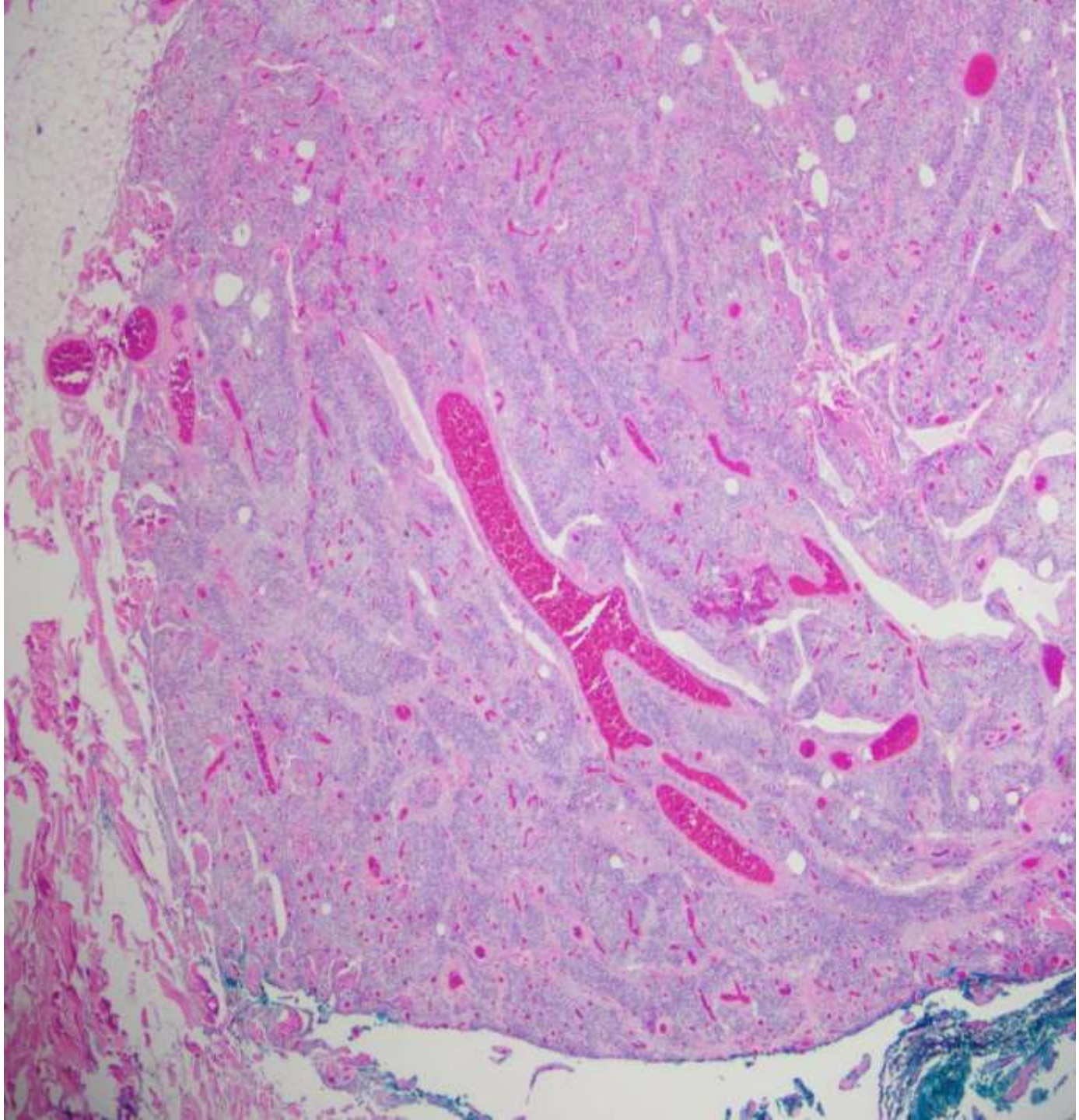
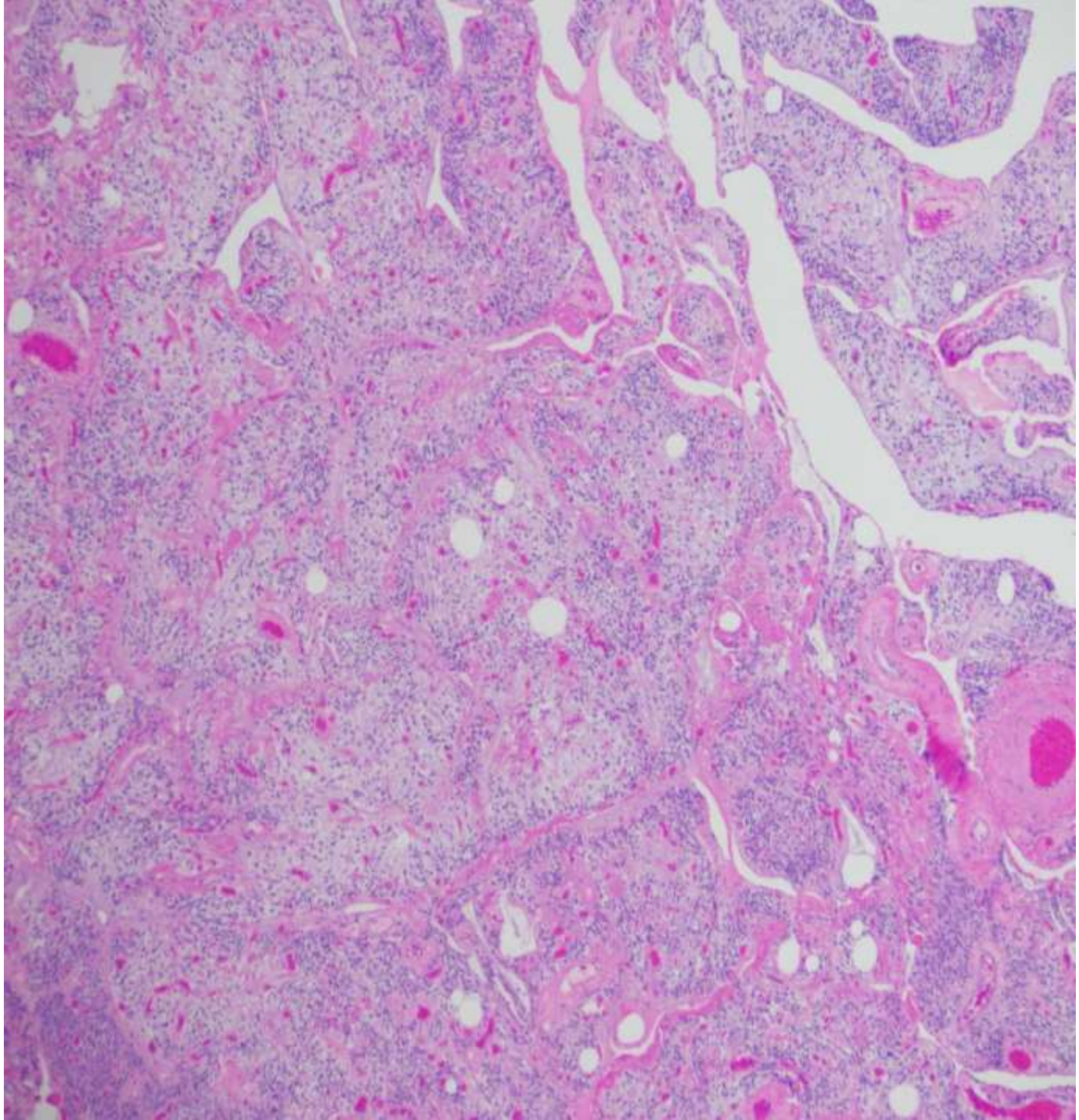
20-0301

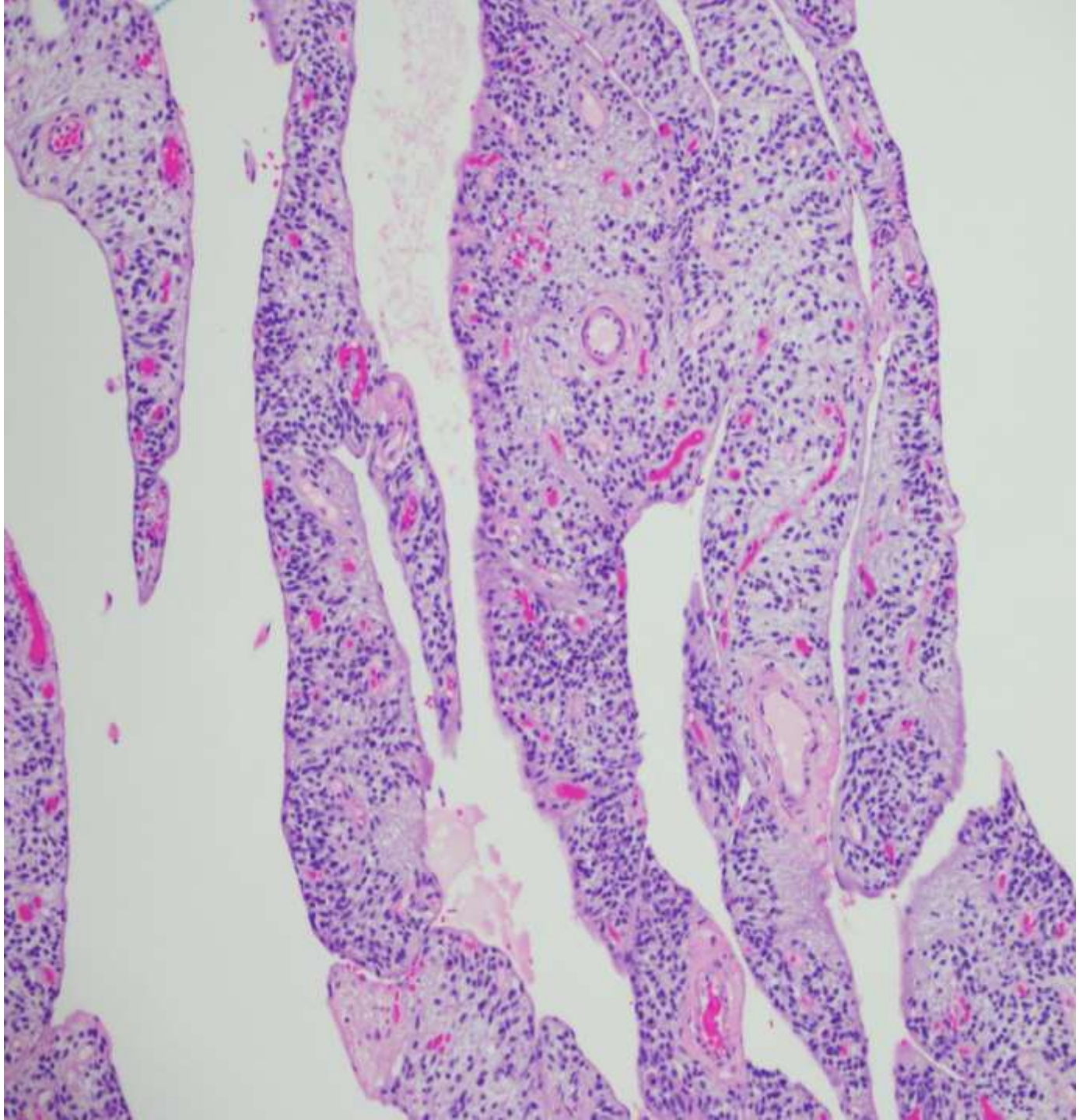
Armen Khararjian; Kaiser Walnut Creek

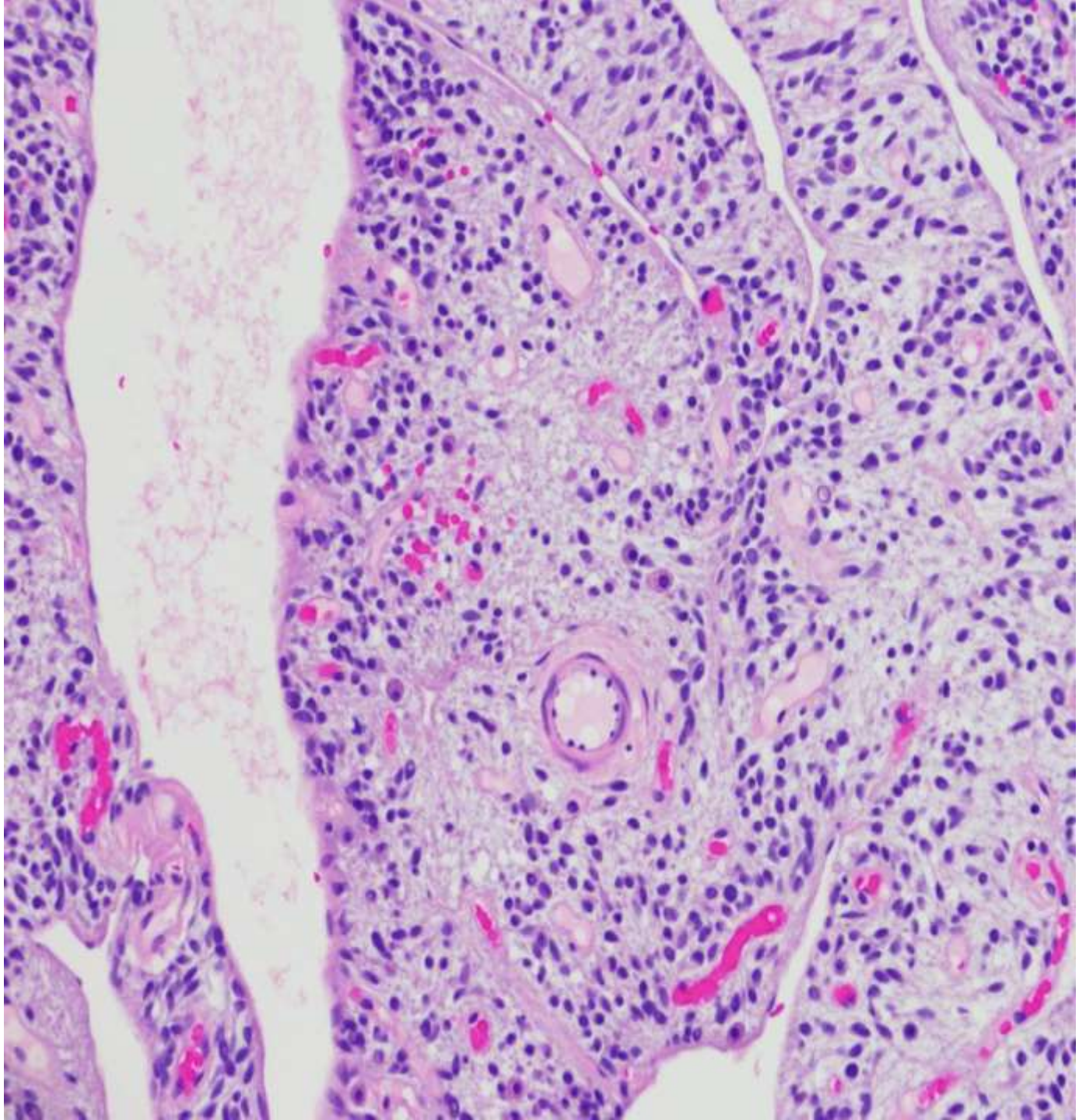
75-year-old M with inferior neck mass.

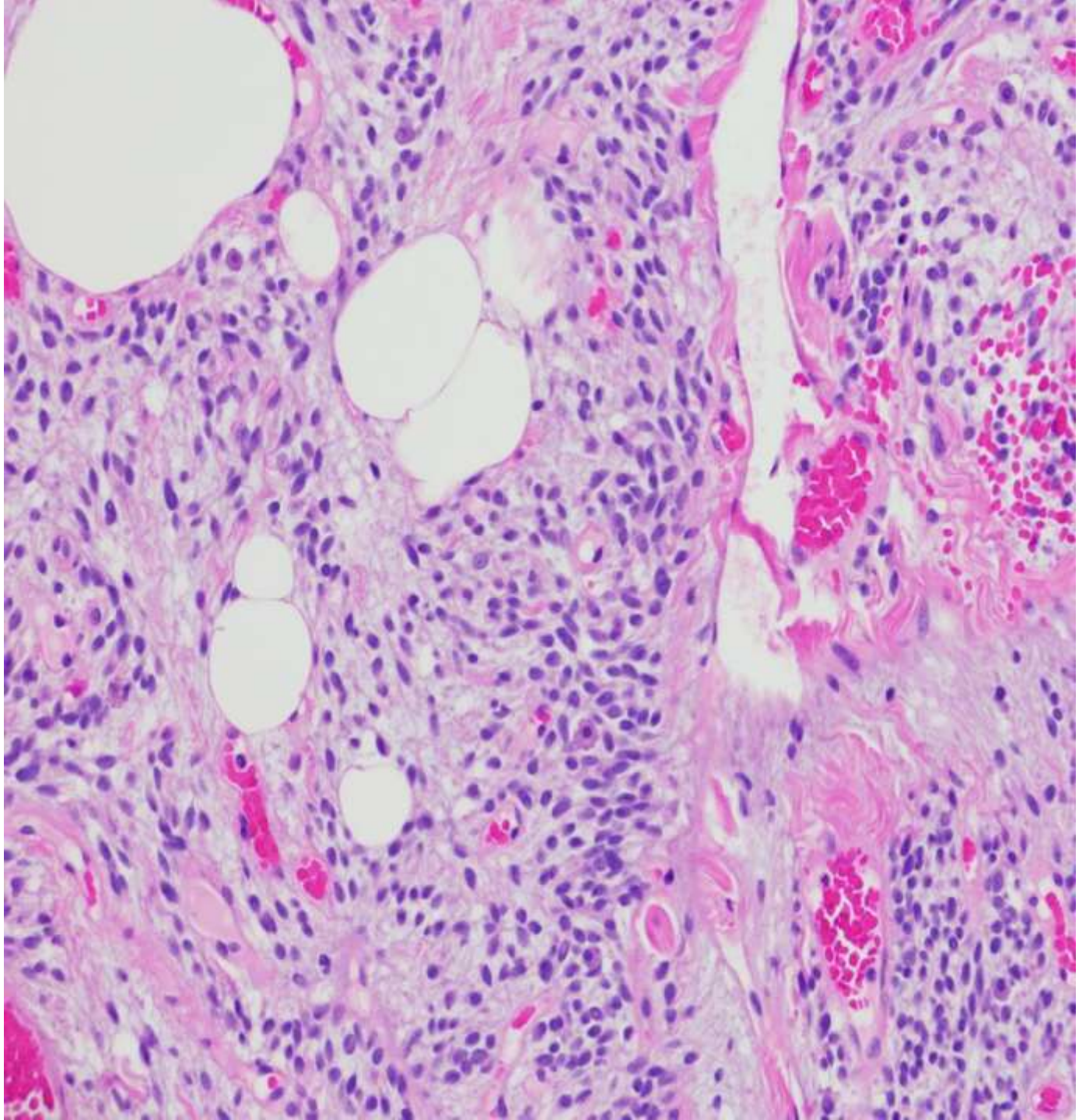




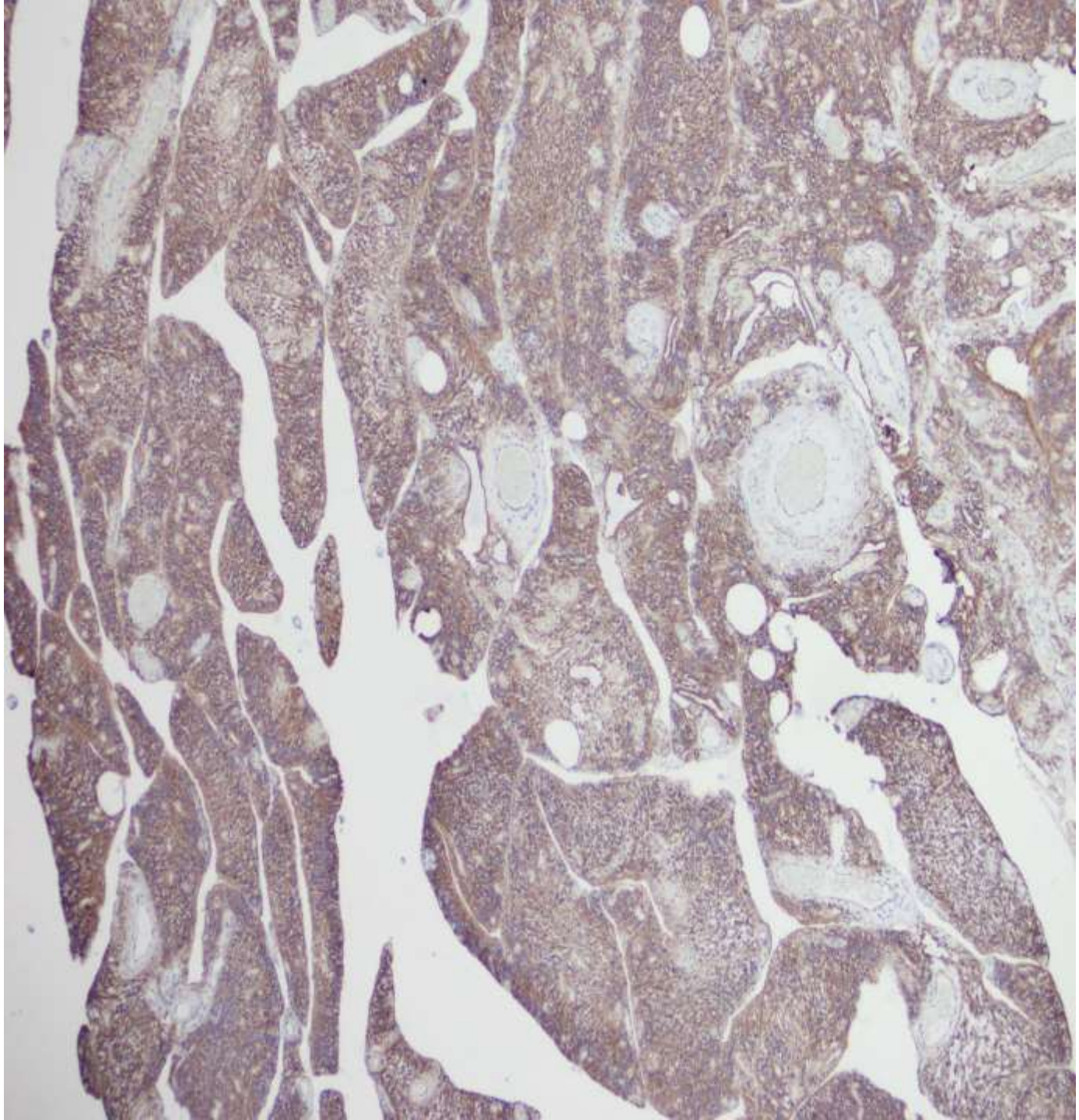








DIAGNOSIS?



CD34

Pseudoangiomatous Spindle Cell Lipoma

- Spindle cell/pleomorphic lipoma
  - Most common in men 45-60
  - Subcutaneous tissue of posterior neck, shoulder, and back (80%)
  - Wide range of histologic appearances
    - Fat rich, fat poor, myxoid, etc
    - Classic has a relative equal mixture of cell types
    - Mast cells and ropey collagen are common
  - CD34 positive
  - Loss of 16q material (less frequently 13q)

Pseudoangiomatous Spindle Cell Lipoma

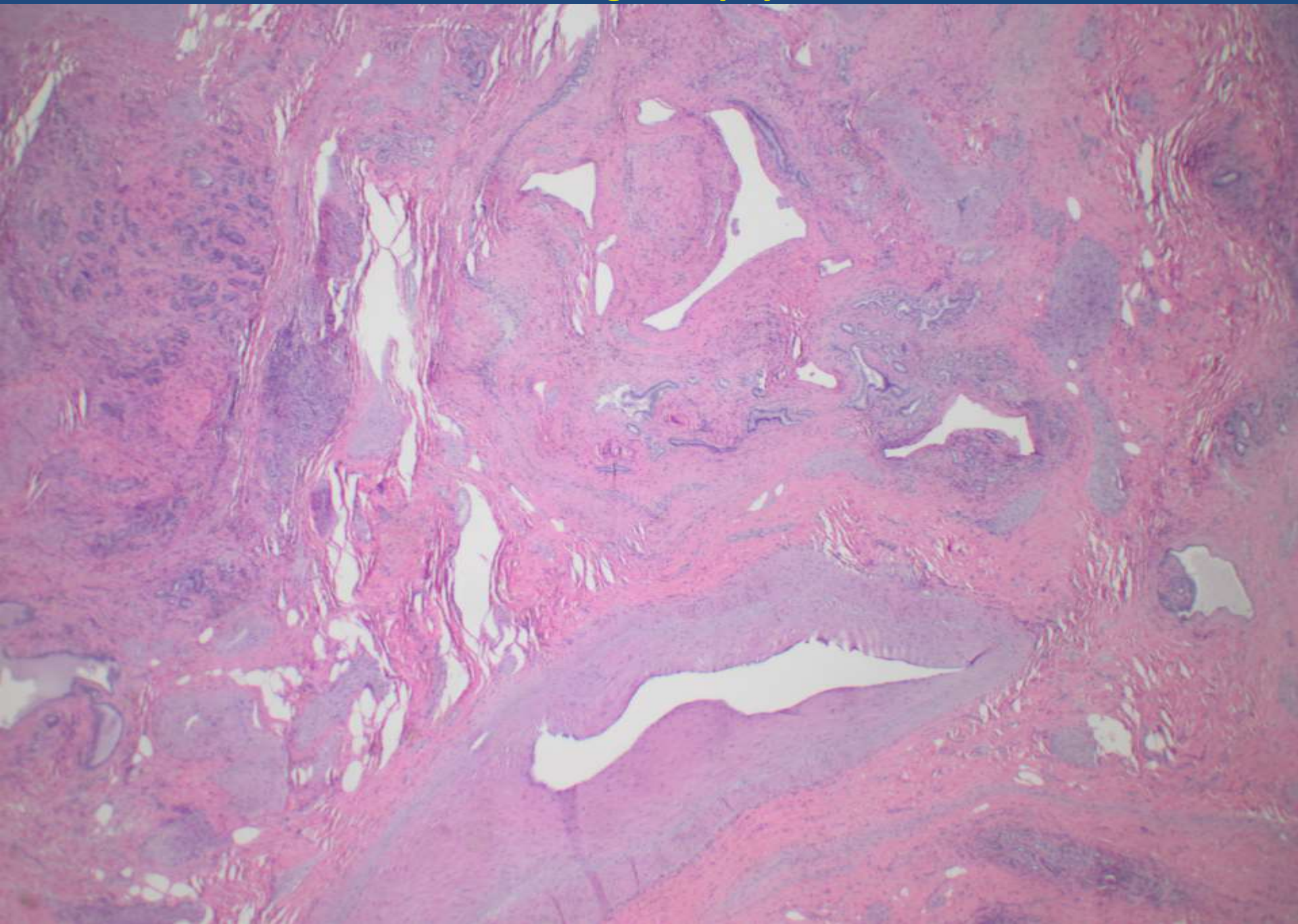
- Rare variant (1-2% of SCL)
- Characterized by irregular branching spaces with papillary projections
- Some studies suggest that cells lining the spaces are endothelial
  - ? Truly angiomatous
- No clinical implication

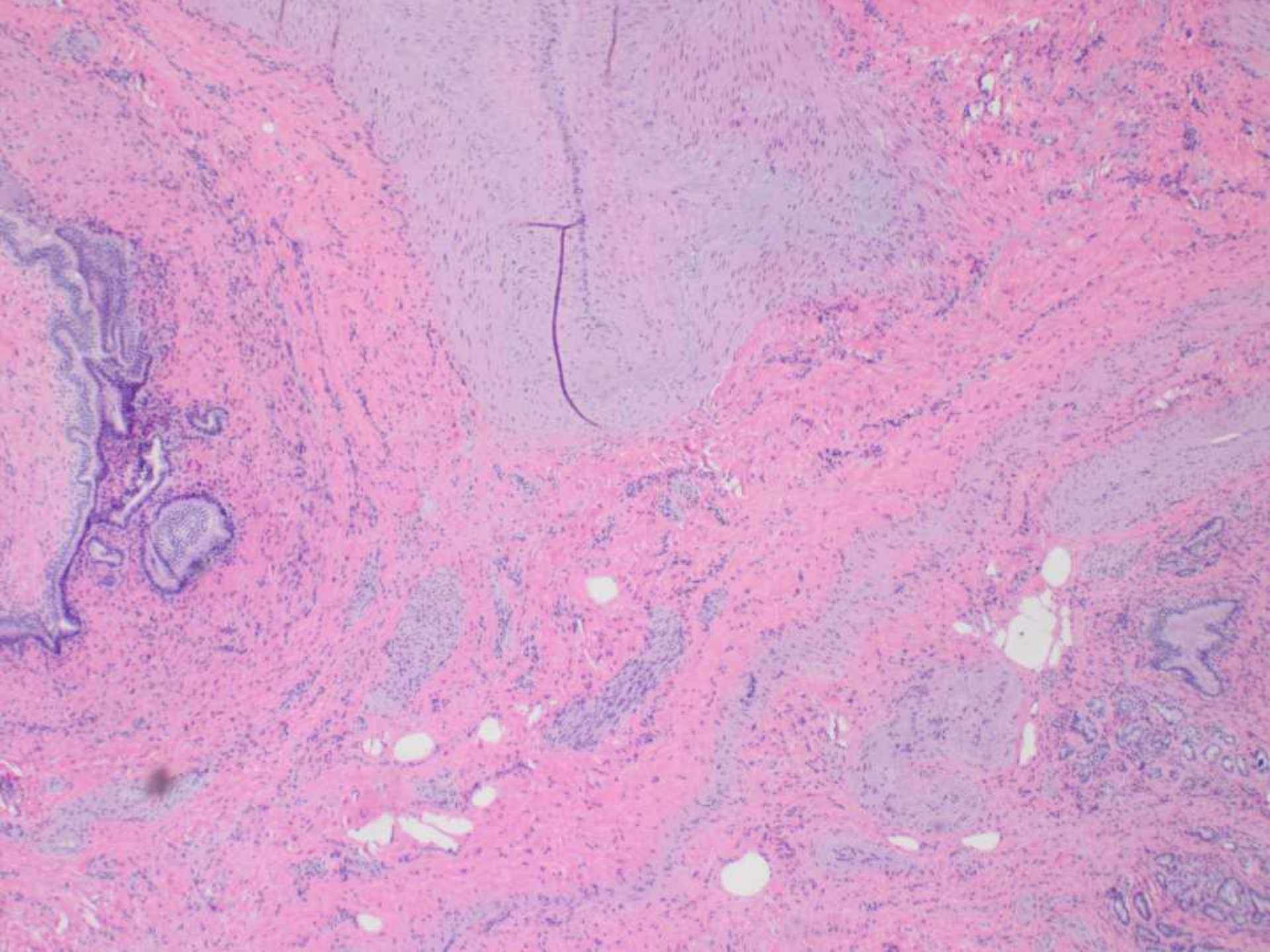
20-0302

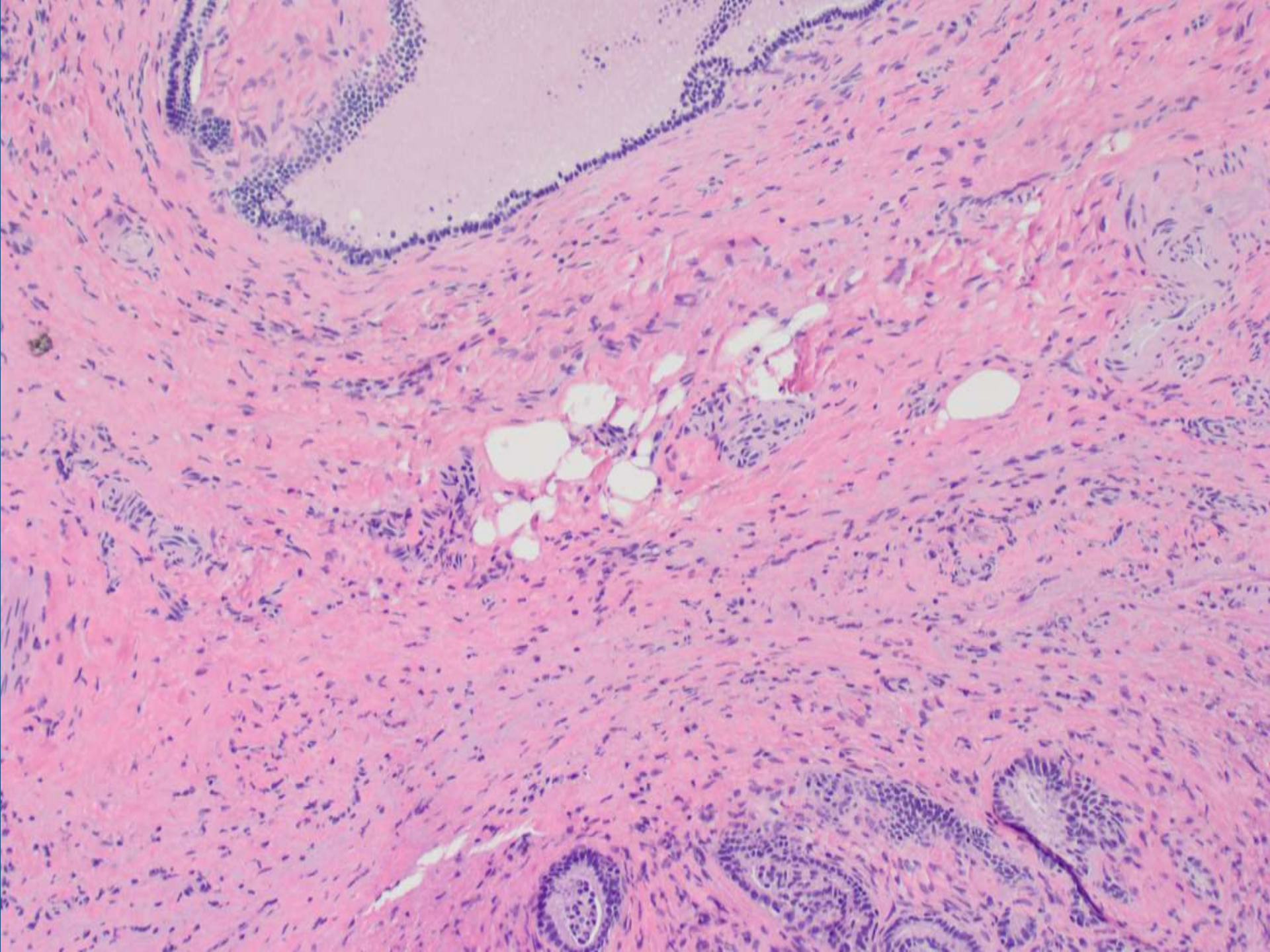
Sanjay Kakar; UCSF

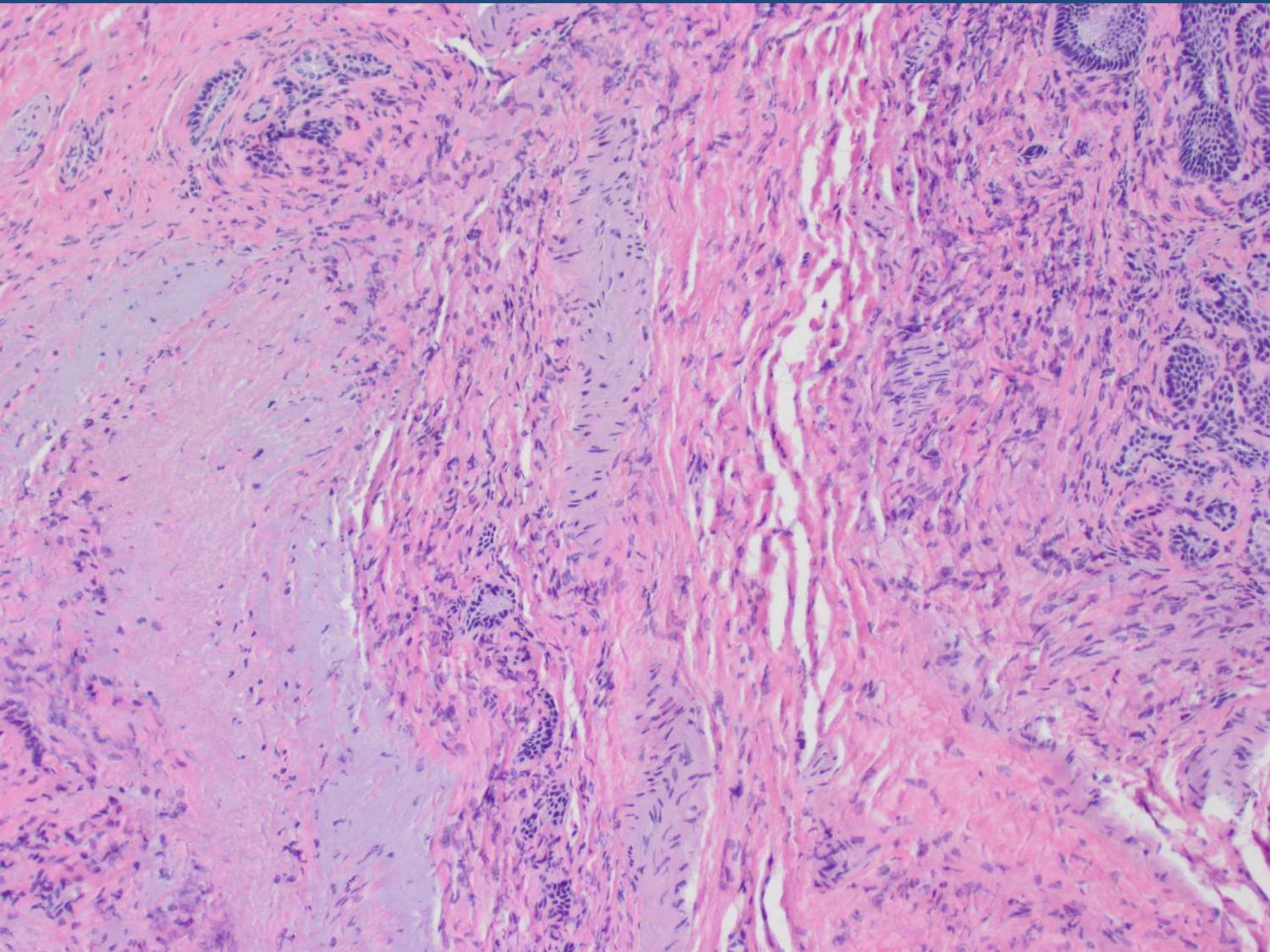
66-year-old M with 3cm renal mass and 6cm liver mass. Renal biopsy showed clear cell RCC. Initial liver biopsy was limited and showed “spindle cell proliferation” (not available for review). Core and wedge liver biopsies obtained from the mass during removal of gallstone.

Wedge biopsy

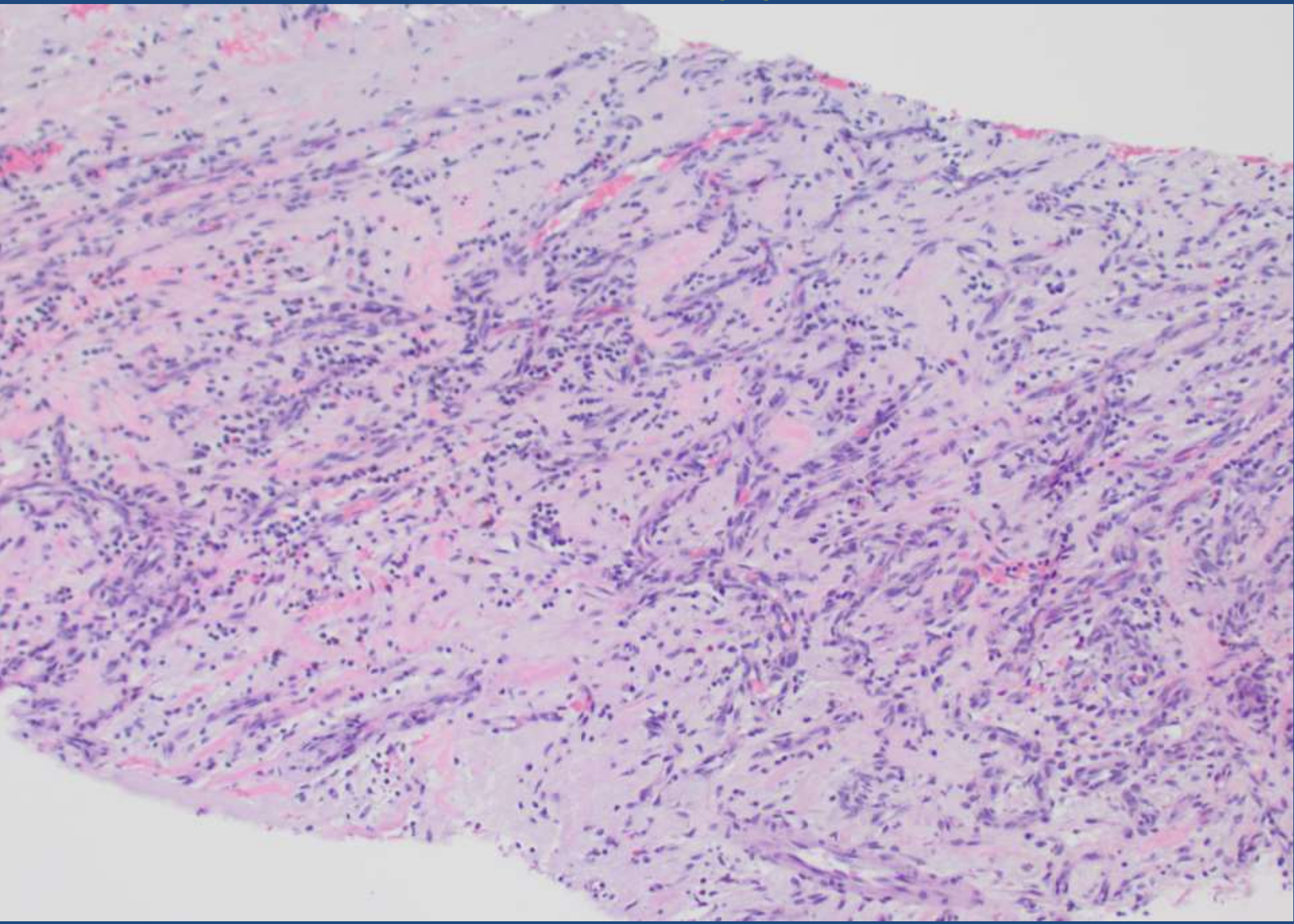


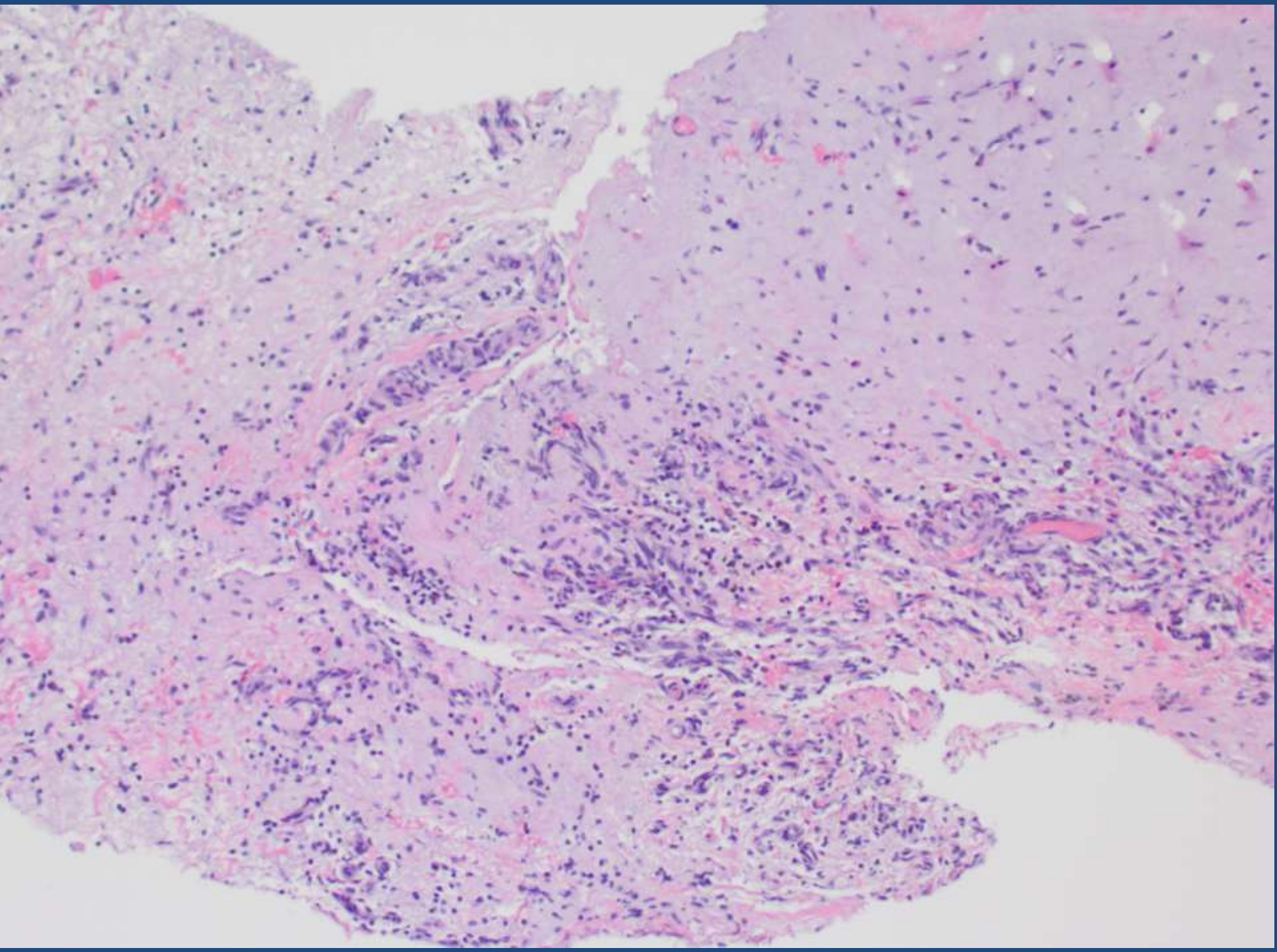


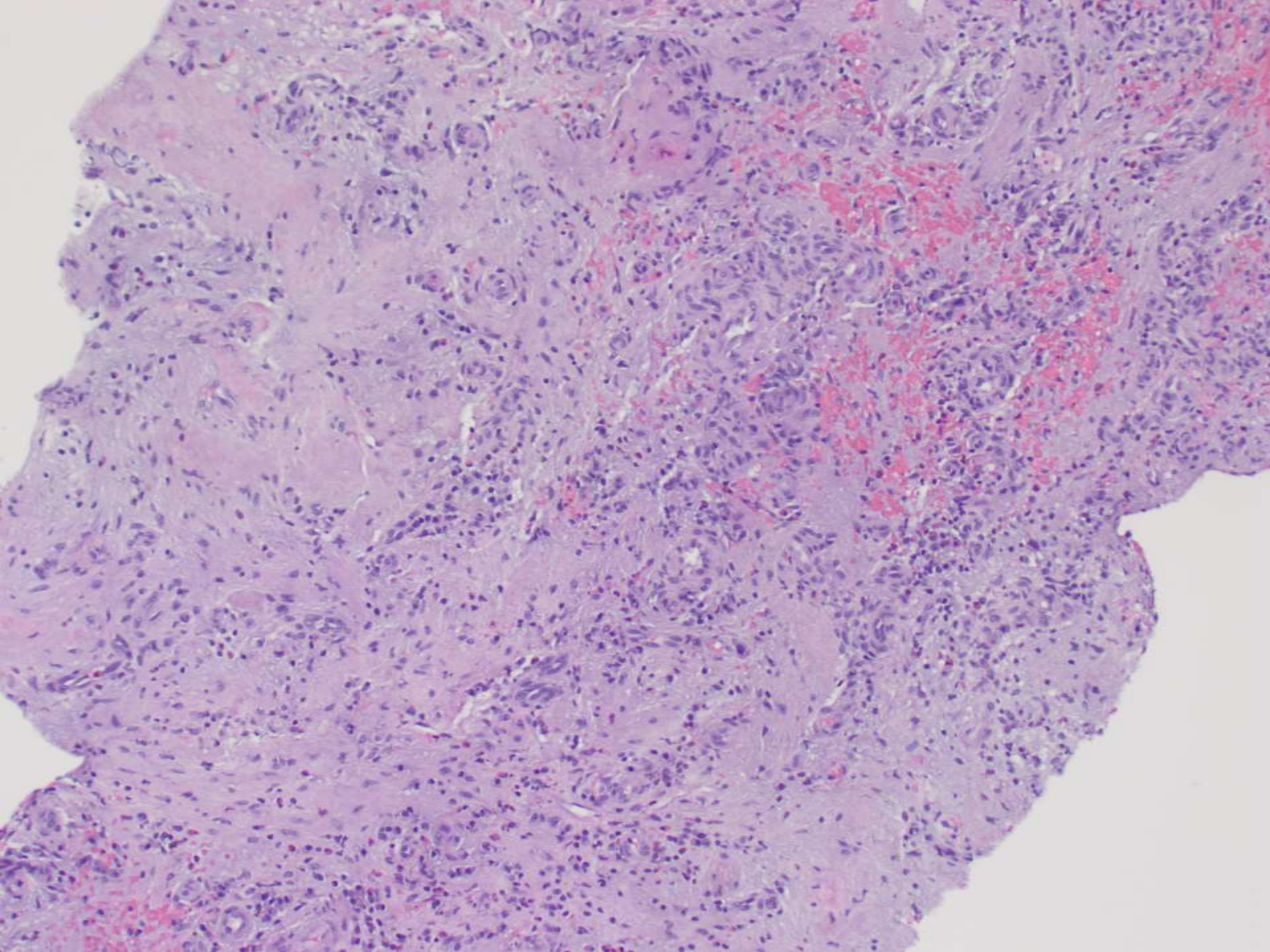


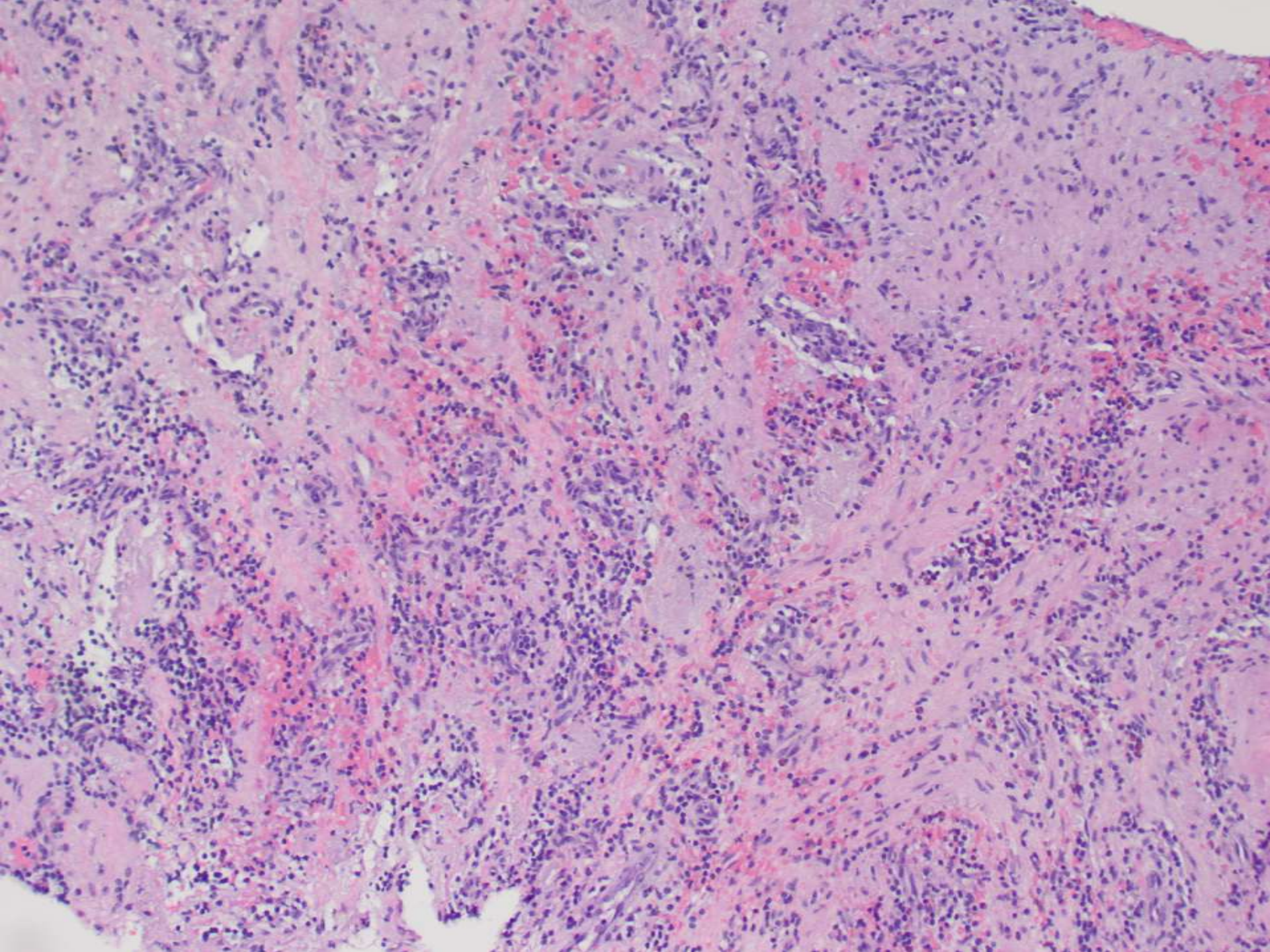


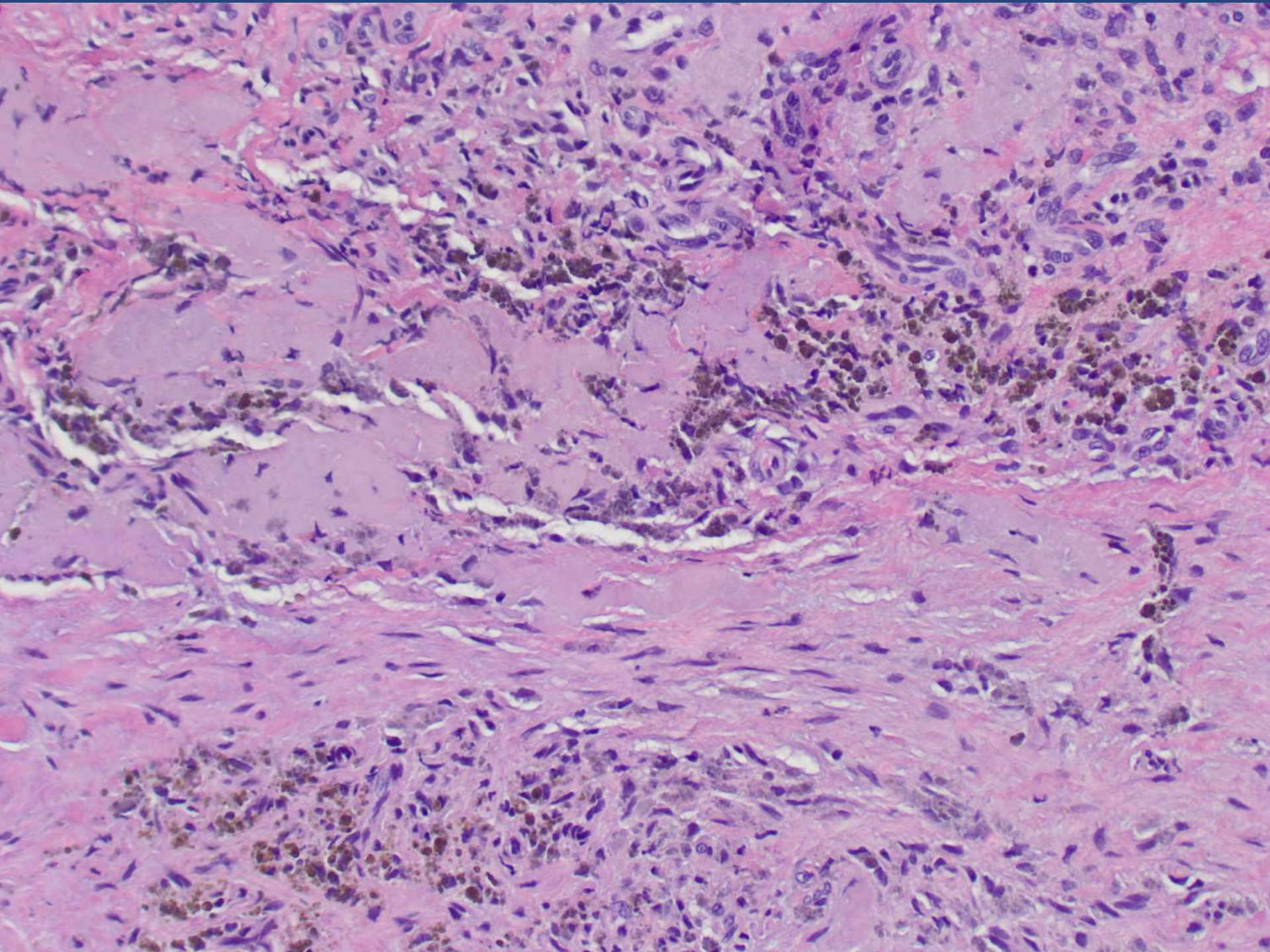
Needle biopsy

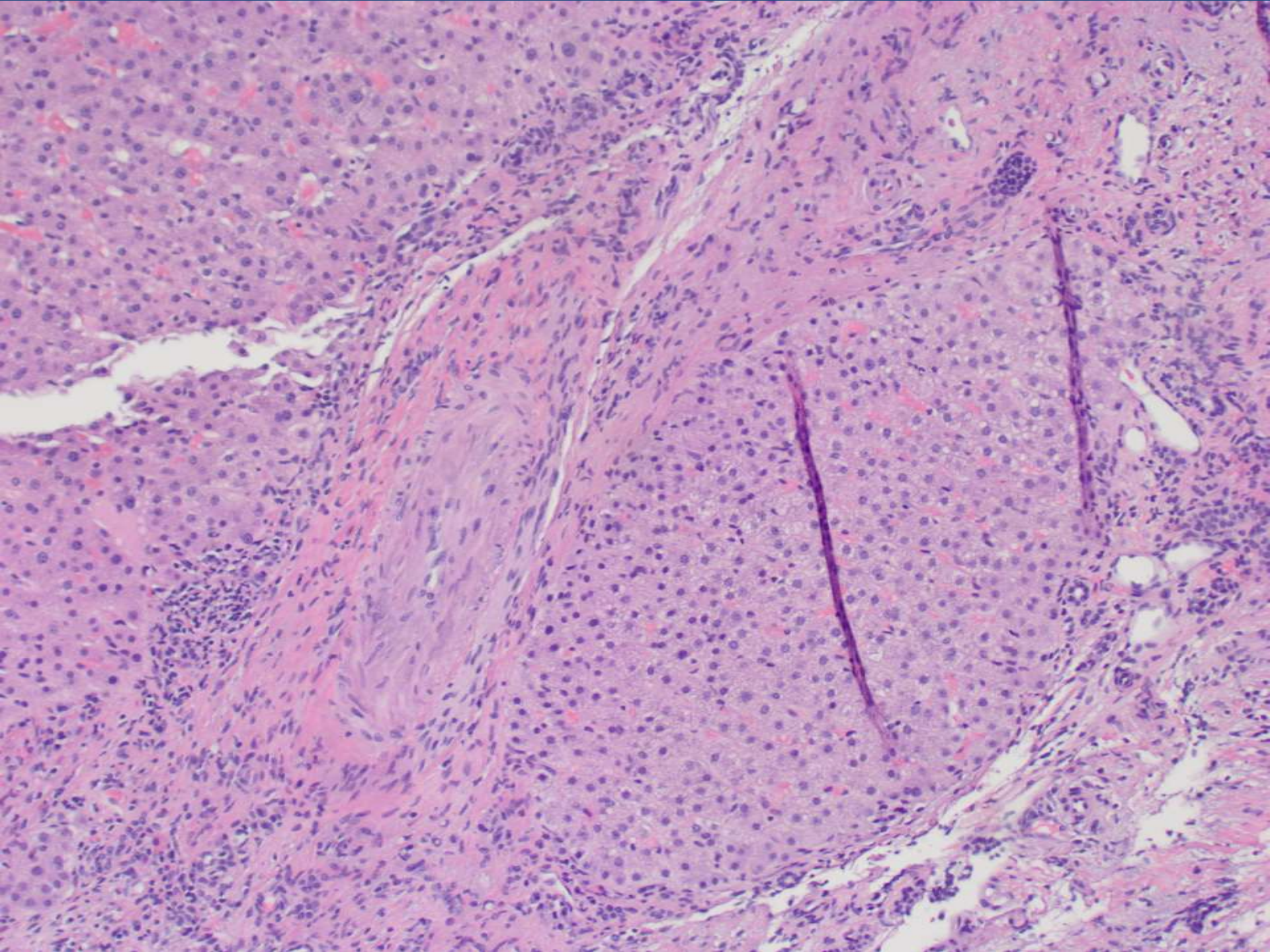












DIAGNOSIS?

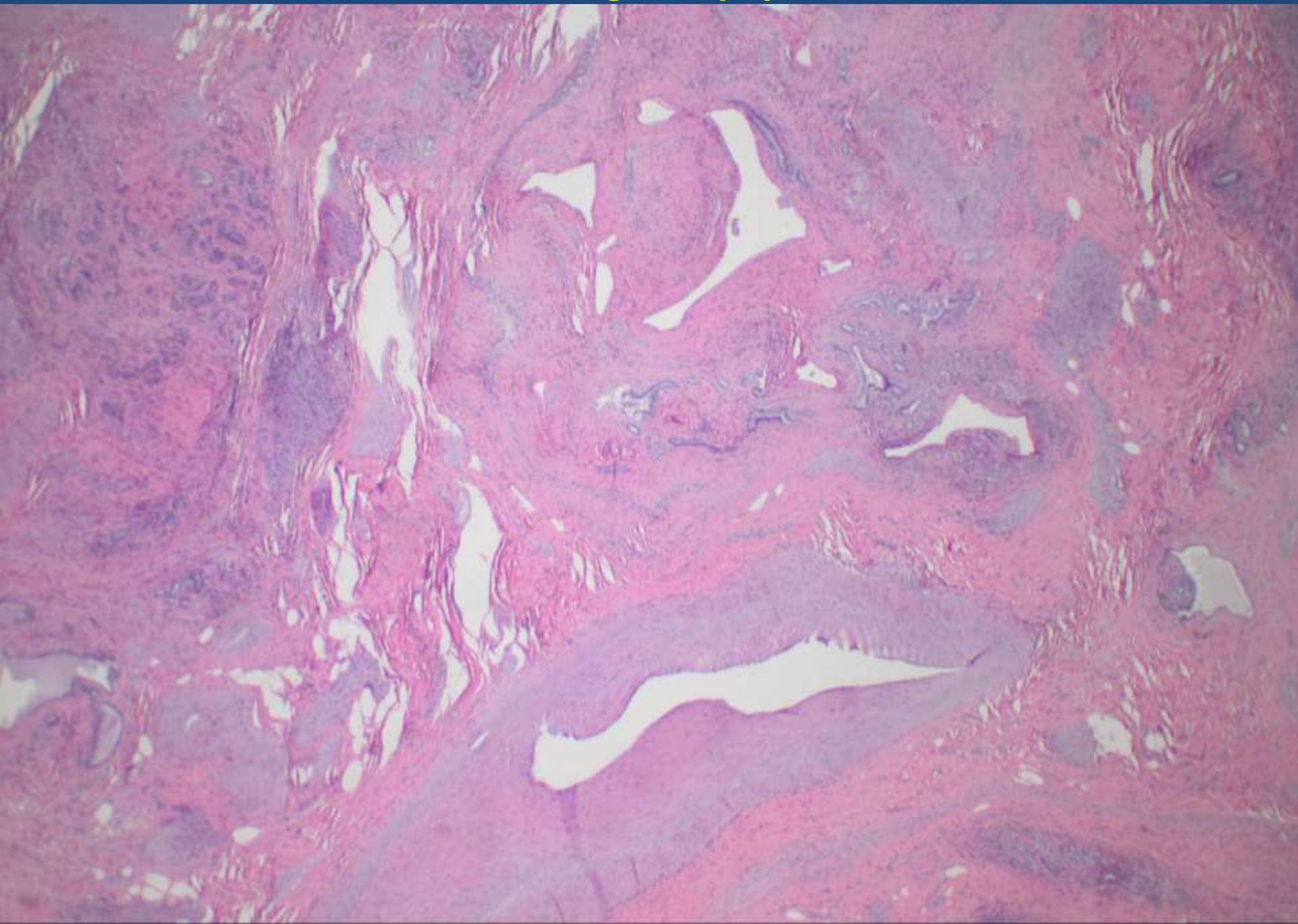
History

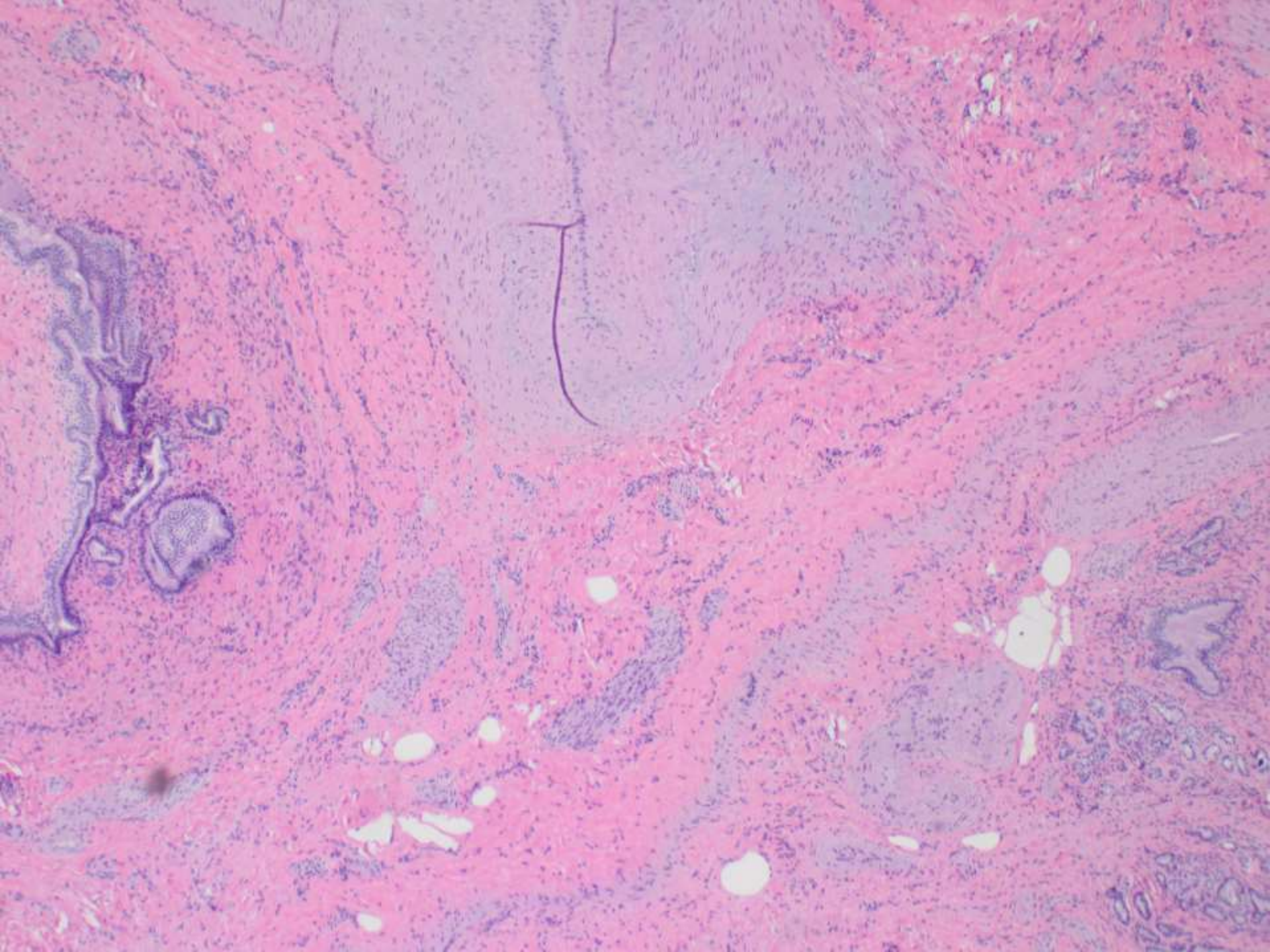
- 66/M with 3 cm renal mass and 6 cm liver mass
- Renal biopsy showed clear cell RCC
- Initial liver biopsy was limited and showed ‘spindle cell proliferation’ (not available for review)
- Core and wedge liver biopsies obtained from the mass during removal of gallstone

Differential diagnosis

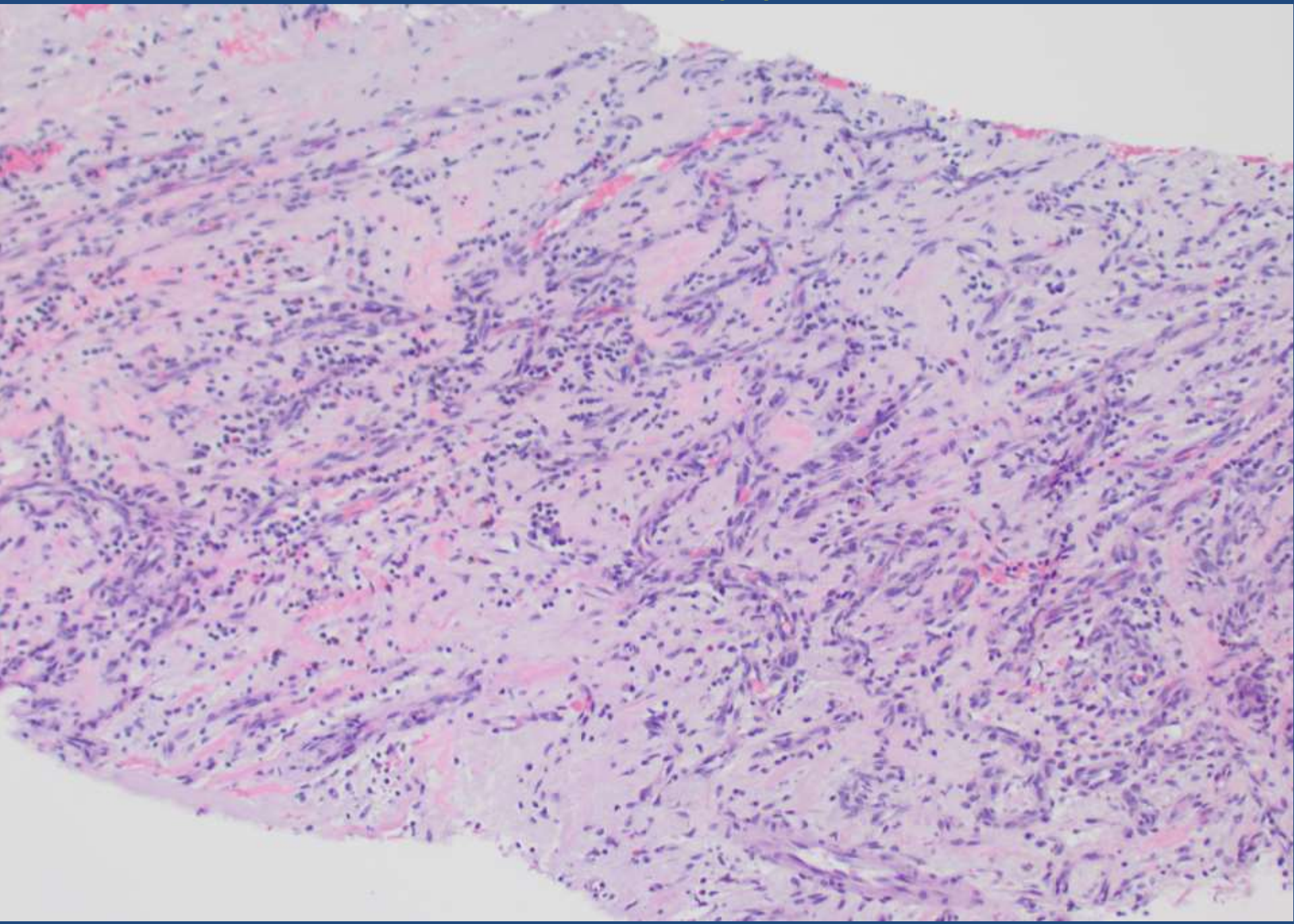
- Focal nodular hyperplasia
- Bile duct adenoma/biliary adenofibroma
- Hemangioma
- Vascular lesion

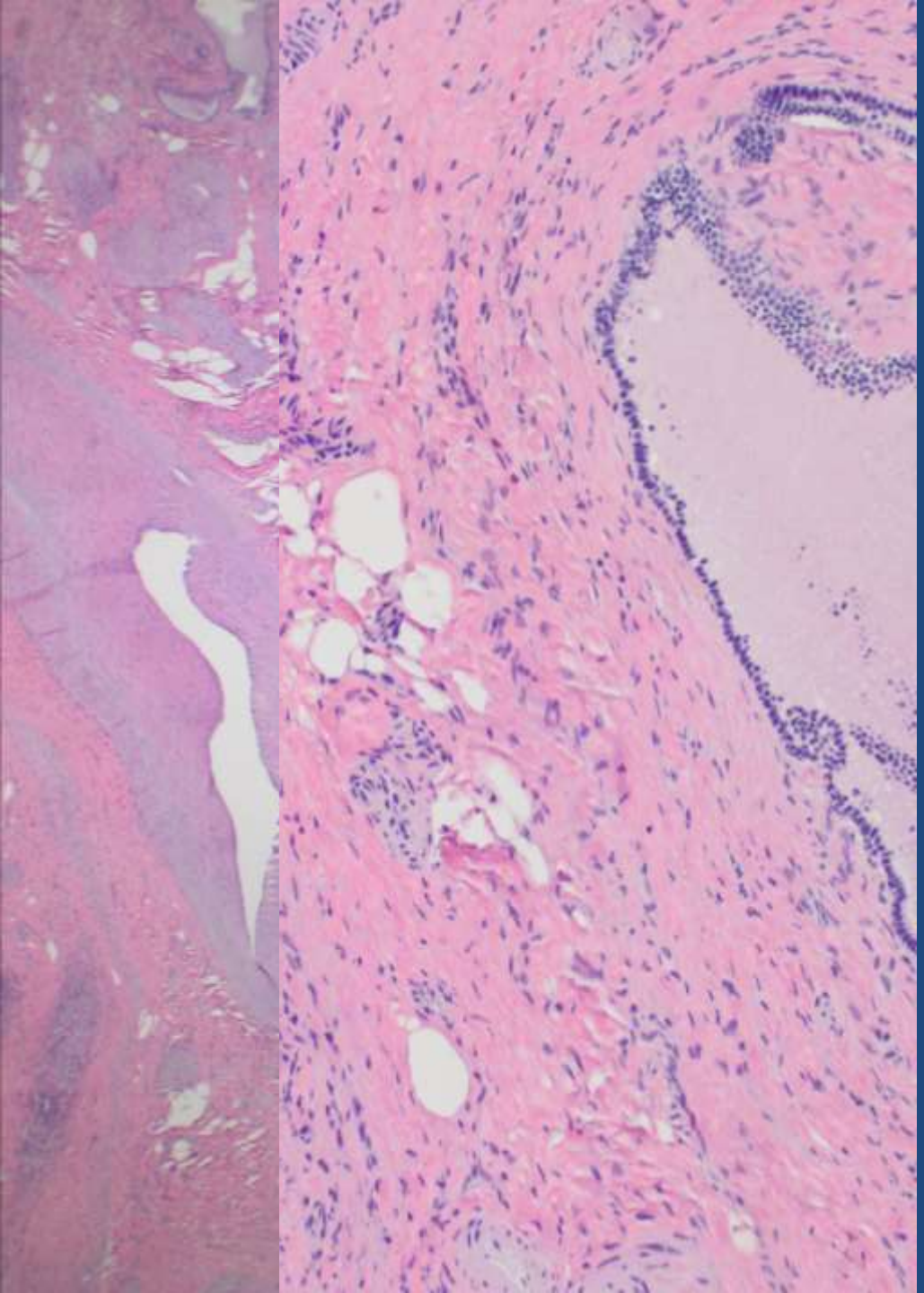
Wedge biopsy





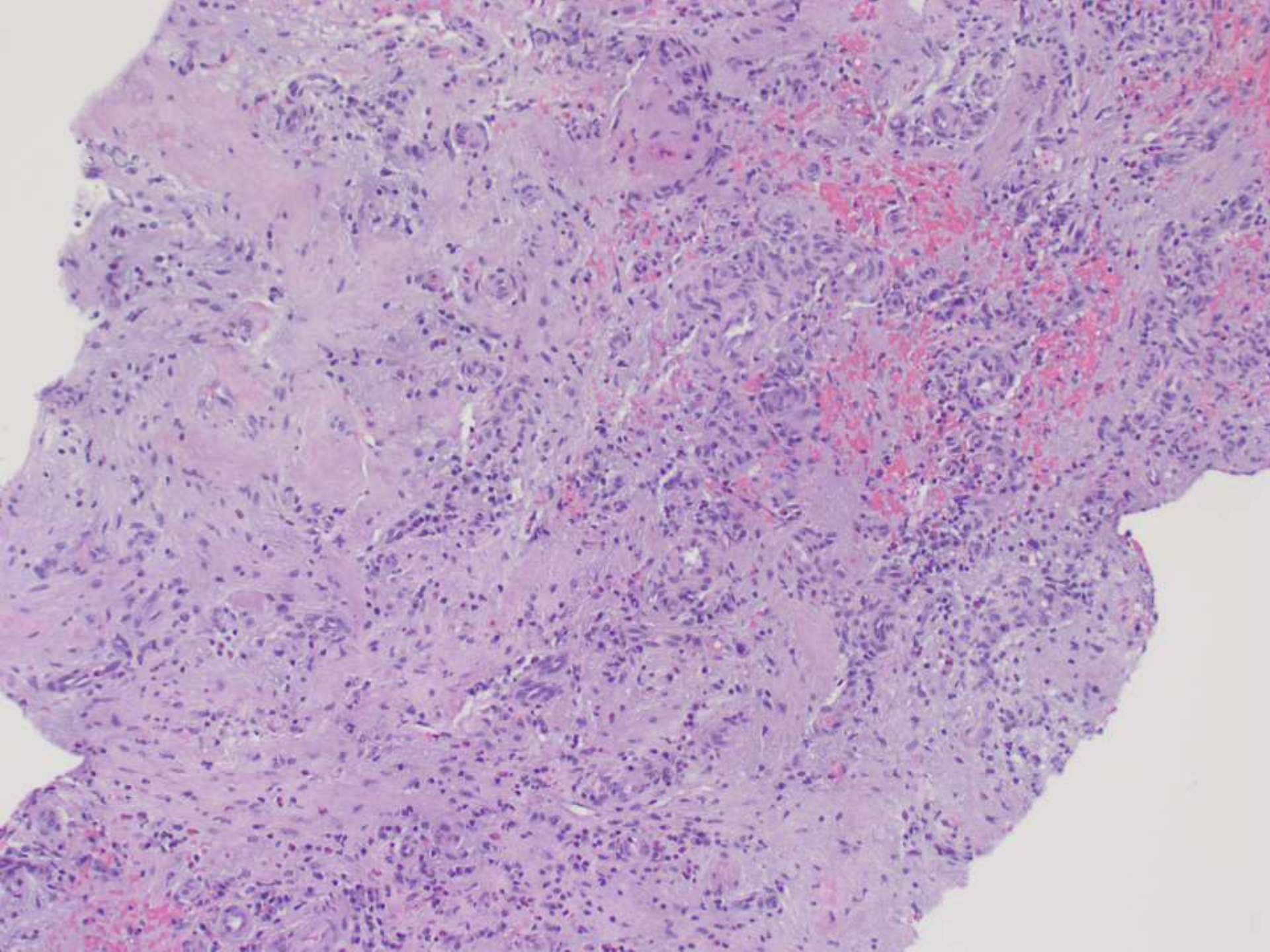
Needle biopsy

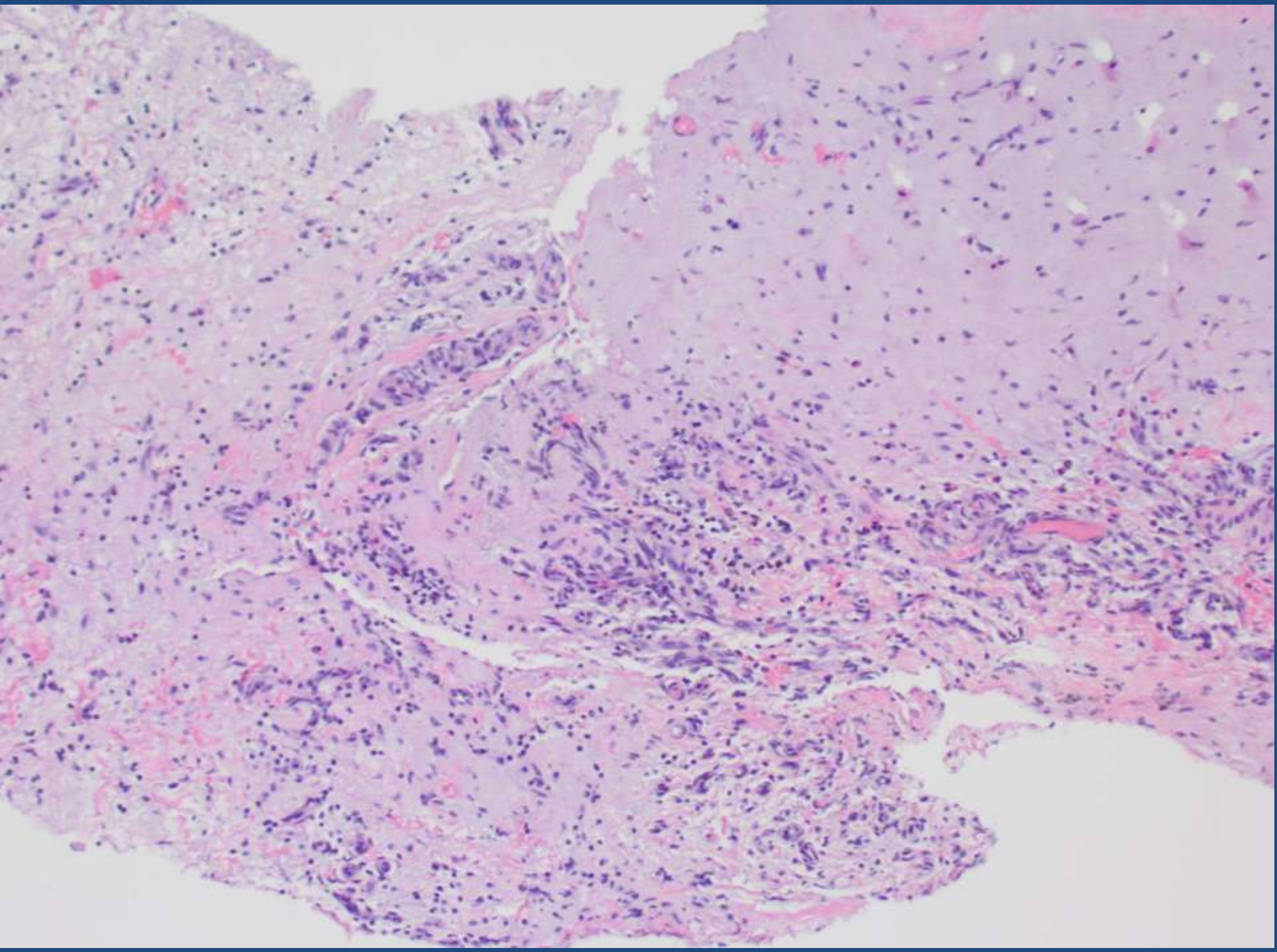




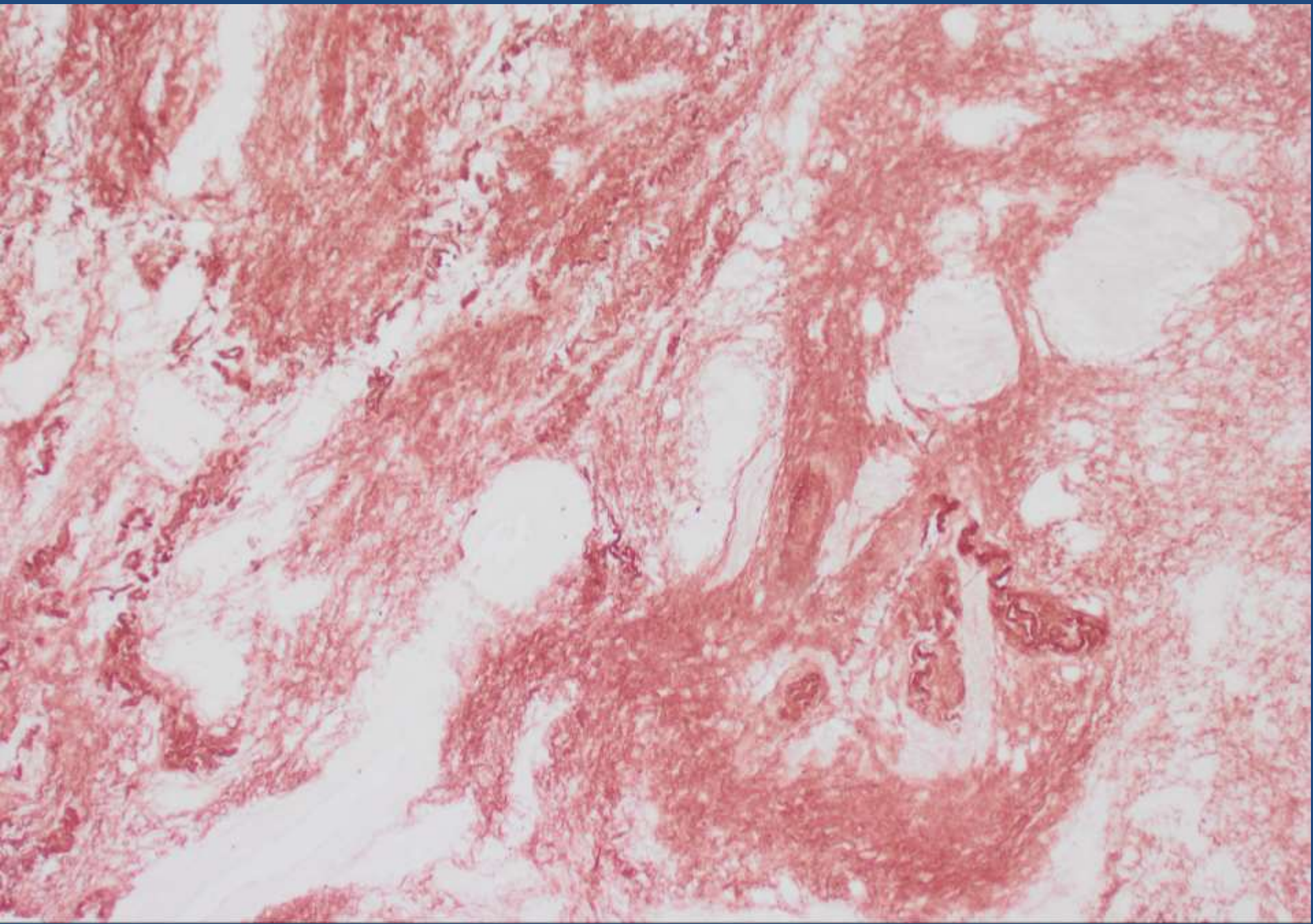
Salient features

- Vascular changes
- Parenchymal loss
- Ductular reaction
- Biliary dilatation

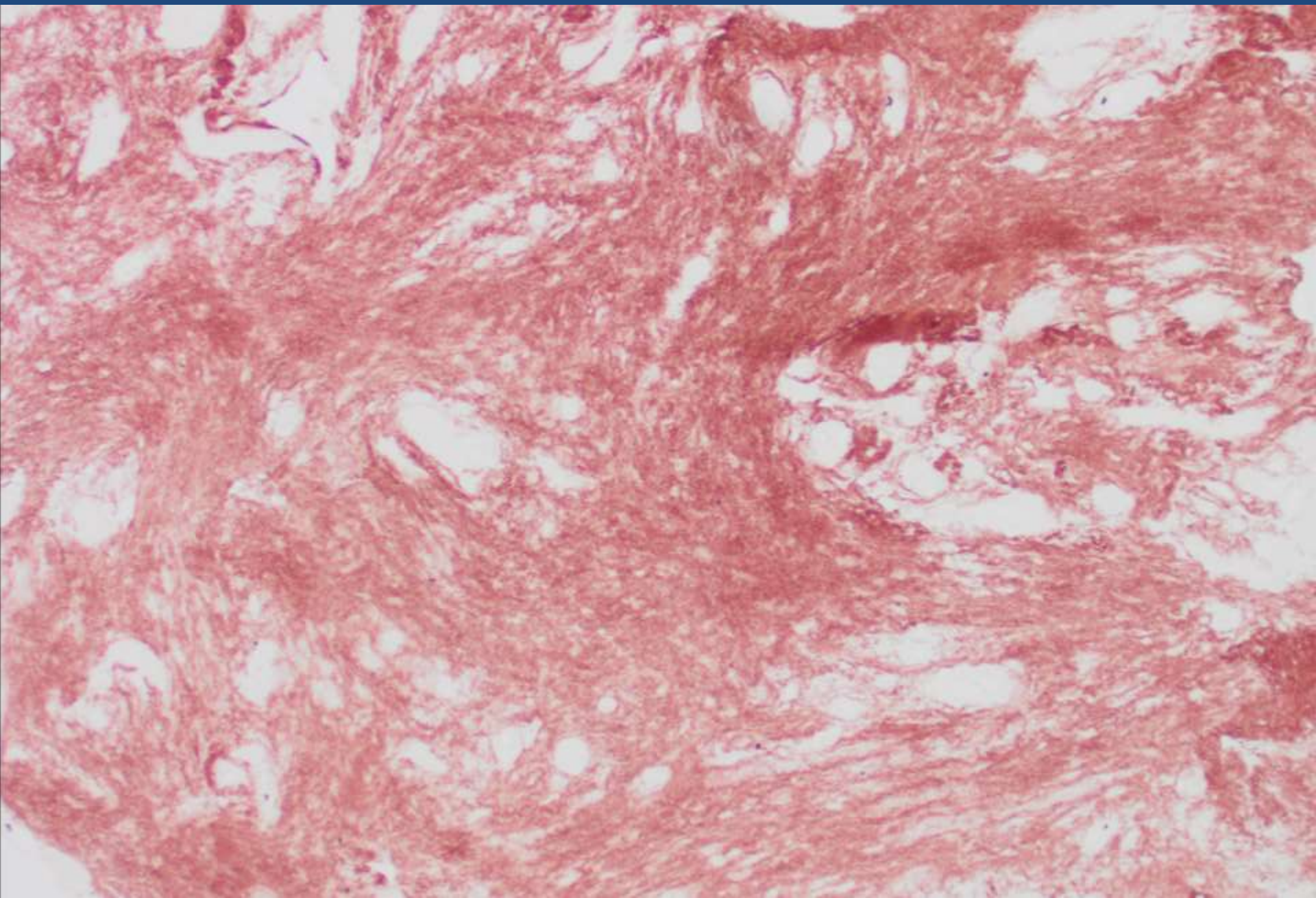




Orcein stain (elastic fibers)



Orcein stain: elastotic nodules



Segmental atrophy (Nodular elastosis)

Early changes	Late changes
Collapse of hepatic parenchyma between intact portal tracts Islands of residual hepatocytes	Prominent elastosis
Chronic inflammation Prominent ductular reaction	Less inflammation and ductular reaction
Mild elastosis	Nodular foci of fibrosis/elastosis

Singhi, AJSP 2011

Nodular elastosis

Mass lesion

- Often subcapsular, up to 10 cm
- CT contrast : Hypodense
- Similar changes adjacent to other tumors

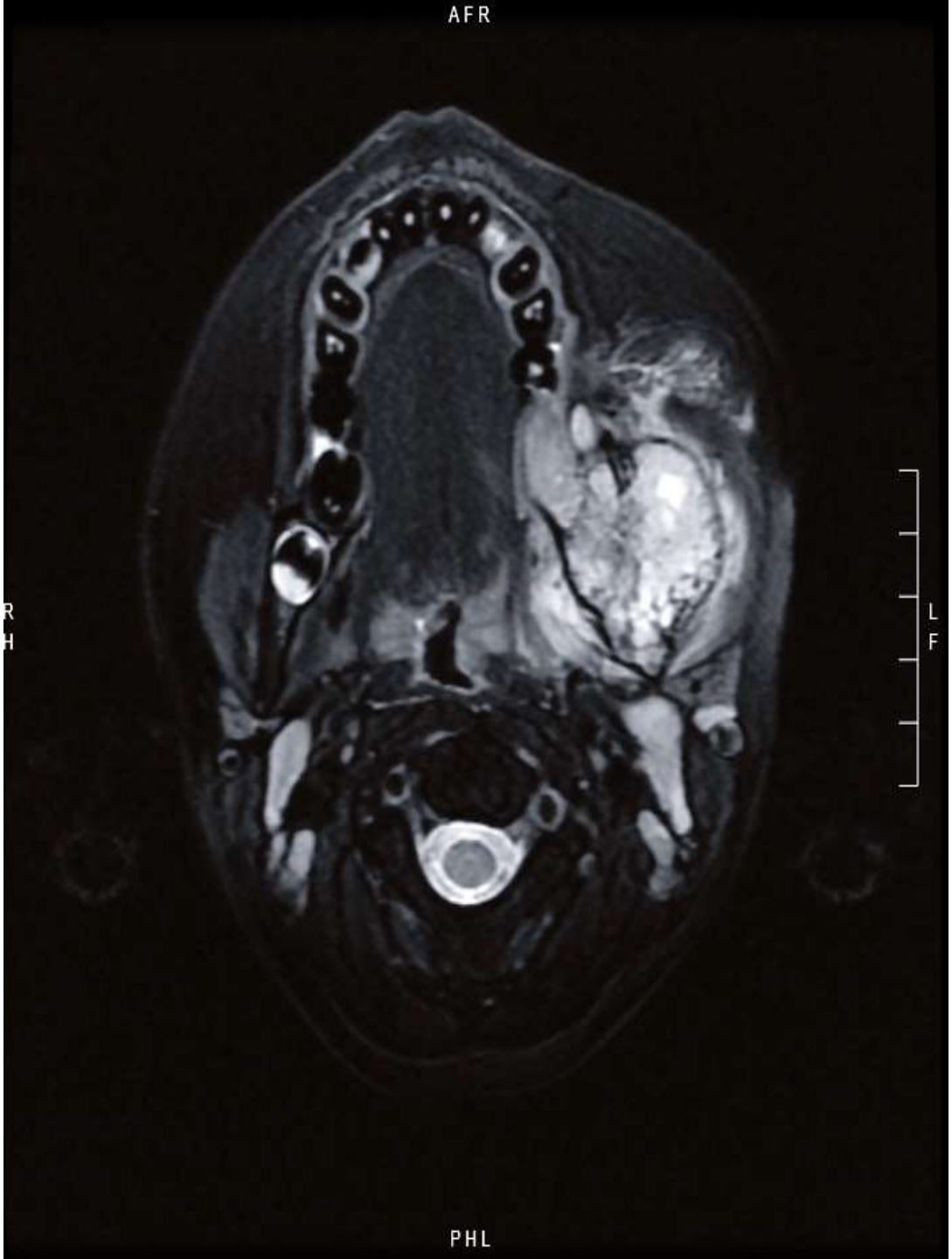
Singhi, AJSP 2011

Garg, Abd Radiol 2017

20-0303

Kevin Kolahi/Kim Hazard; Stanford

12-year-old M with h/o of thalassemia minor presenting with oral cavity mass in the left retromolar trigone, who underwent partial resection in 2017 and with recurrence in 2019.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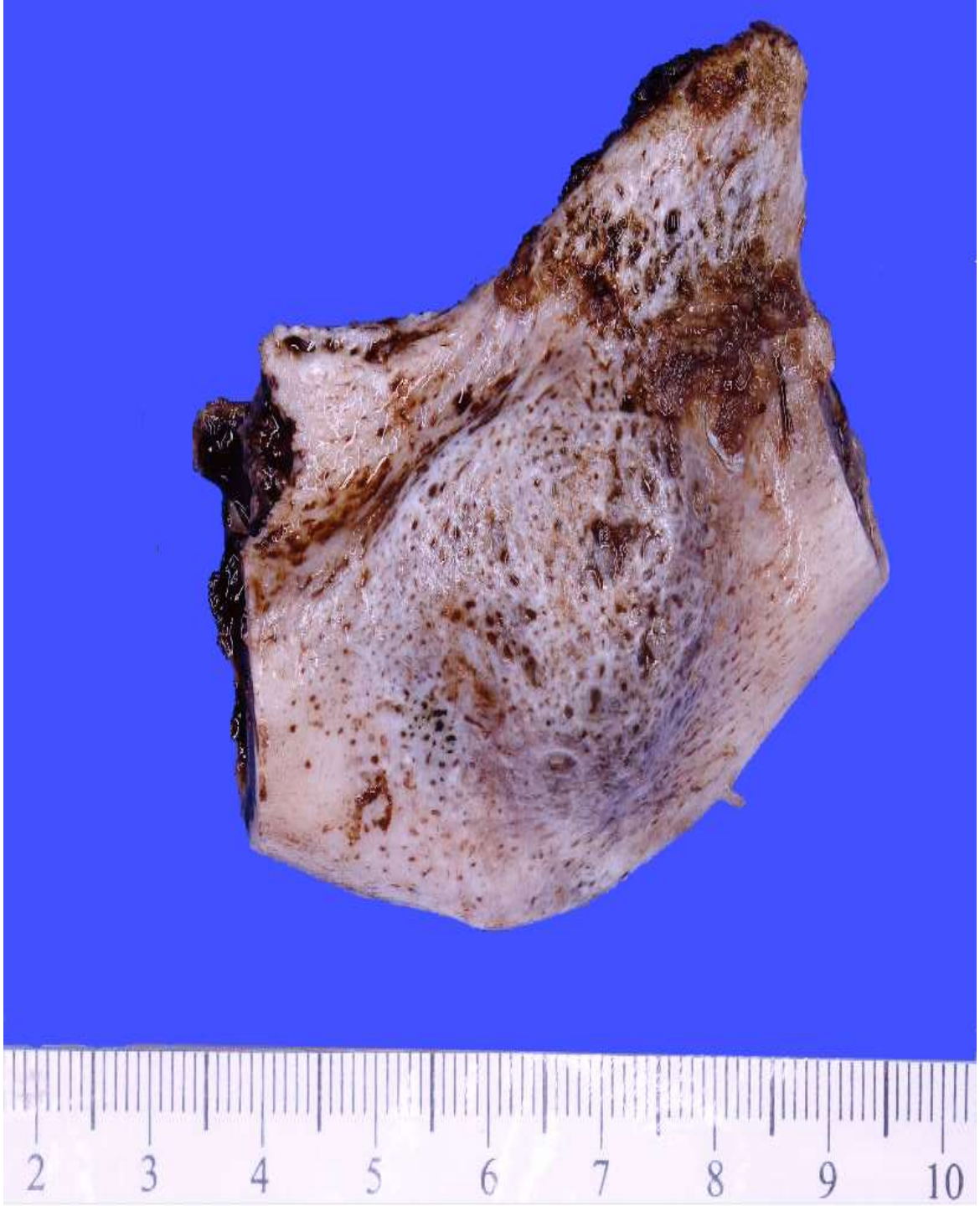
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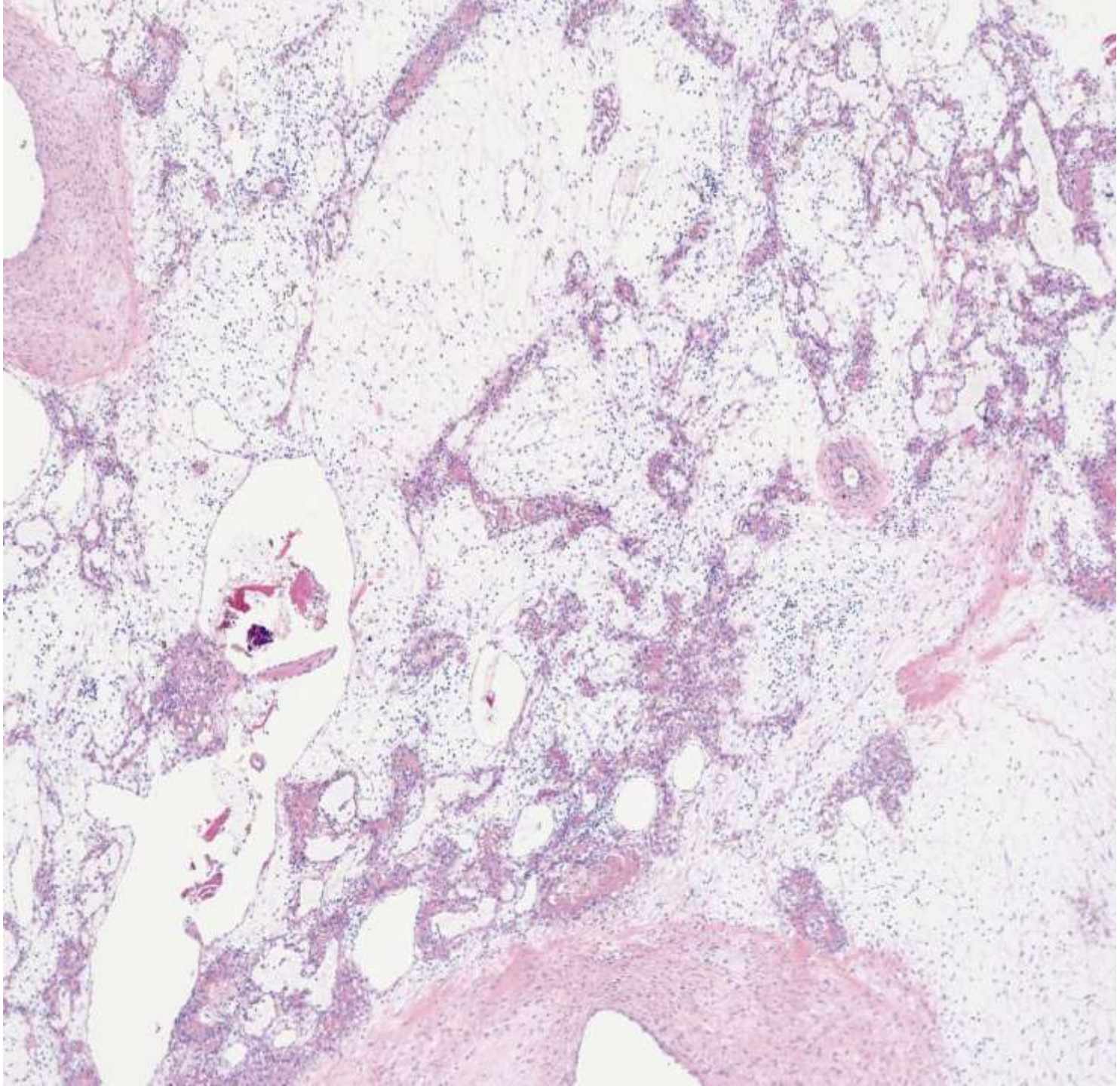
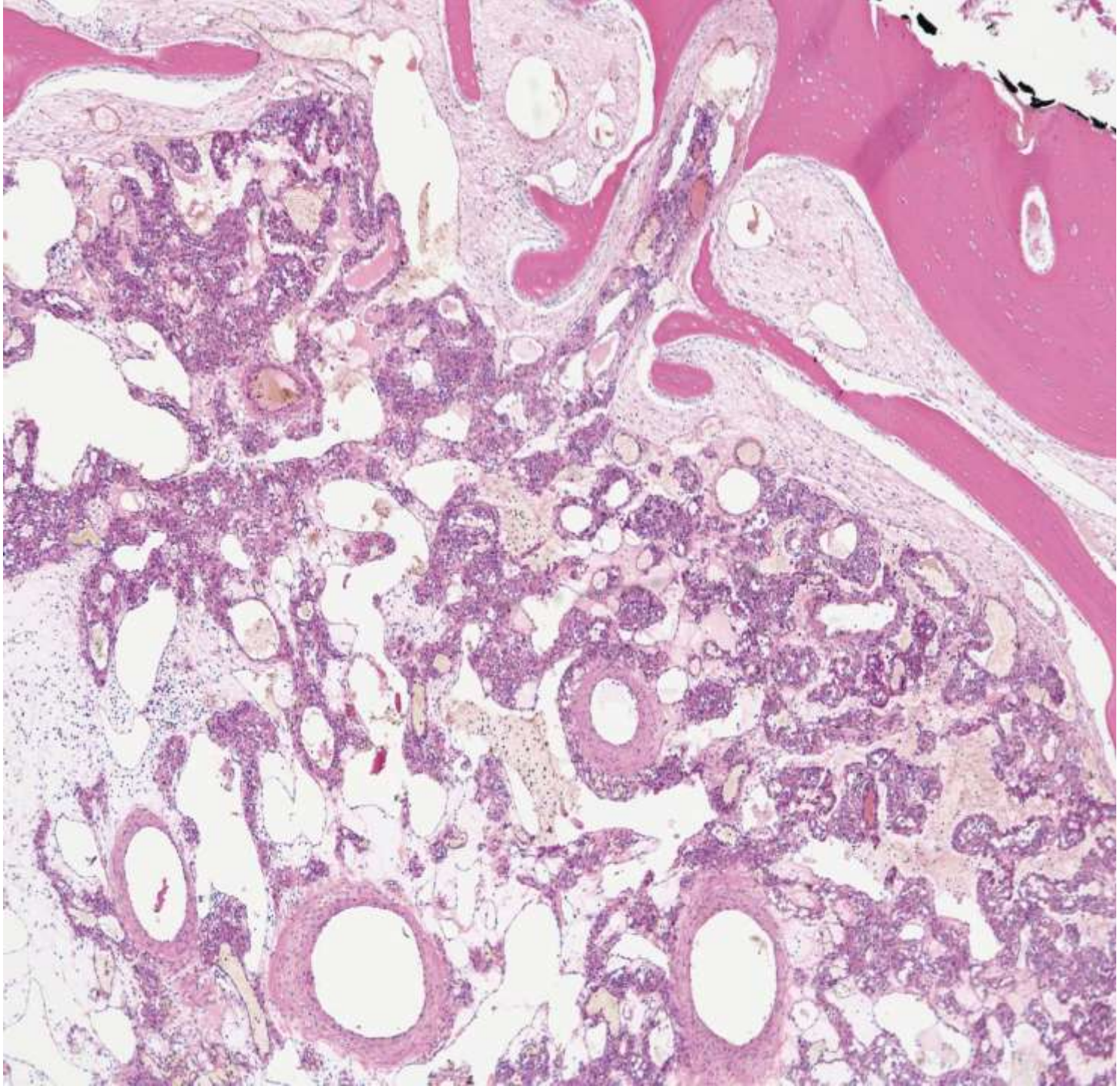
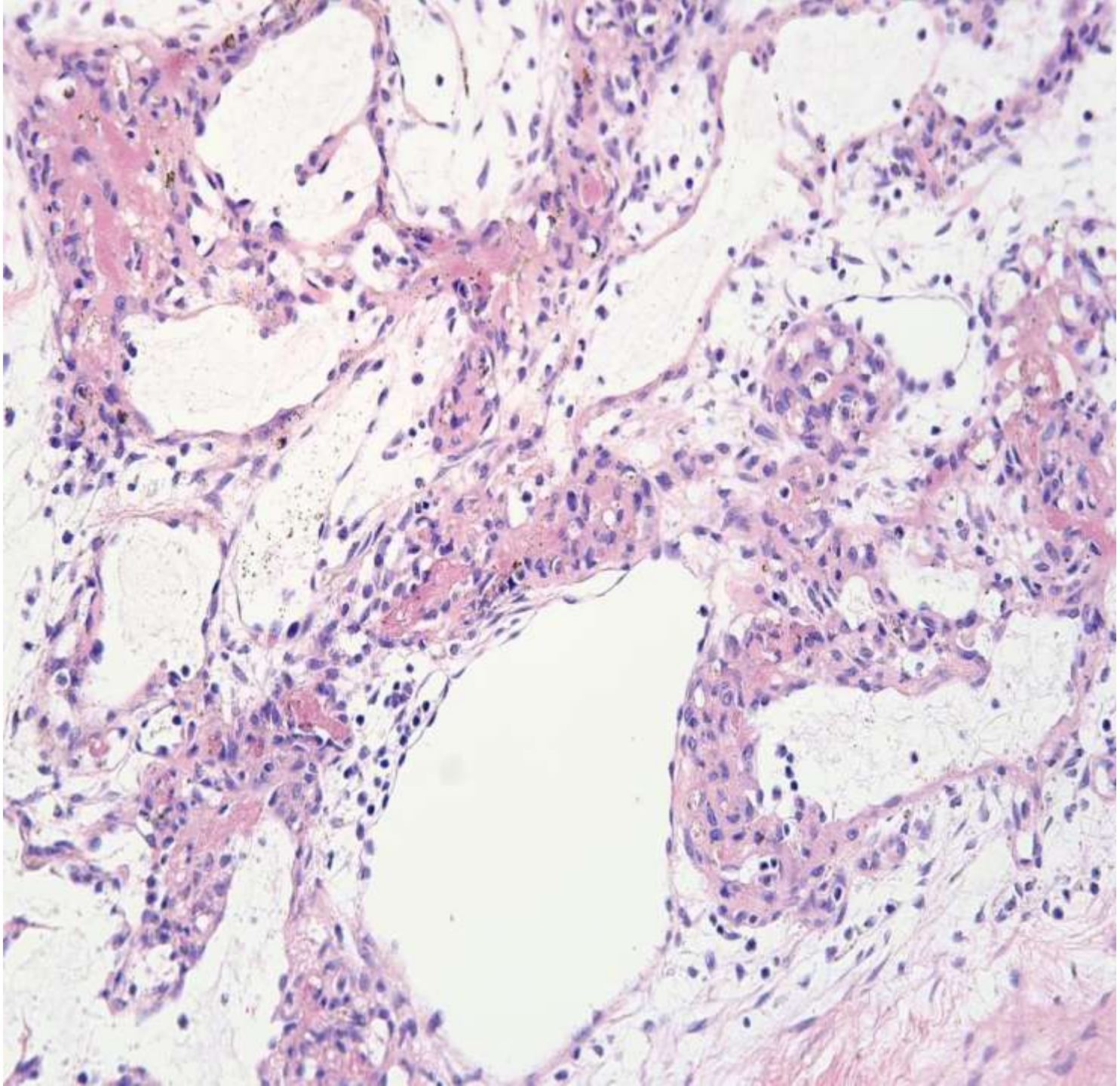
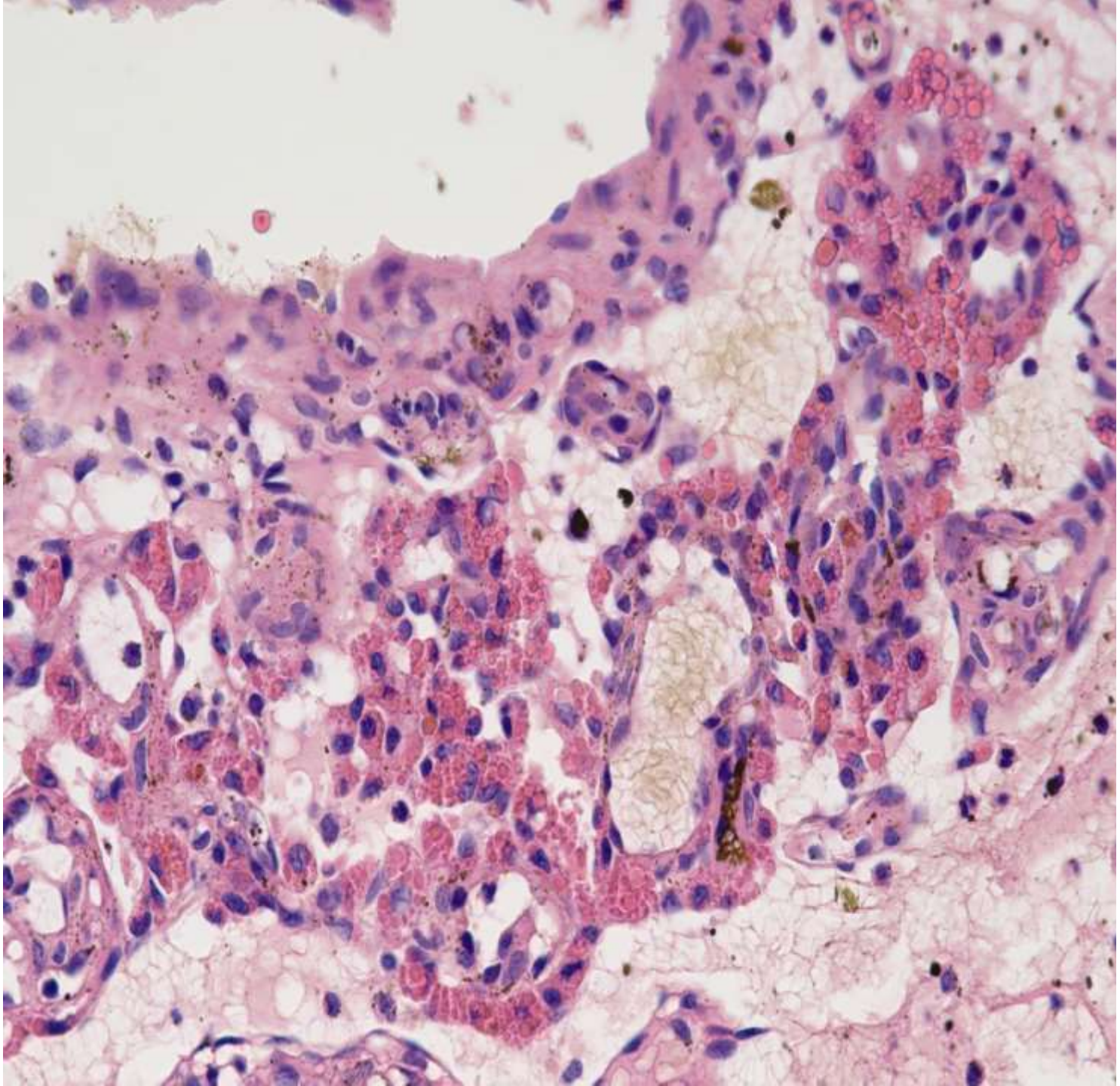
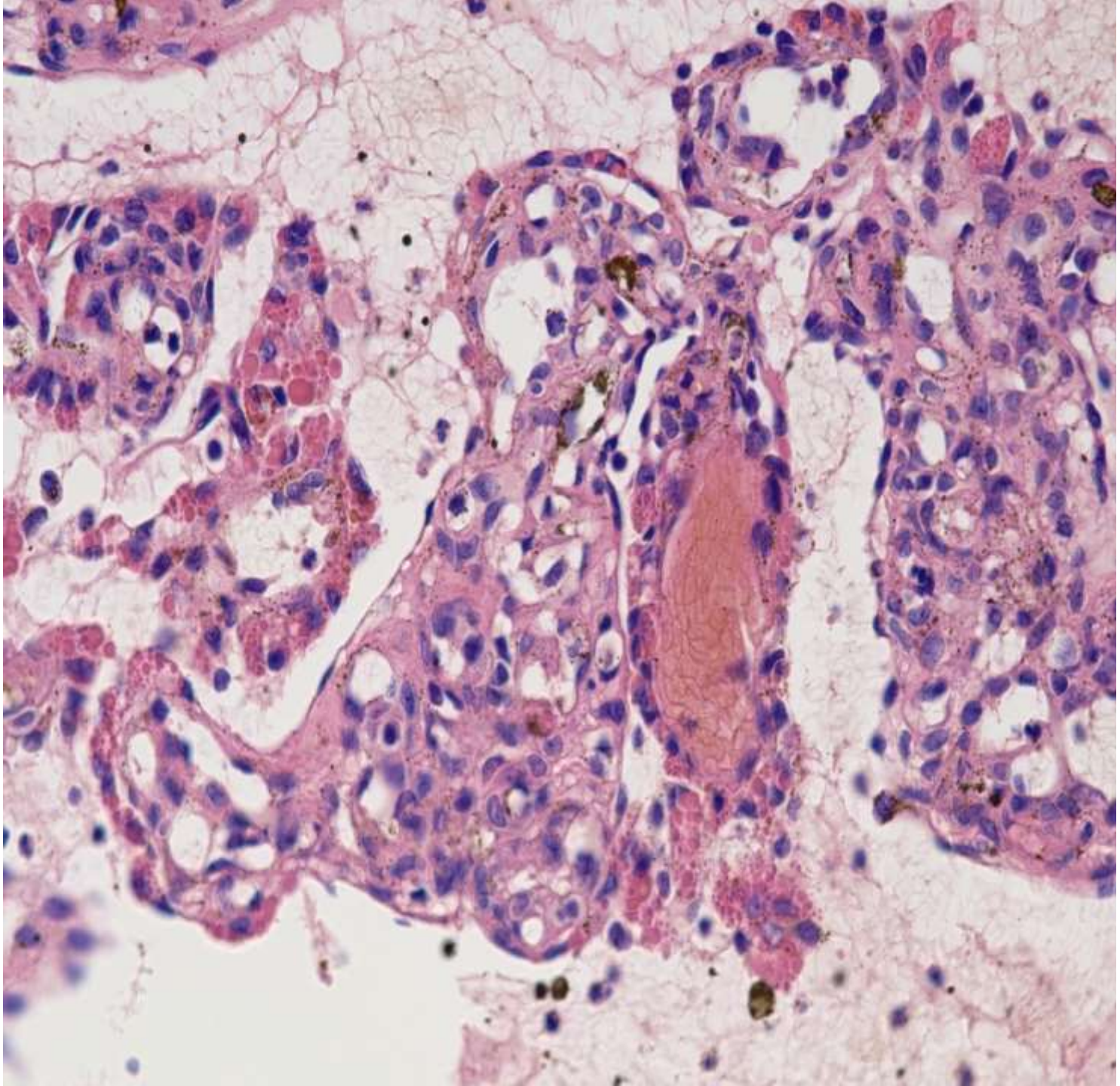
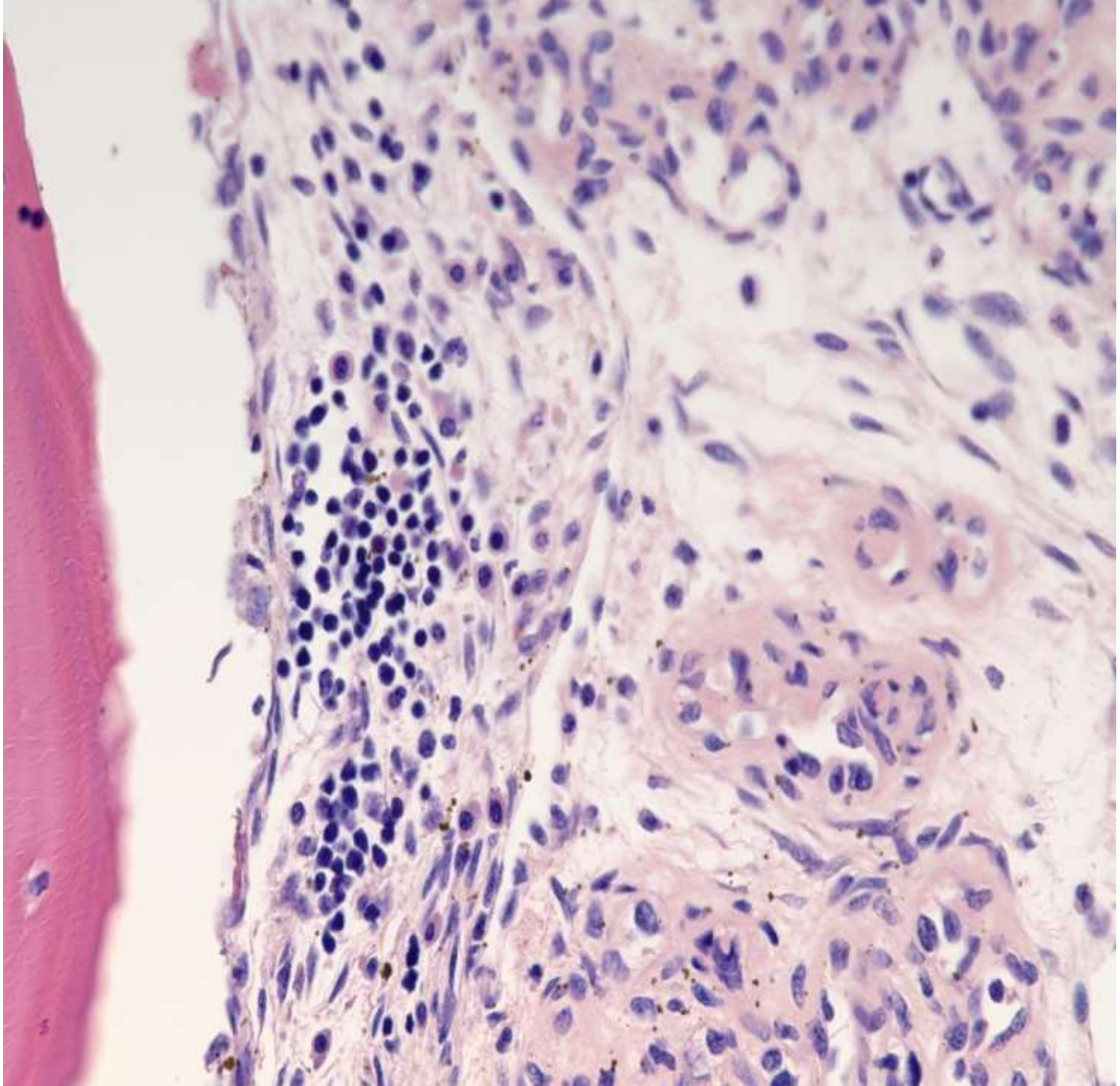












DIAGNOSIS?

Differential Diagnosis

- Well-Differentiated Angiosarcoma
- Hemangioma (e.g. intraosseous variant)

DIAGNOSIS:
A. MUCOSA, LEFT BUCCAL, EXCISION
-- **CYTOLOGICALLY-BLAND VASCULAR LESION (SEE COMMENT)**

B. BONE, LEFT MANDIBLE, EXCISION
-- **CYTOLOGICALLY-BLAND VASCULAR LESION (SEE COMMENT)**

DNA Sequencing:
GNA11 Q209L mutation identified

Diagnosis: **Anastomosing Hemangioma**

- *GNA11,GNAQ* Q209L GTPase mutations are common to Anastomosing Hemangiomas [1,2]
- Anastomosing Hemangiomas were originally described in the kidney[3]
- Morphologically characterized by:
  - Diffuse anastomosing sinusoidal-like vascular spaces (absent/minimal atypia; *'hobnail' cells may be present*)
  - Eosinophilic globules within endothelium (~50%)
  - Extramedullary hematopoiesis

1. Bean GR, Joseph NM, Gill RM, Folpe AL, Horvai AE, Jungbluth AA, Wu Patrick. Recurrent GNAQ mutations in anastomosing hemangiomas. 2017 May;30(5):722-727.
2. Liau JY, Tsai JH, Lan J, Chen CC, Wang YH, Lee JC, Huang HY. Virchows Arch. GNA11 joins GNAQ and GNA14 as a recurrently mutated

Degree of GTPase Activity Loss Relates to Pathology

R183 mutation (GNA11, GNAQ)	Q209 mutation (GNA11, GNAQ)
Partial loss of GTPase function	*Complete* loss of GTPase function
Capillary Malformations (90% of Sturge-Weber, Port-wine stains)	Vascular tumors (Hemangiomas e.g. Anastomosing hemangioma, hepatic small vessel hemangioma, cherry hemangioma)

References:

1. Bean GR, Joseph NM, Gill RM, Folpe AL, Horvai AE, Umetsu SE. Mod
   Pathol. Recurrent GNAQ mutations in anastomosing hemangioma s. 2017 May;30(5):722-727.

2. Liau JY, Tsai JH, Lan J, Chen CC, Wang YH, Lee JC, Huang HY. Virchows Arch. GNA11 joins GNAQ and GNA14 as a recurrently mutated gene in anastomosing hemangioma. 2019 Nov 9.

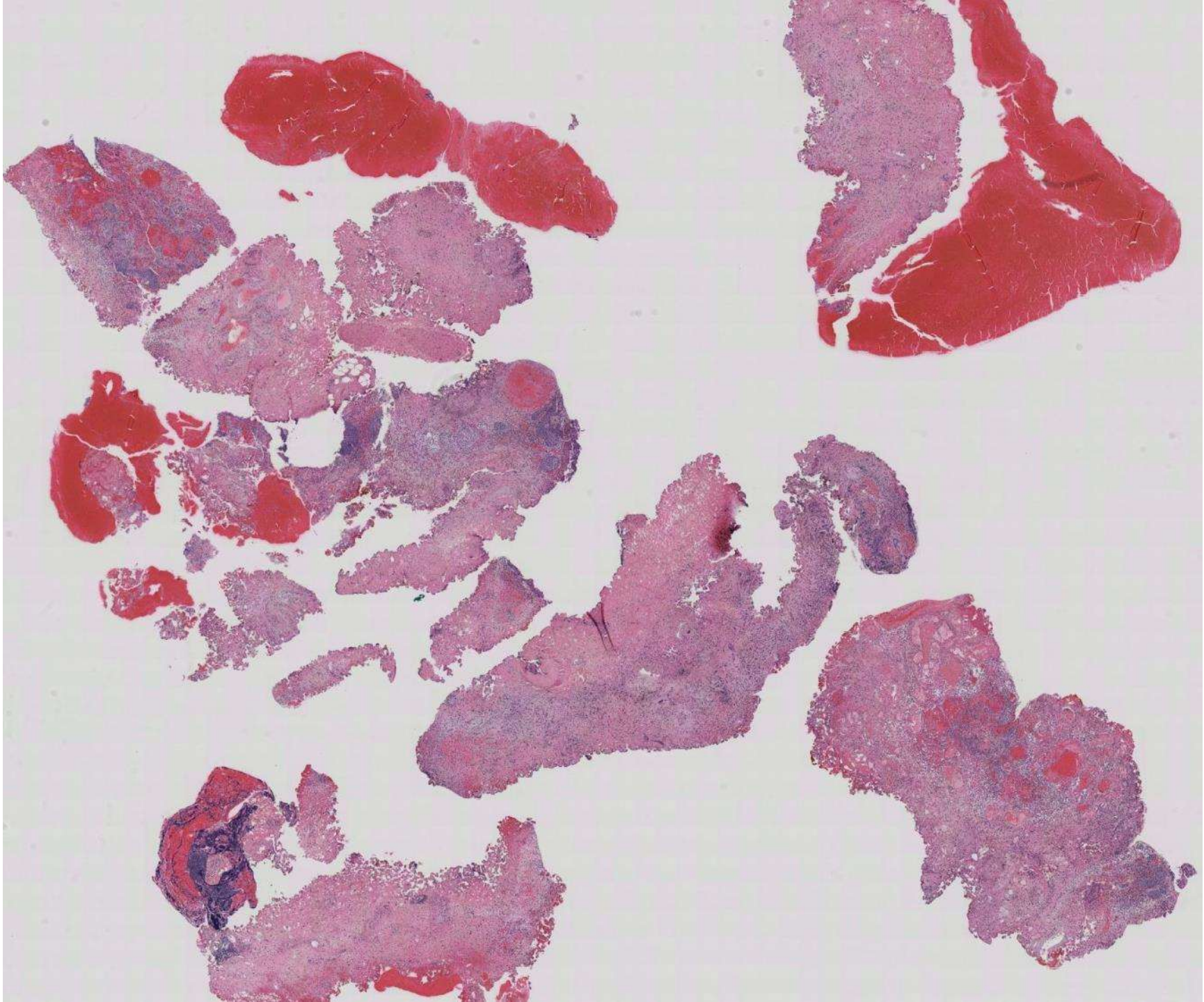
3. John I, Folpe AL.
   Anastomosing Hemangiomas Arising in Unusual Locations: A Clinicopathologic Study of 17 Soft Tissue Cases Showing a Predilection for the Paraspinal Region. Am J Surg Pathol. 2016 Aug;40(8):1084-9.

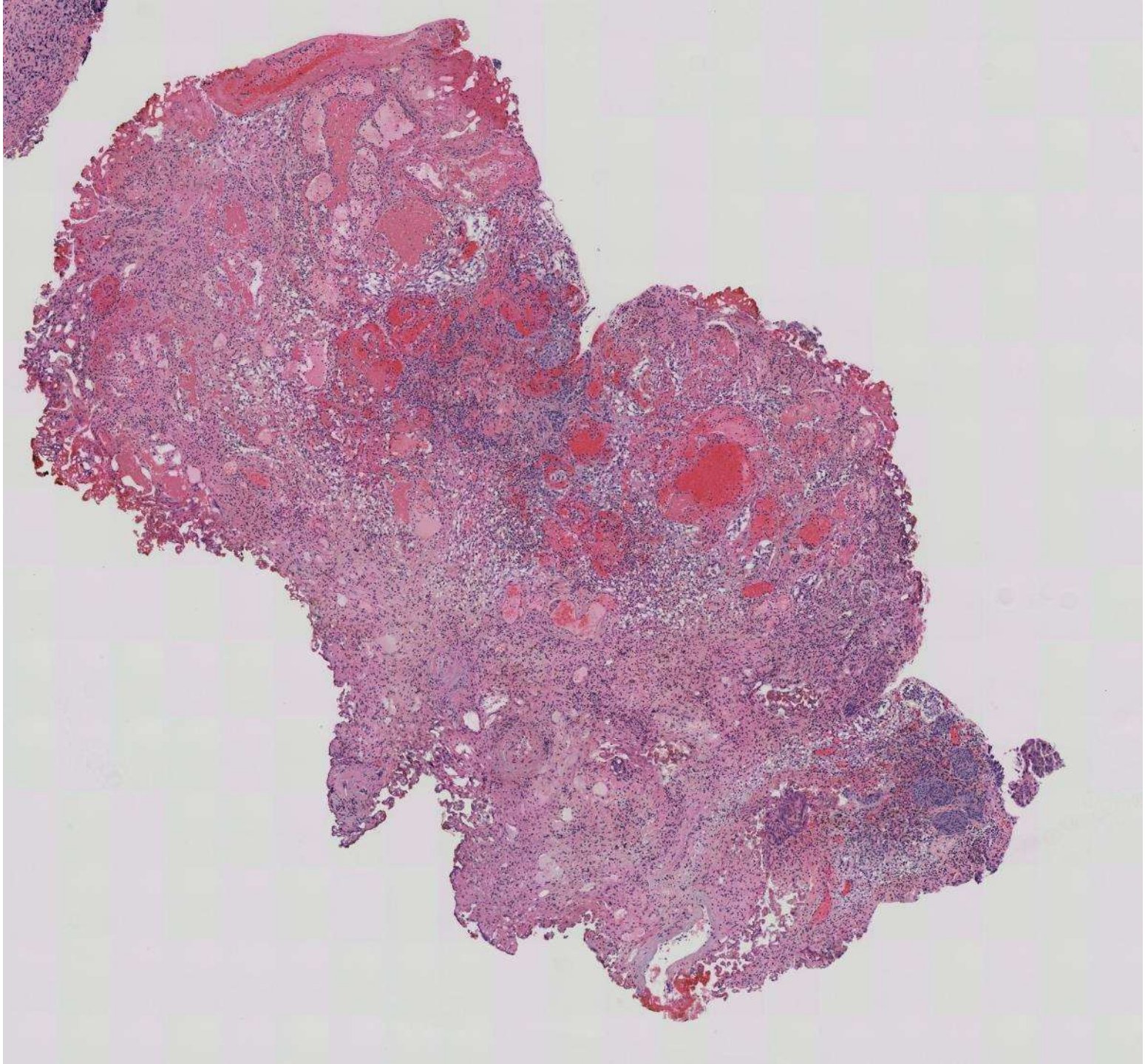
4. Caballes AB, Abelardo AD, Farolan MJ, Veloso JAD. Pediatr Dev Pathol. Pediatric Anastomosing Hemangioma: Case Report and Review of Renal Vascular Tumors in Children. 2019 May-Jun;22(3):269-275..

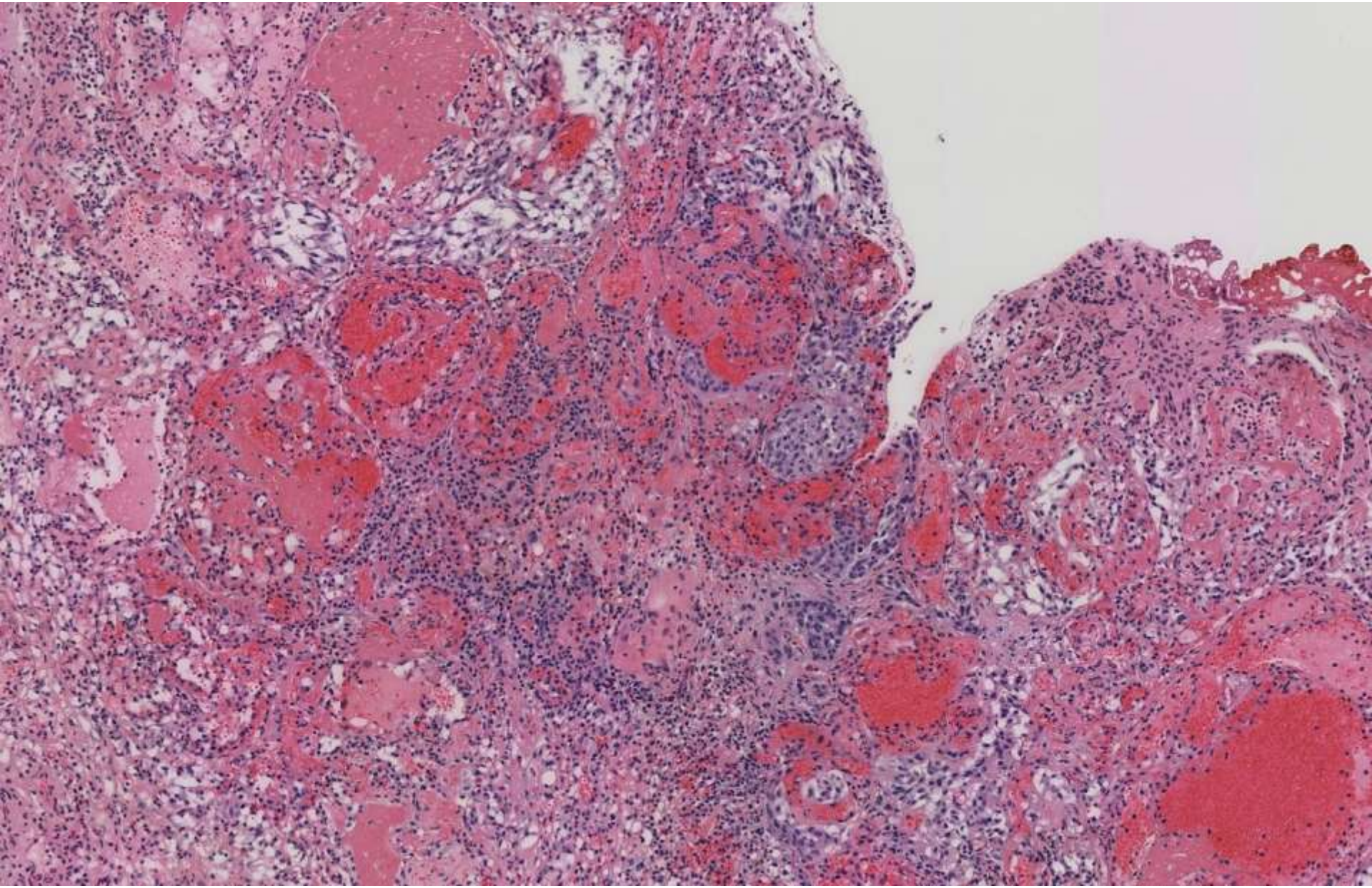
20-0304
scanned slide available!

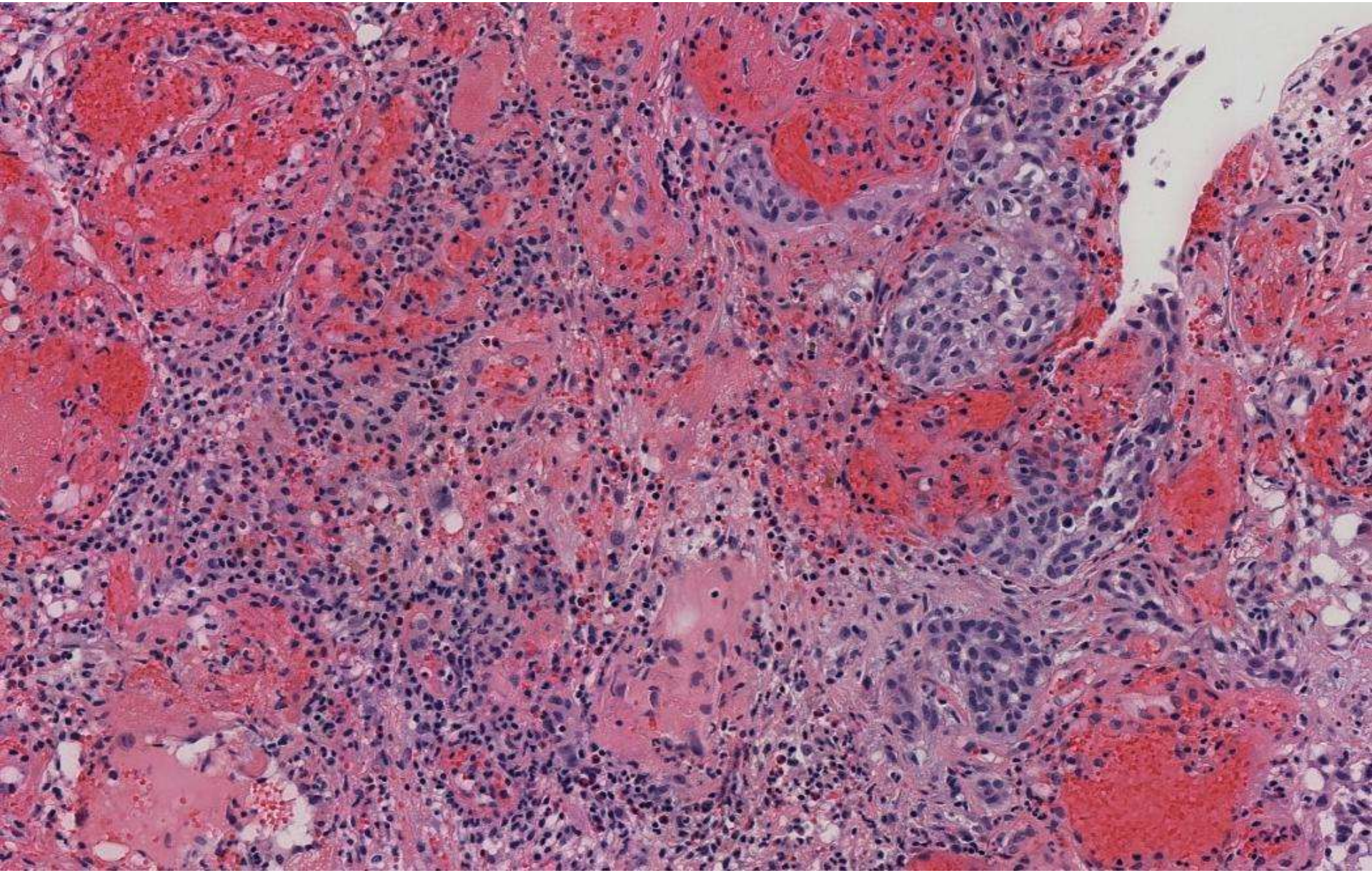
Emily Chan/Marietya Lauw; UCSF

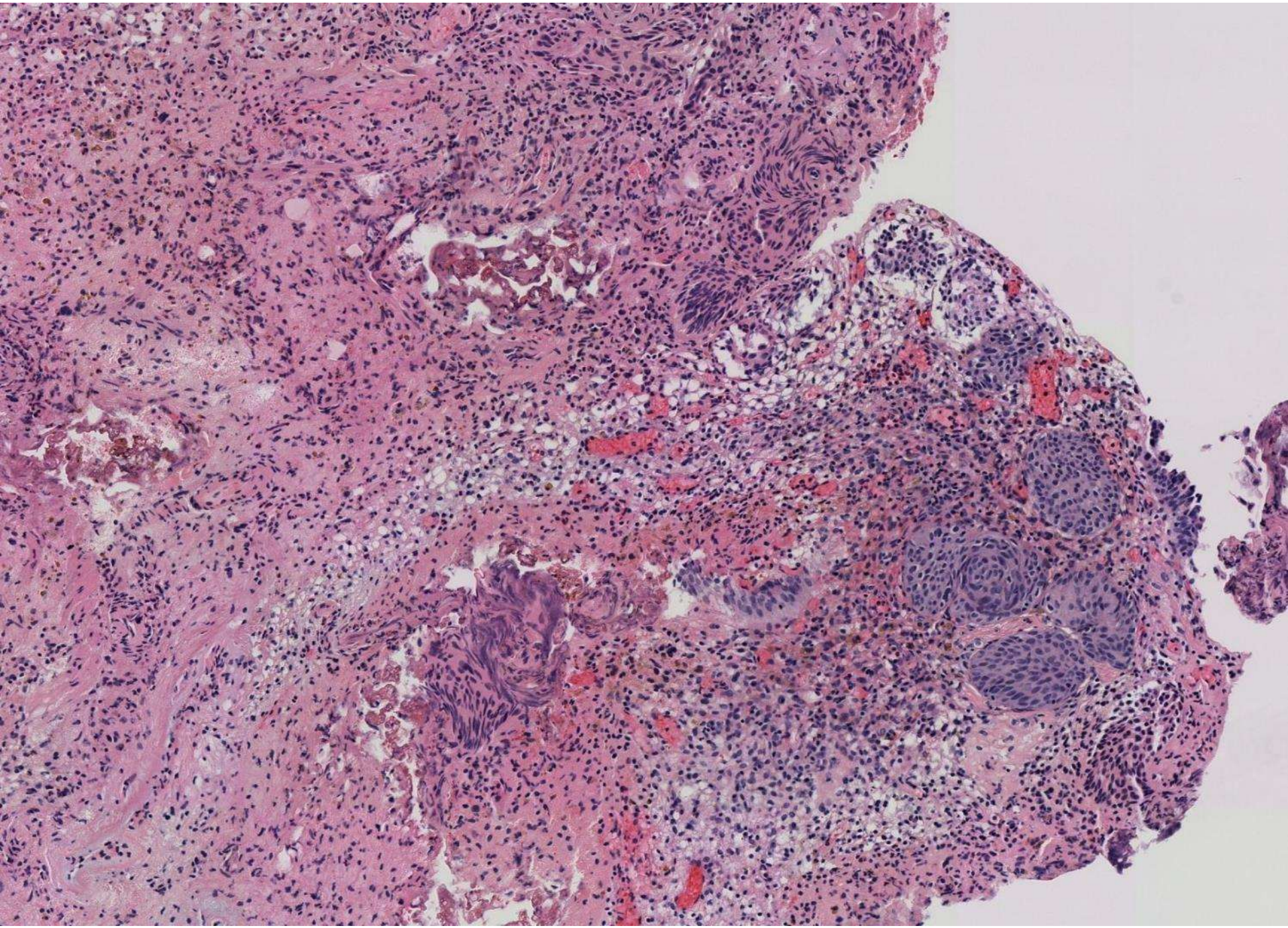
68-year-old M with 3cm urinary bladder tumor on right lateral wall.

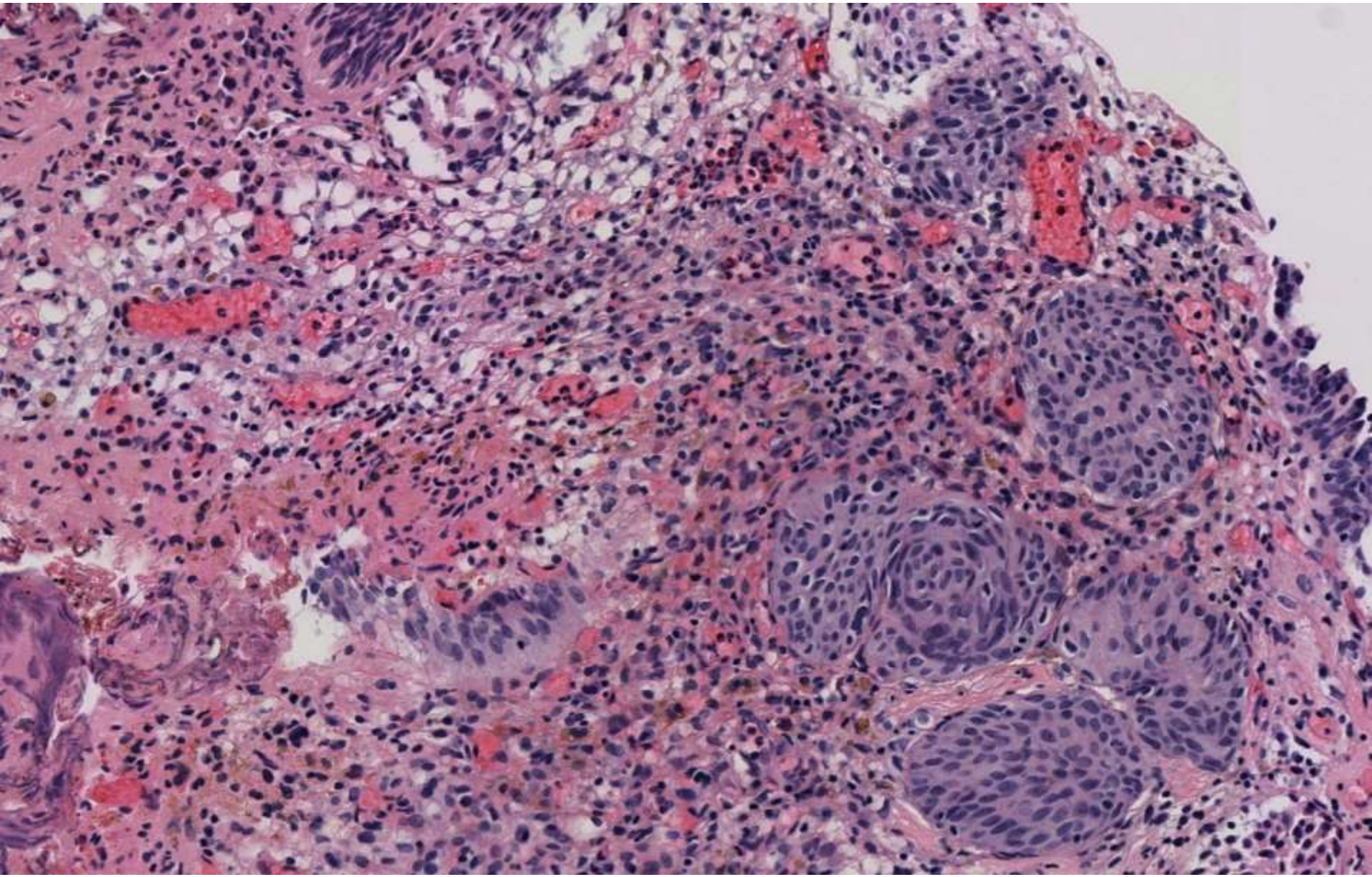


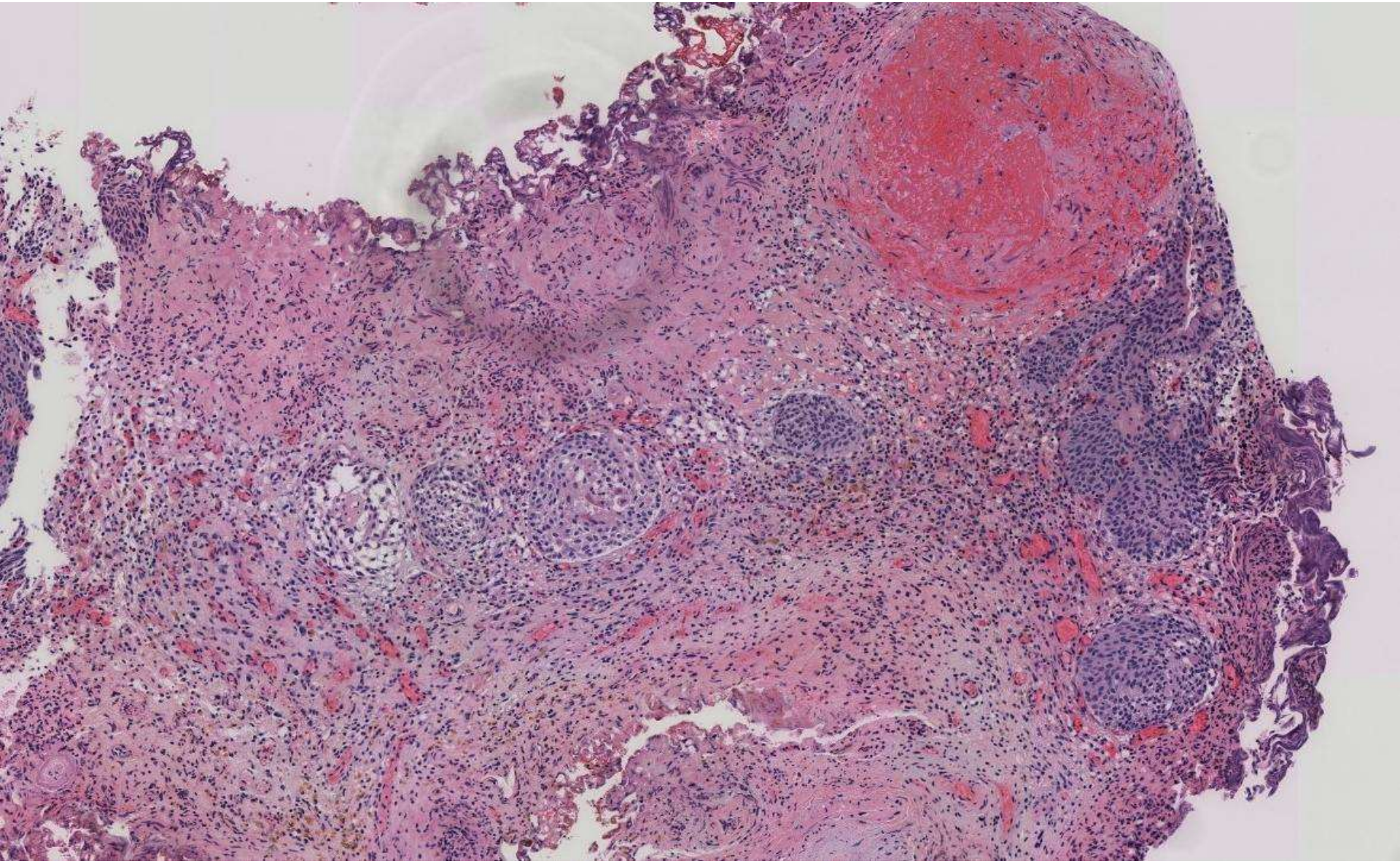


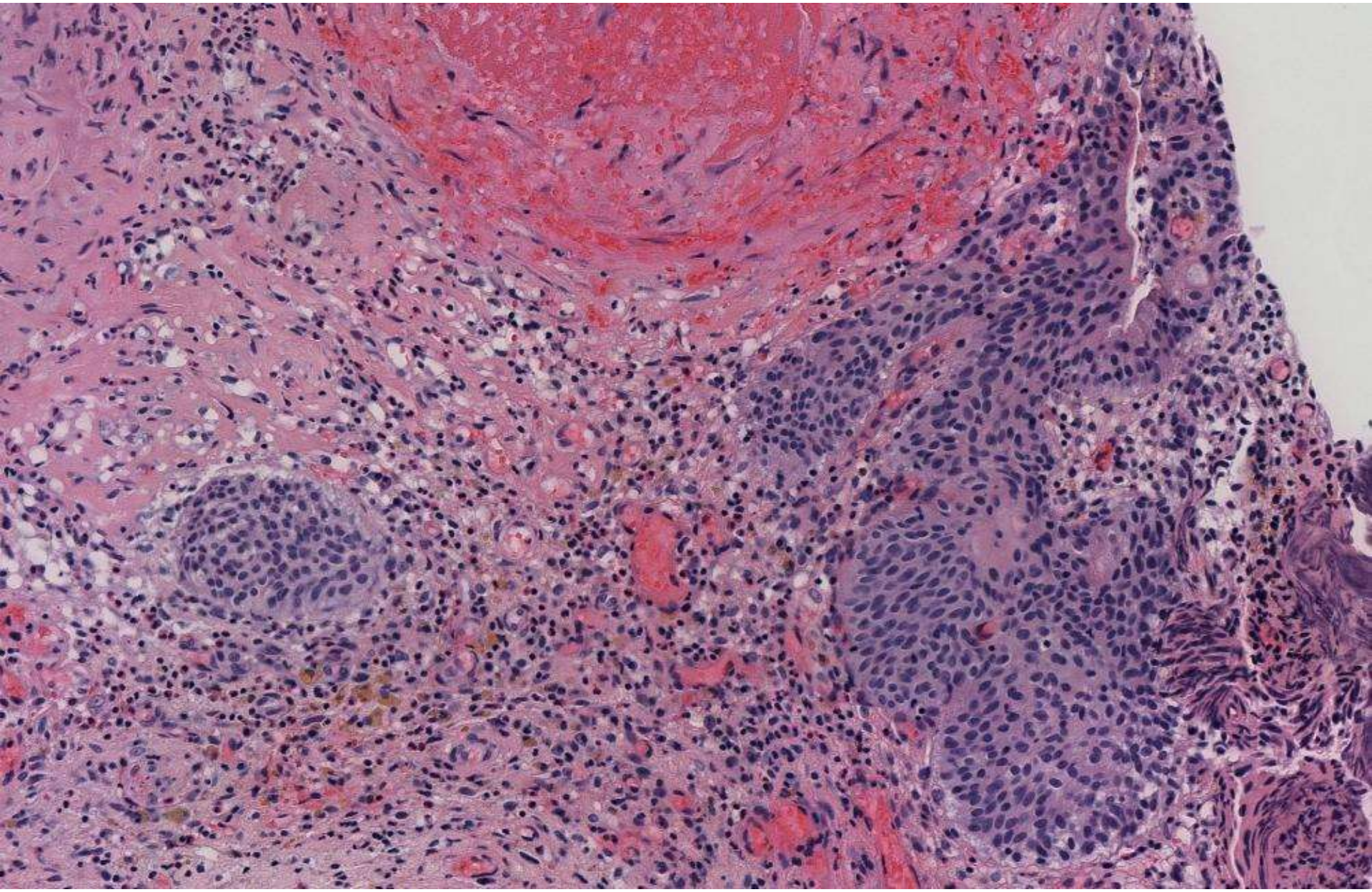


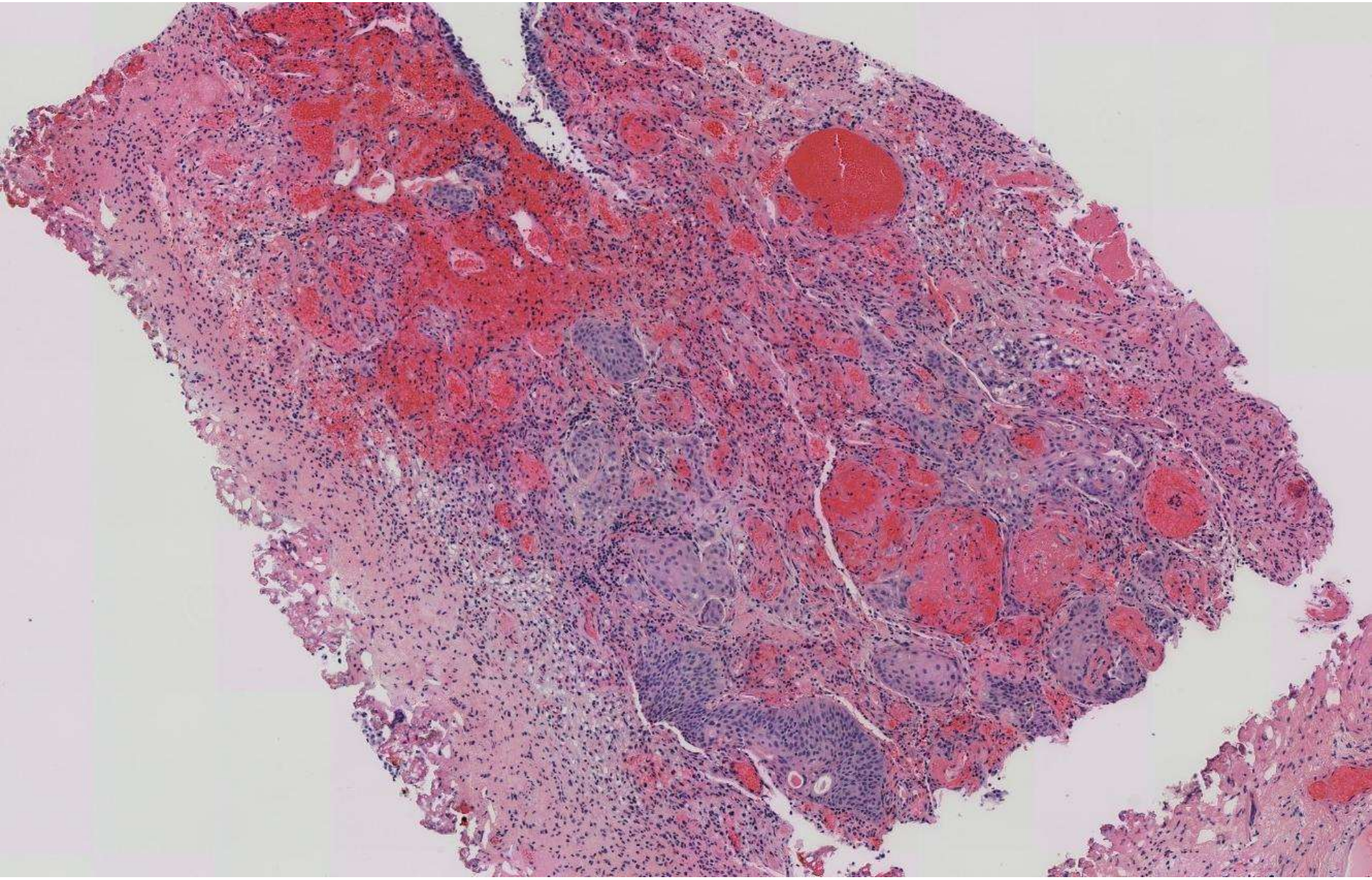


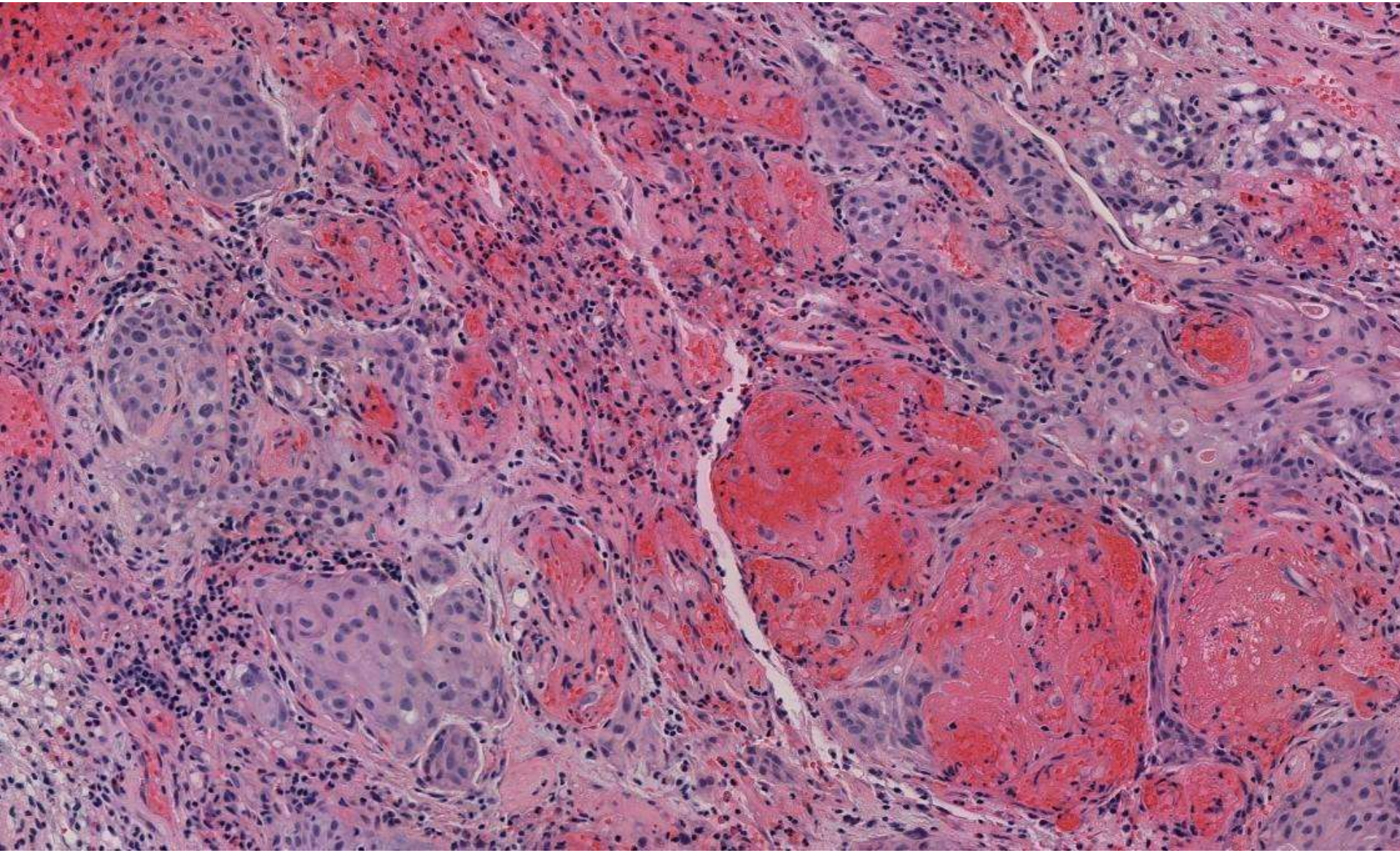


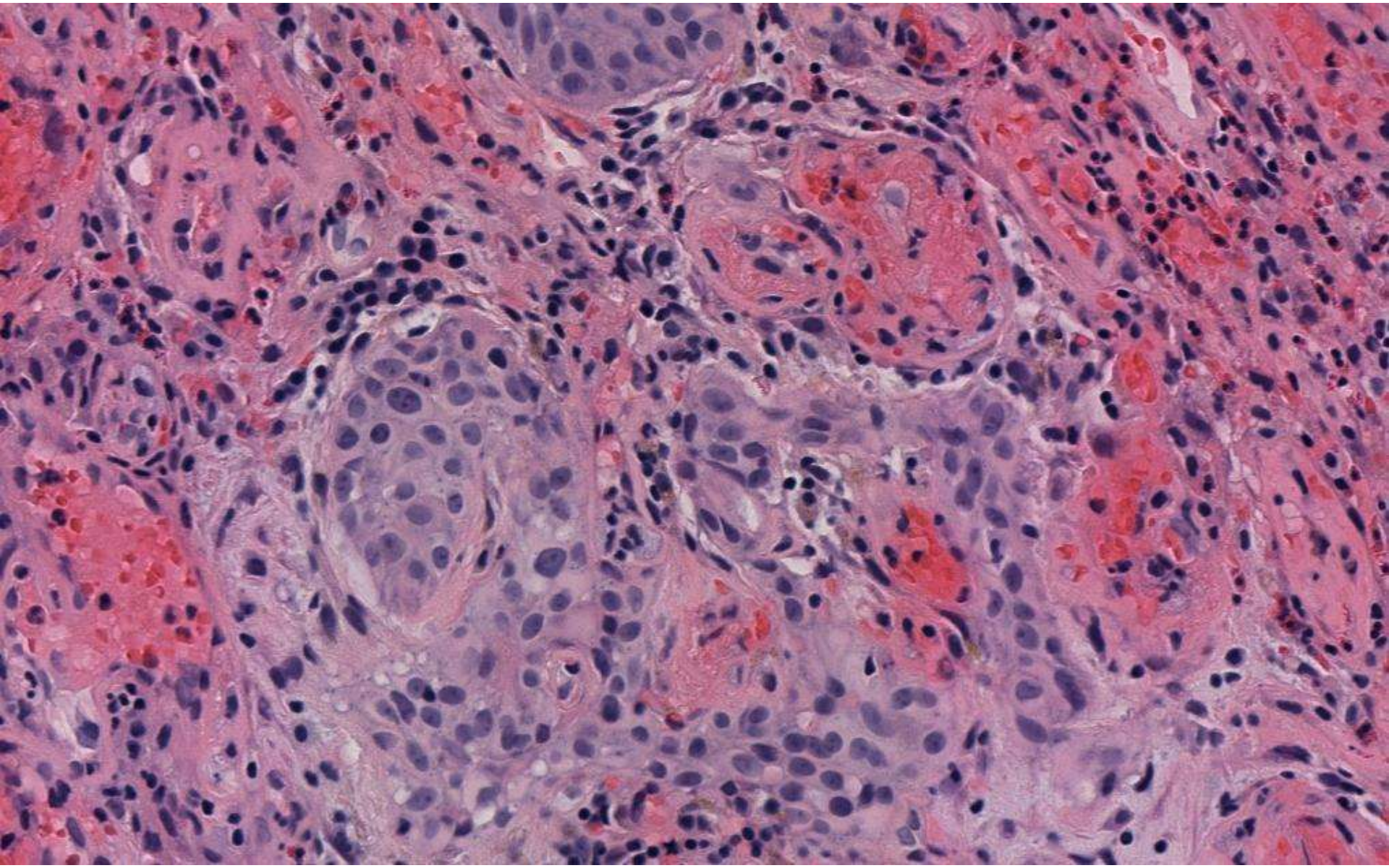












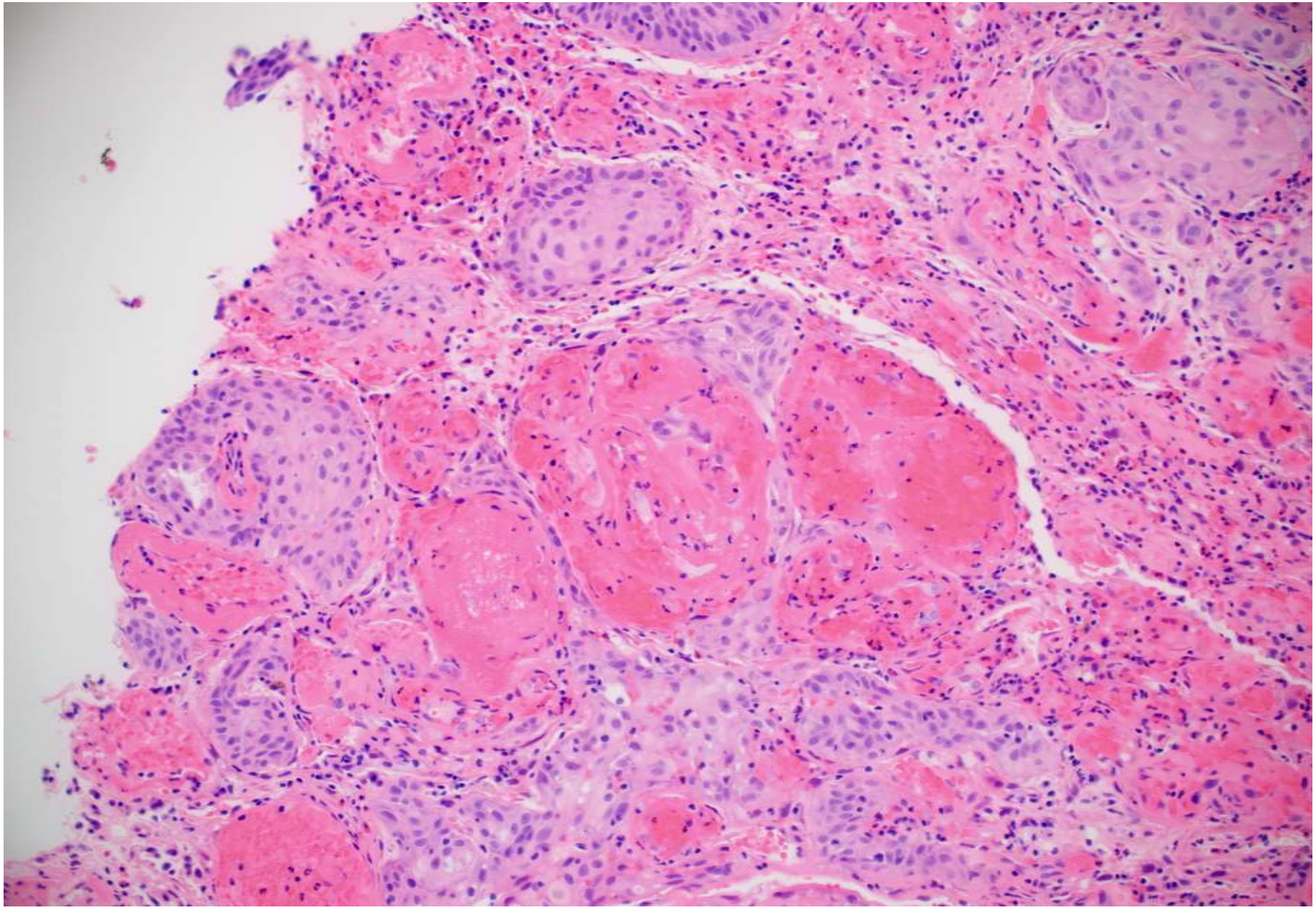
DIAGNOSIS?

68-year-old man with gross hematuria and a 3 cm urinary bladder mass on right lateral wall

Emily Chan/Marietya Lauw

UCSF

Southbay March 2020



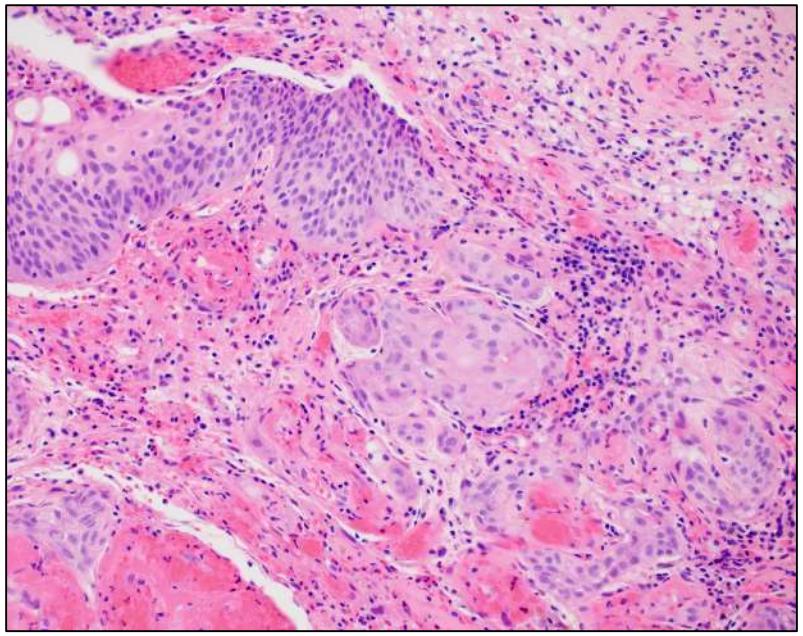
Differential diagnosis

- Pseudocarcinomatous hyperplasia
- Florid von Brunn nests
- Invasive urothelial carcinoma
  - (especially nested variant)
- Invasive squamous cell carcinoma

Pseudocarcinomatous Hyperplasia

VS

Nested Variant of Urothelial Carcinoma



- Bland appearance
- Epithelium encircles vessels in the lamina propria
- Associated with fibrin deposition
- No muscle invasion

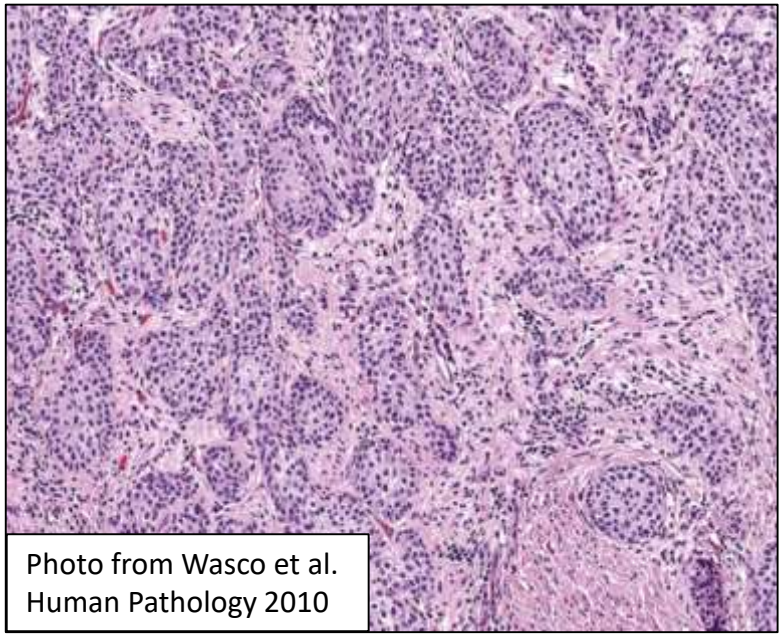


Photo from Wasco et al. Human Pathology 2010

- Bland appearance
- No association with vessels/fibrin
- Muscularis propria invasion if muscle is present
- Associated with conventional urothelial carcinoma

Pseudocarcinomatous hyperplasia…

- A better diagnosis: Benign with marked radiation changes
- Engorged vessels with hemorrhage and fibrin
- Squamoid epithelium wraps around the fibrin
- Reactive urothelial atypia

Radiation or Chemotherapy Cystitis With "Pseudocarcinomatous" Features

Theresa Y. Chan, MD, and Jonathan I. Epstein, MD AJSP 2004

- Cases associated with pelvic irradiation

Pseudocarcinomatous Epithelial Hyperplasia in the Bladder Unassociated With Prior Irradiation or Chemotherapy

Zhaoli Lane, MD and Jonathan I. Epstein, MD*†* AJSP 2008

- Cases associated with chronic bladder irritation (indwelling Foley catheters) or generalized ischemia (atrial fibrillation, coronary artery disease)

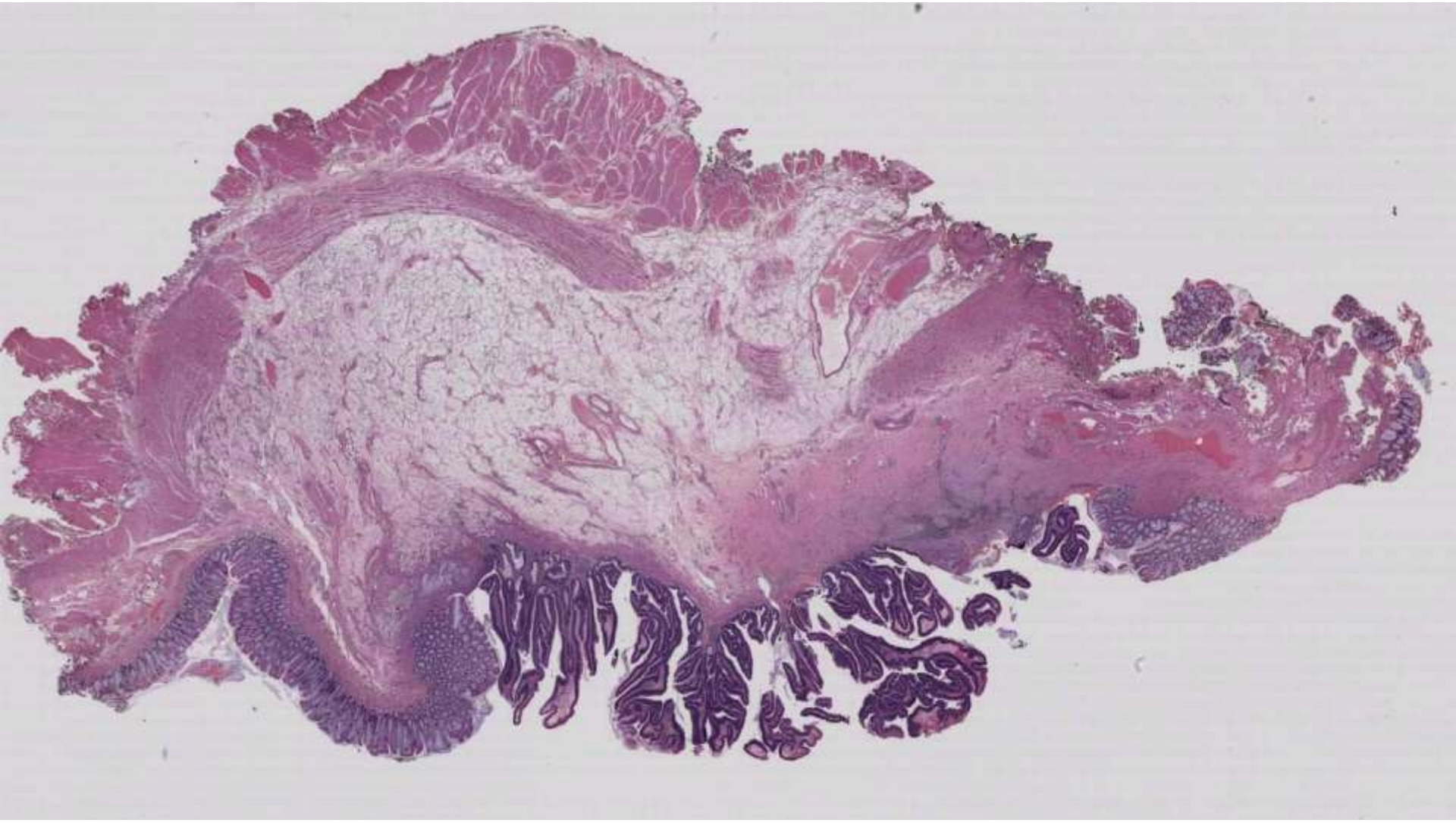
Our patient…

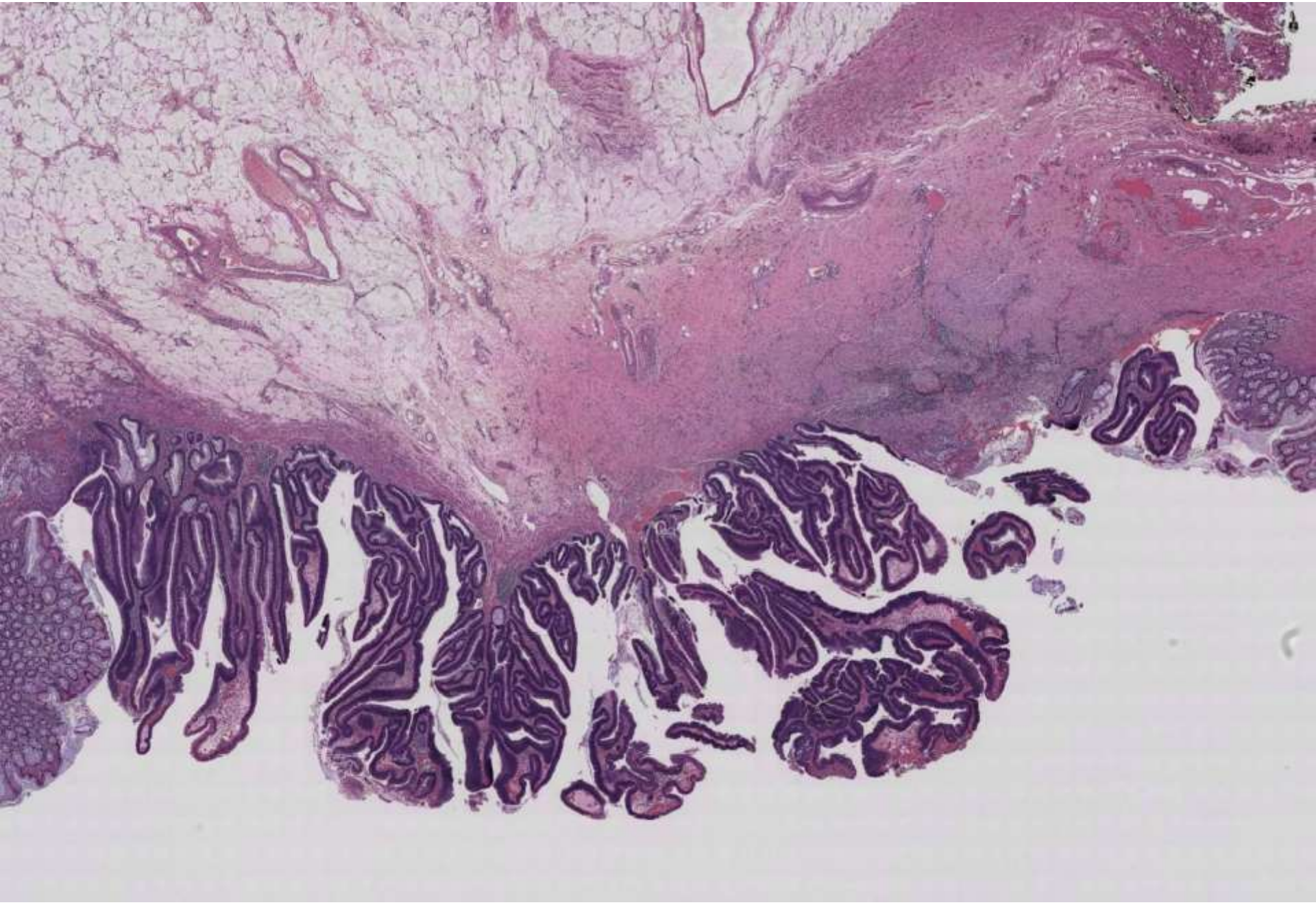
- History of radiation for prostate cancer two years prior

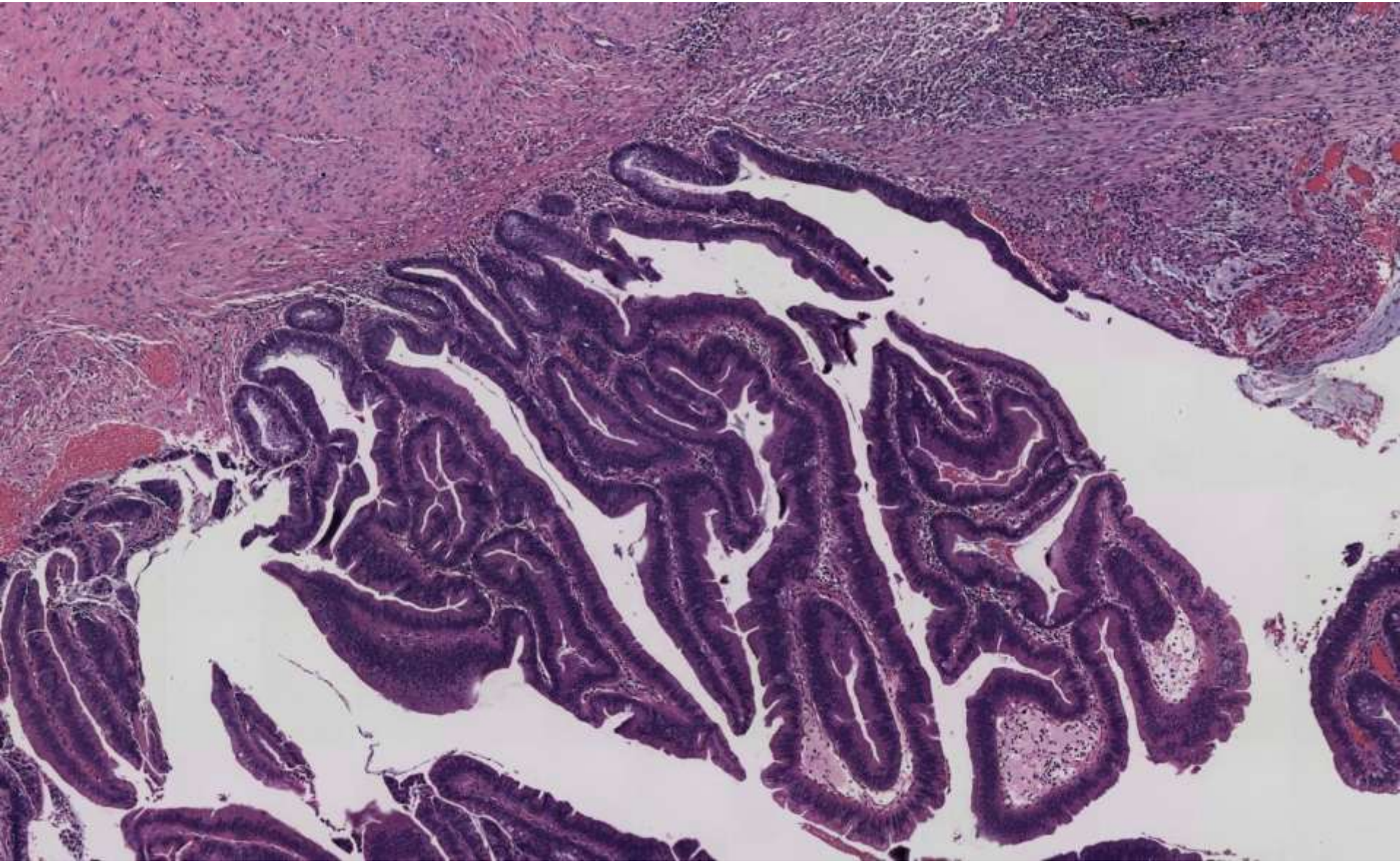
20-0305
scanned slide available!

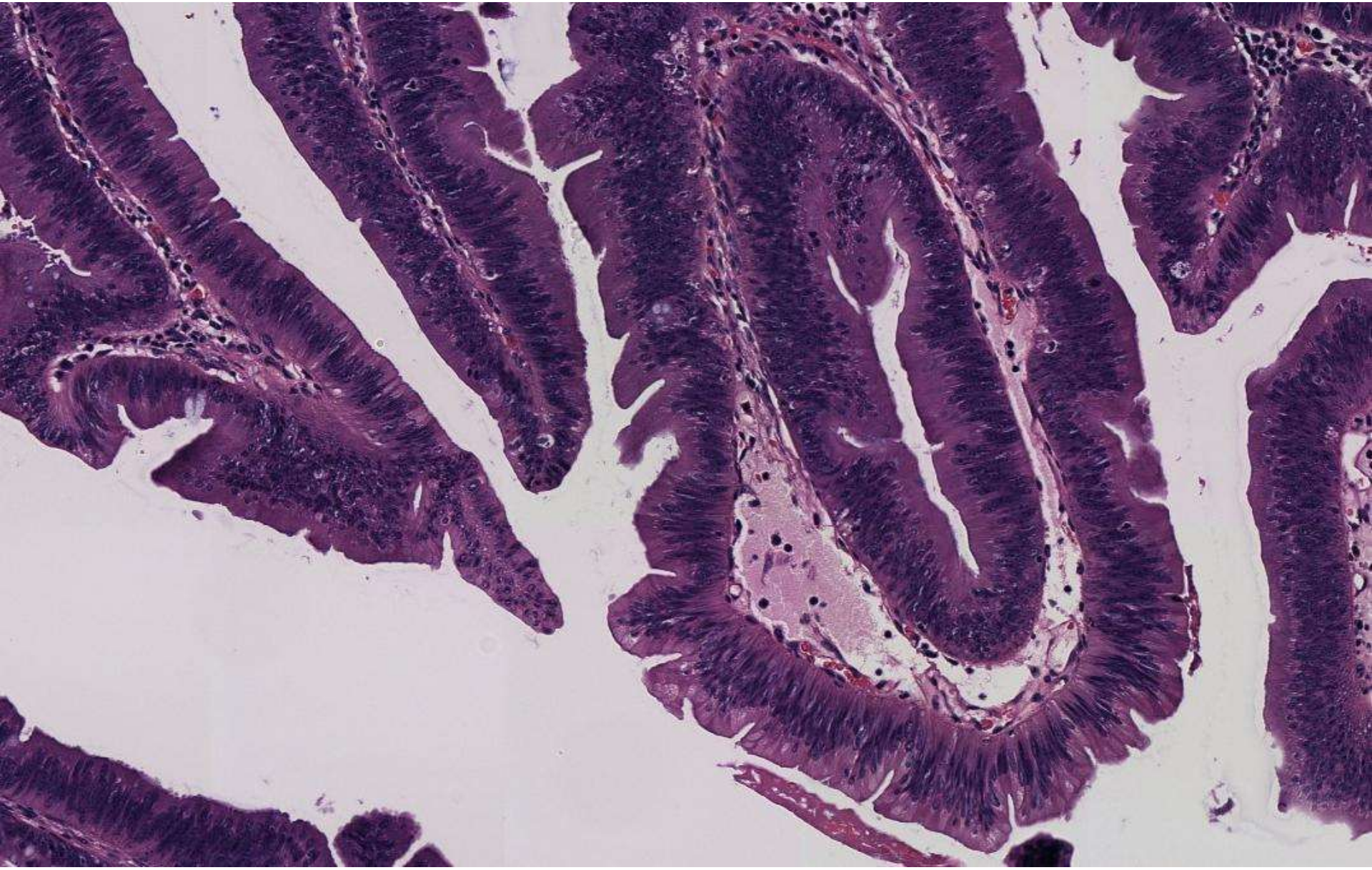
Natalie Patel; El Camino Hospital

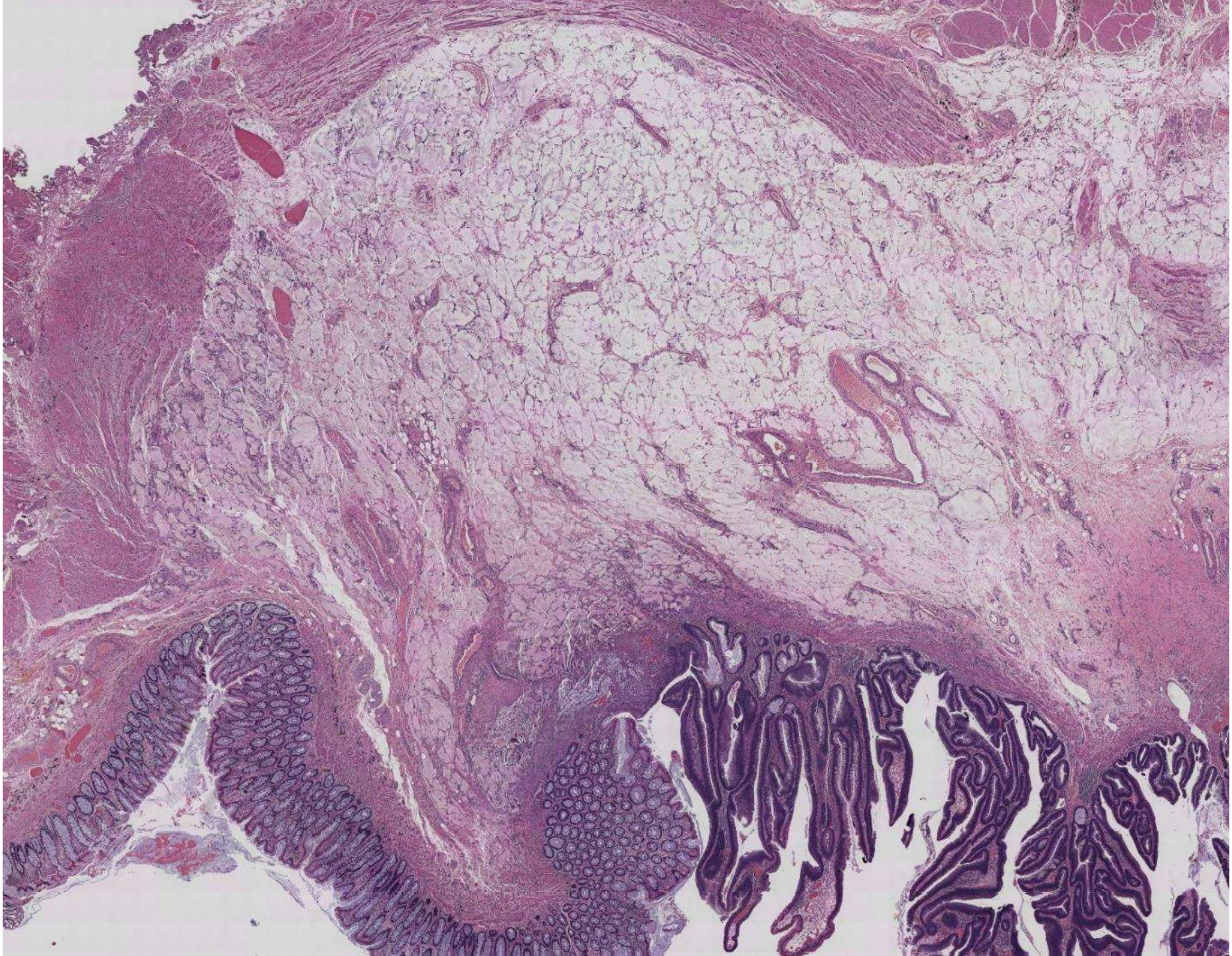
69-year-old M with rectal polyp. Transanal resection performed.

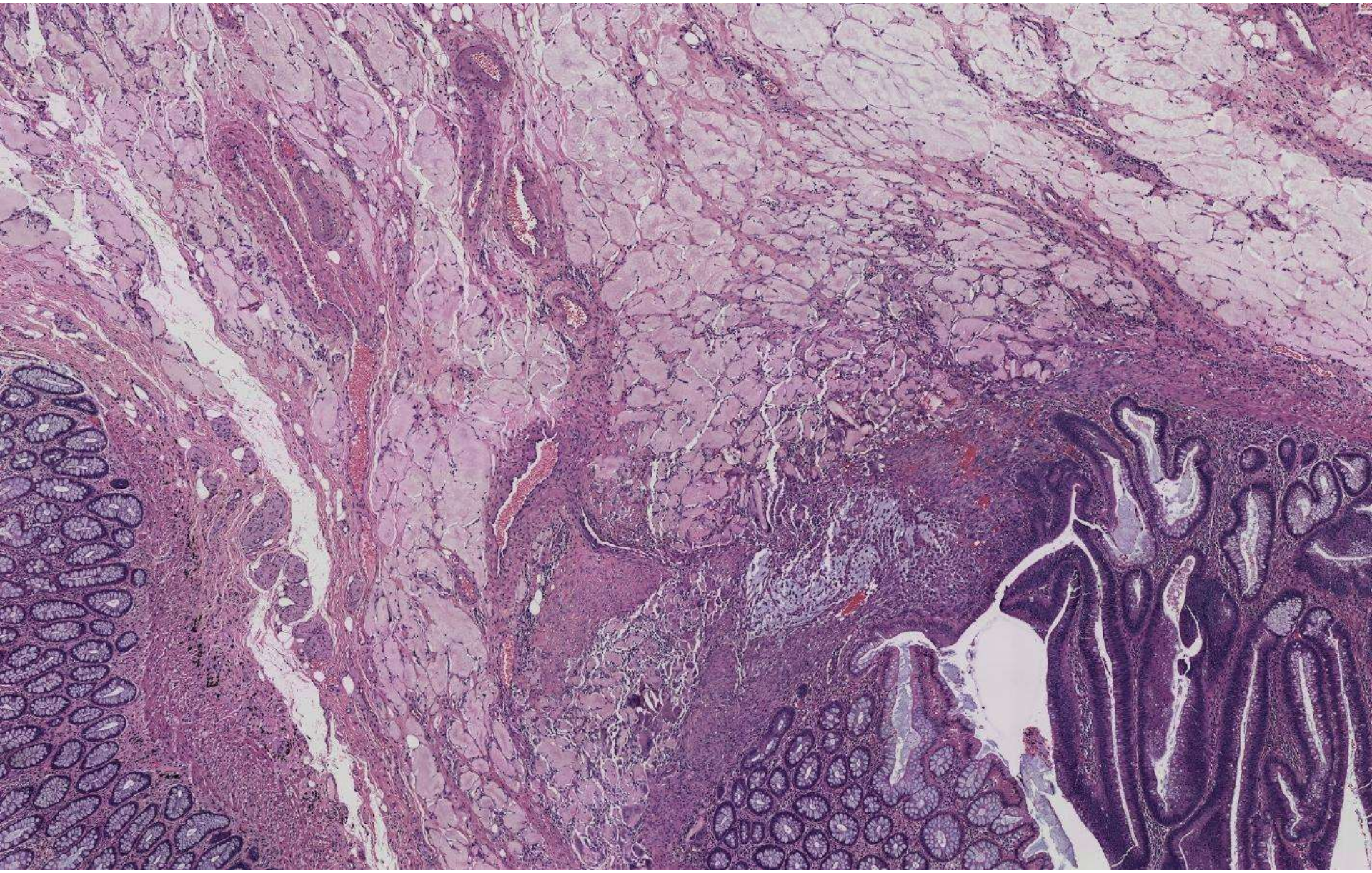


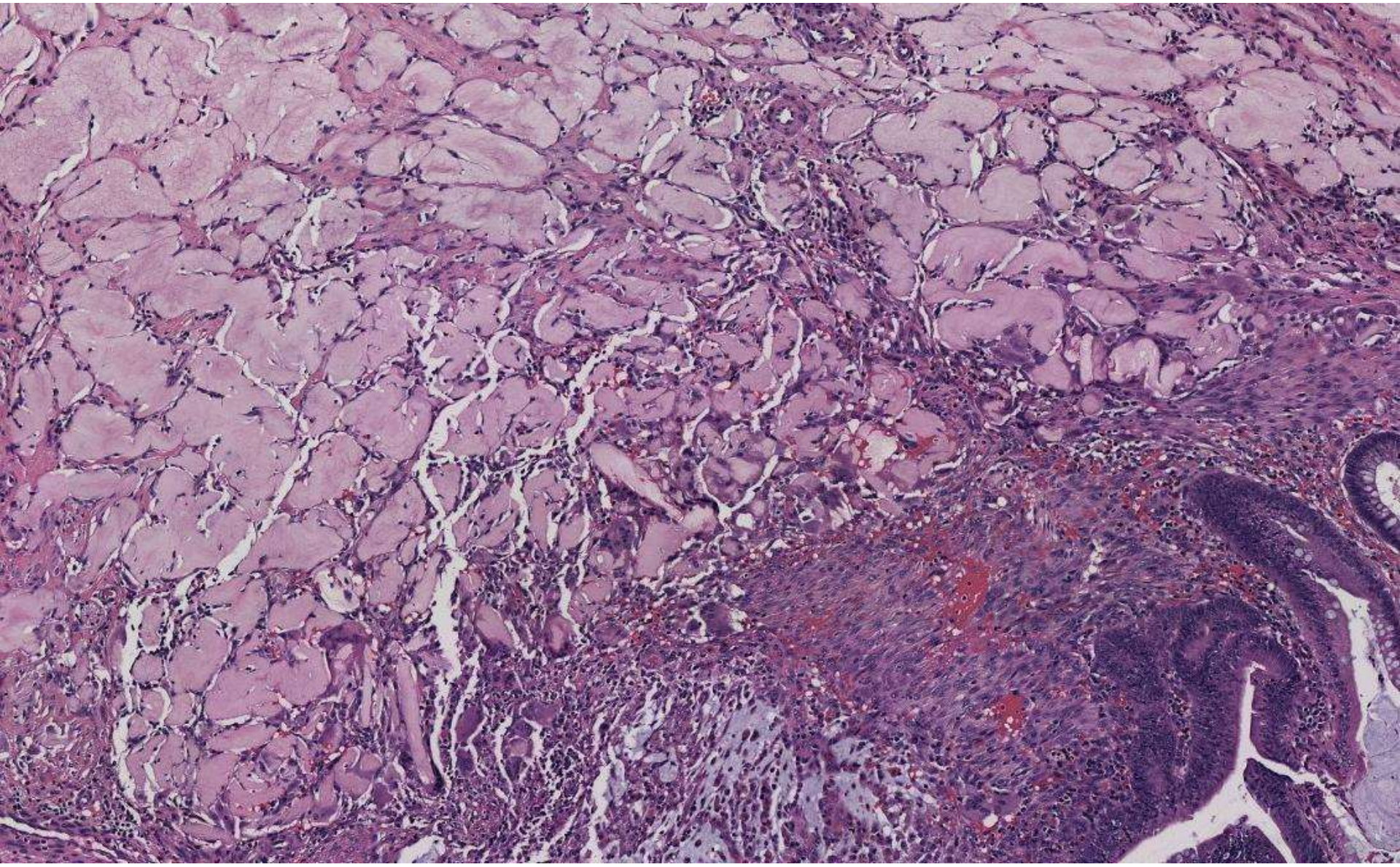


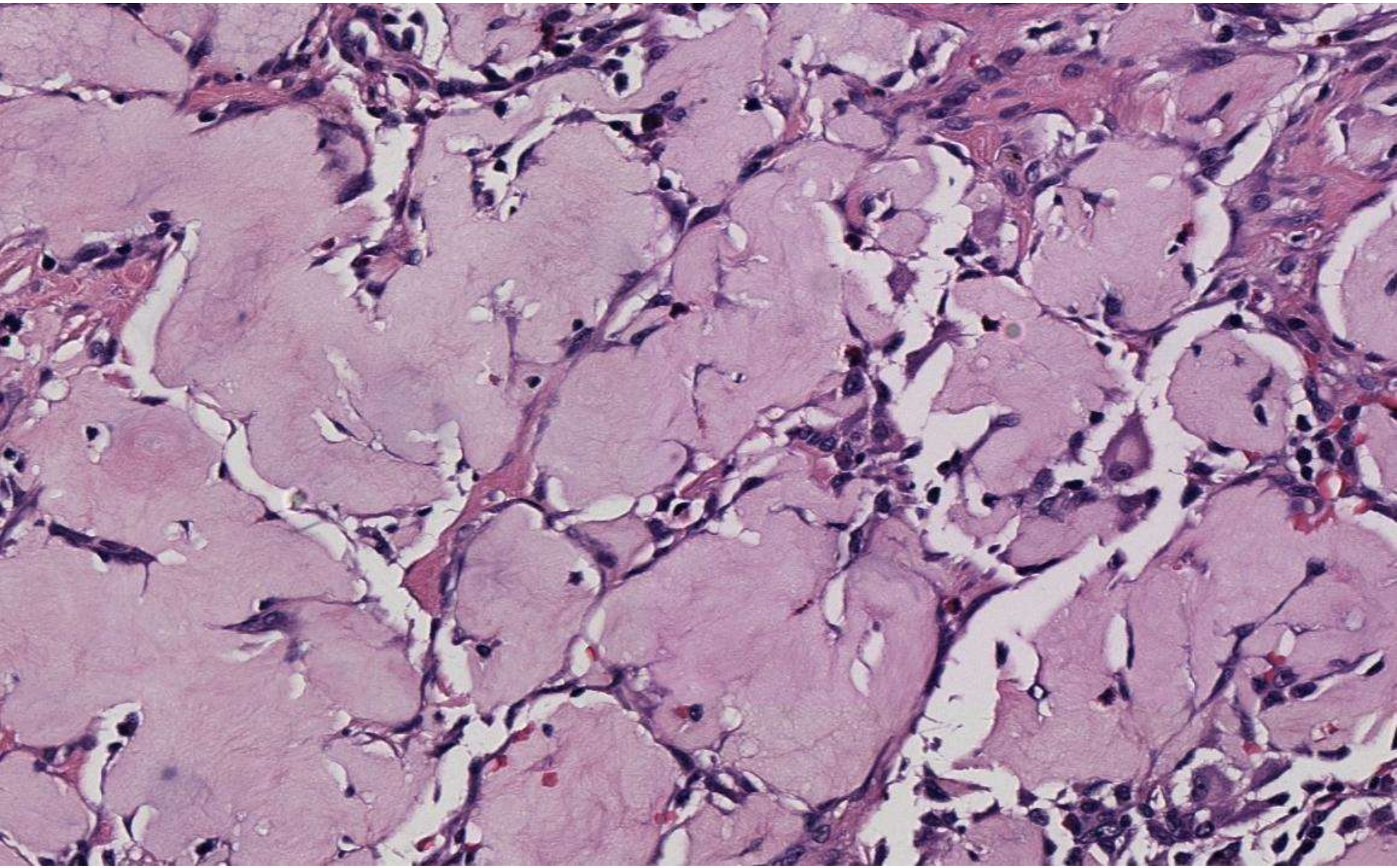


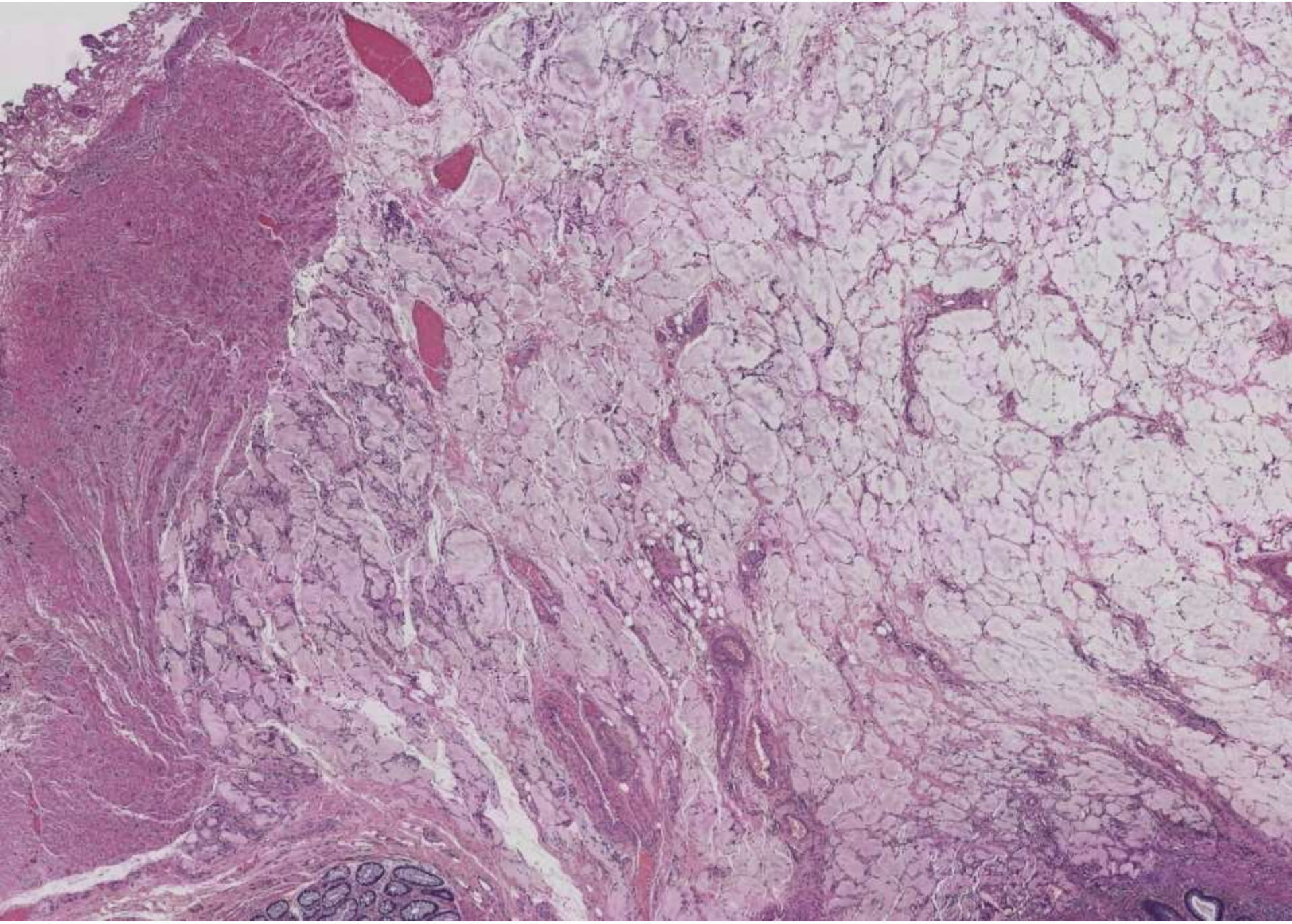


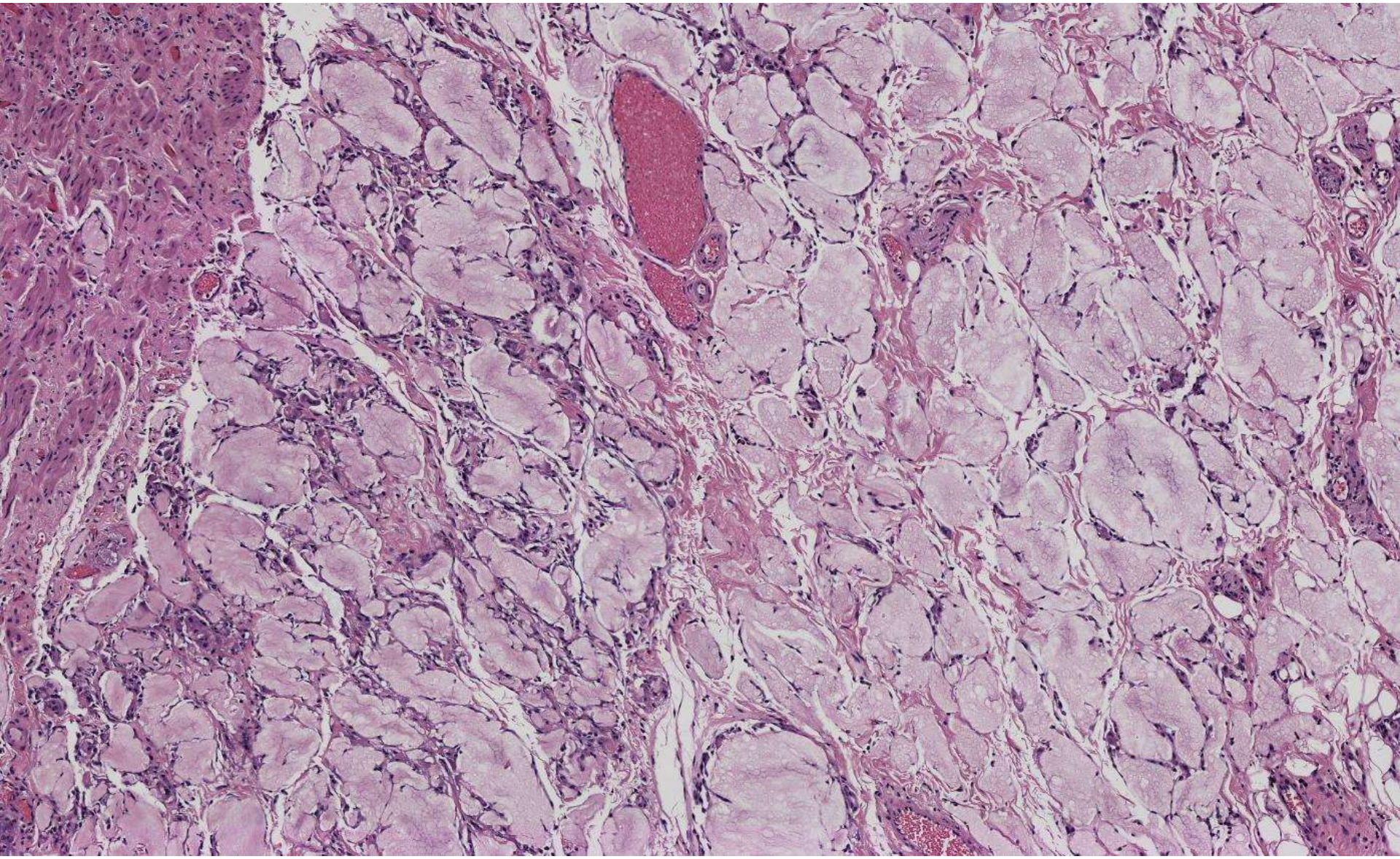


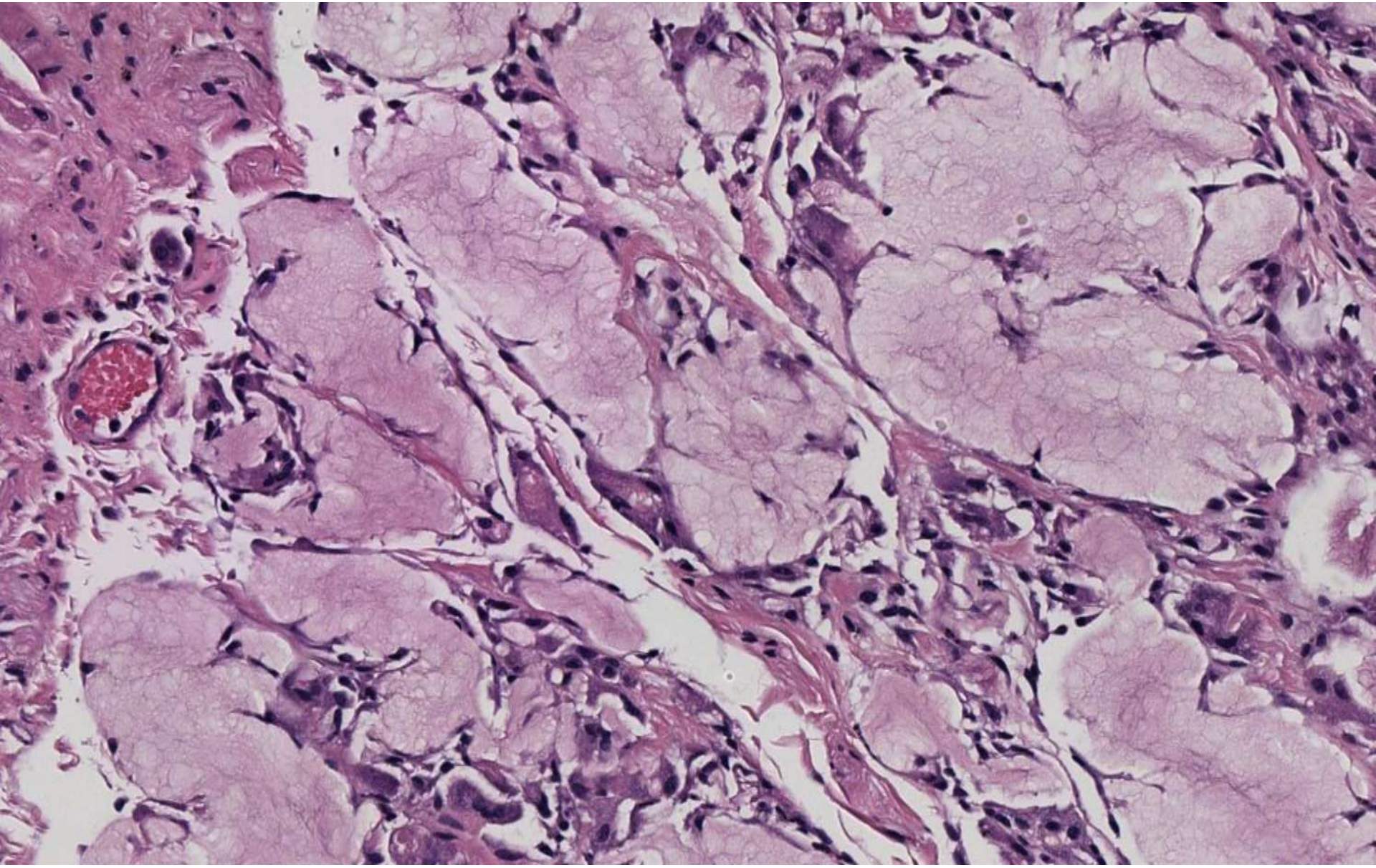












DIAGNOSIS?

Differential Diagnosis

- Amyloid
- Pulse granuloma
- Lifting agent
  - Endoscopic note: mentions Orise

Characterization of Novel Injectable Lifting Agents Used in Colonic Polyp Removal

An Emerging Amyloid Mimic

Maryam K. Pezhouh, MD, MSc, Lawrence J. Burgart, MD,† Kenrry Chiu, MD,‡ David A. Cohen, MD,§ Danielle A. Hutchings, MD,‖ Schuyler O. Sanderson, MD,† Maryam Shirazi, MD,* Peter P. Stanich, MD,¶ Christopher J. VandenBussche, MD, PhD,‖ Lysandra Voltaggio, MD,‖ Ellen D. Willhoit, BA,† Yue Xue, MD,* and Christina A. Arnold, MD#*

Lifting agents used in Colon polypectomies/EMRs

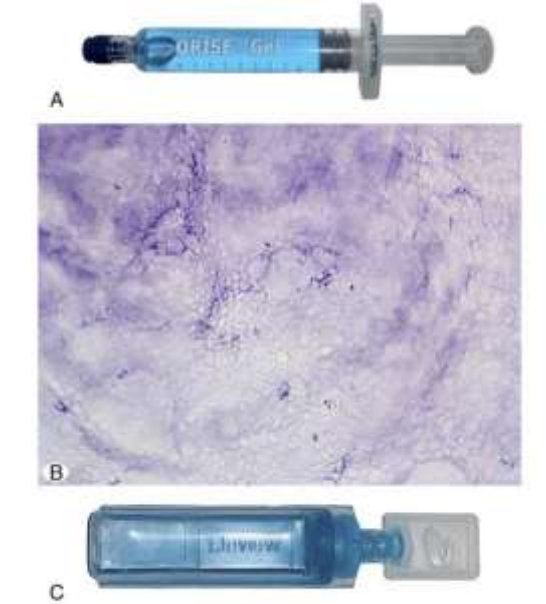


FIGURE 1. Orise (A, B) and Eleview (C) aliquots obtained from the respective manufacturers; Eleview did not survive histologic processing.

- Flat/sessile polyps
- Better visualization
- Decreases the risk of perforation
- Barrier to protect from thermal injury and bleeding complications

- Eleview (FDA approved, Cosmo technolocies, 2015, aka SIC-8000)
- Orise (Boston Scientific, 2018)

Agents

- Variety of agents:
  - Saline, cheapest and most available
    - Requires premixing with methylene blue
    - Rapidly diffuses
  - Several non-saline agents
    - Glycerol, dextrose water, hyaluronic acid, hydroxypropyl, methycellulose, fibrinogen mixture, succinylated gelatin
  - ORISE and Eleview
    - Ready for immediate use, already have methylene blue

Pathologic characteristics

- Non-polarizable and non-refractile
- Immediate: Basophilic, amorphous, and bubbly-extracellular material
- 1 day: more solid with PMNs, less bubbly
- 3 months:
  - white-tan firm mass
  - prominent hyalinized/pink amorphous ribbons/ globules with foreign body giant cell reaction

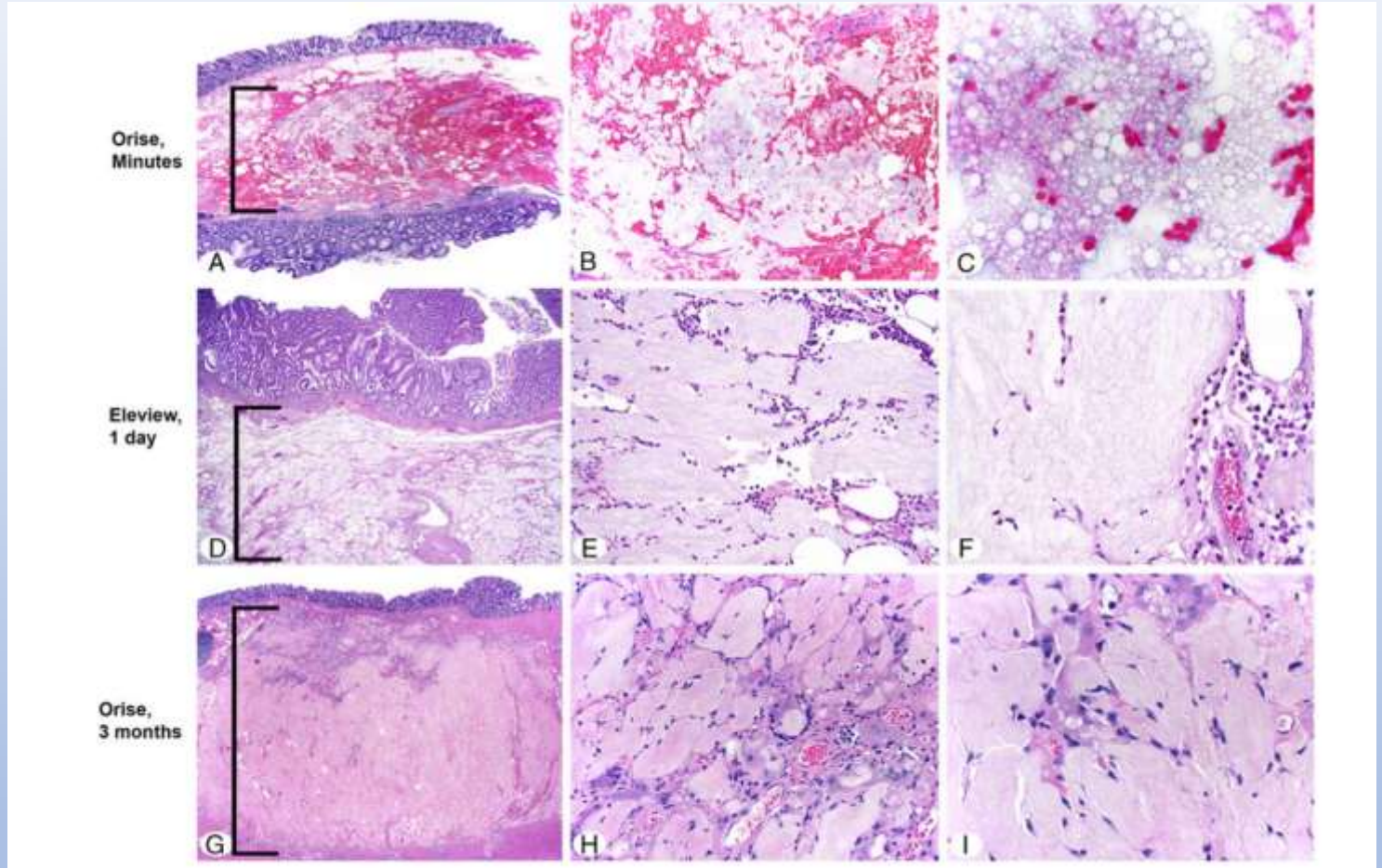


FIGURE 3. Lifting agent morphology in patient specimens. All resection specimens displayed the lifting agent in the submucosa (brackets). A–C, Resection of a polyp after immediate injection of the Orise lifting agent. D–F, Resection of a polyp 1 day after injection of the Eleview lifting agent. G–I, Resection of a polyp 3 months after injection of the Orise lifting agent.

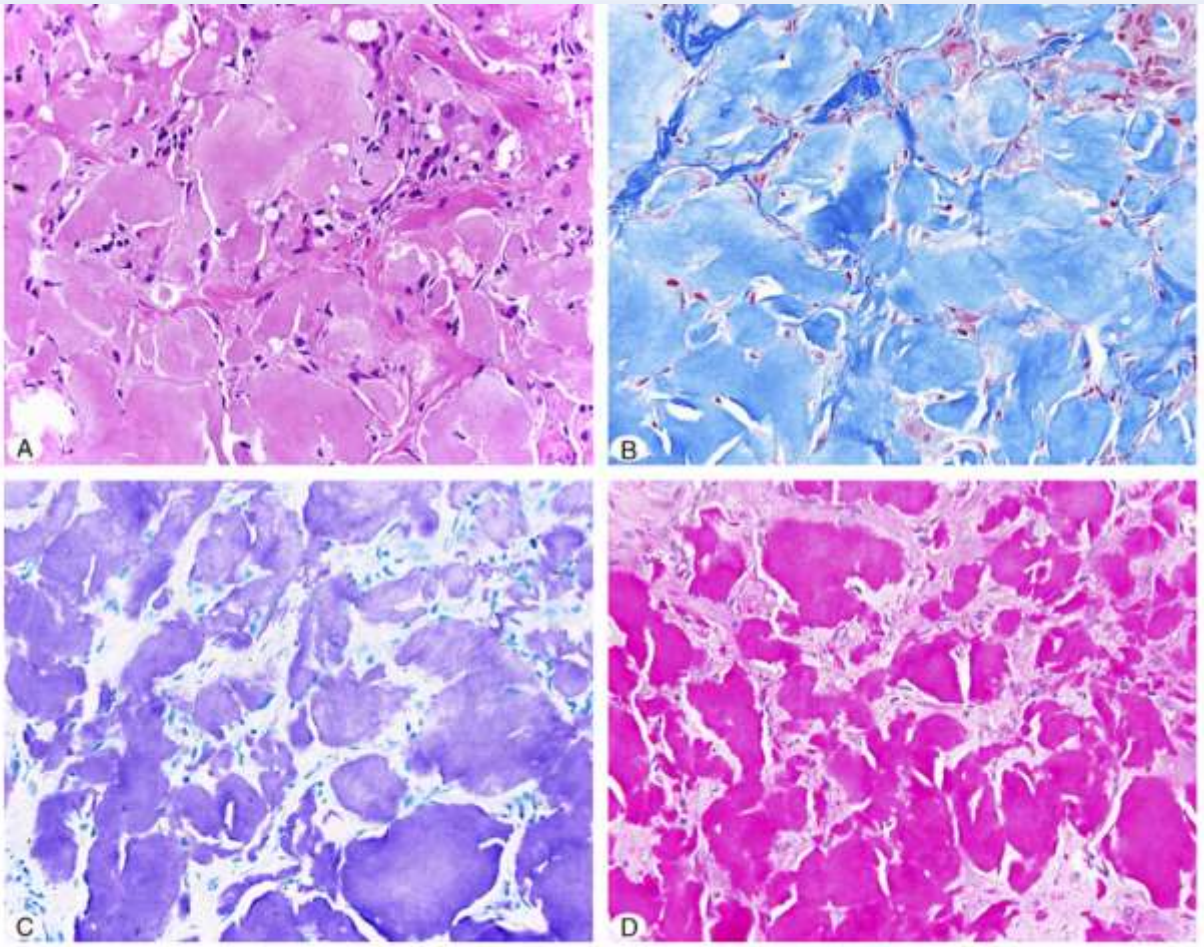


FIGURE 4. A resection specimen status post 3 months after initial Orise injection: H&E (A), trichrome (B), AFB (C), and PAS (D, a bracket highlights entrapped crospovidone—a benign pharmaceutical filler[6]).

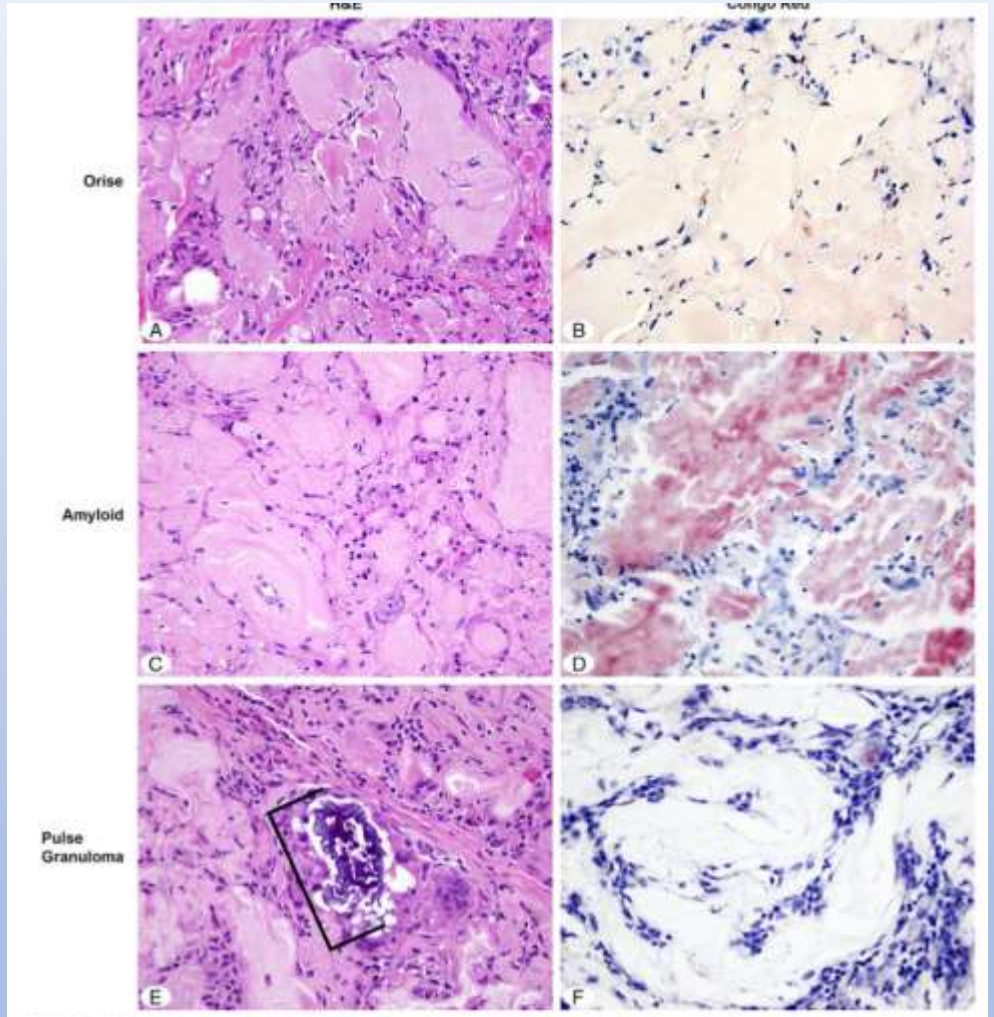


FIGURE 5. H&E and Congo Red reactivity patterns with Orise (A, B), amyloid (C, D), and pulse granulomata (E, F).

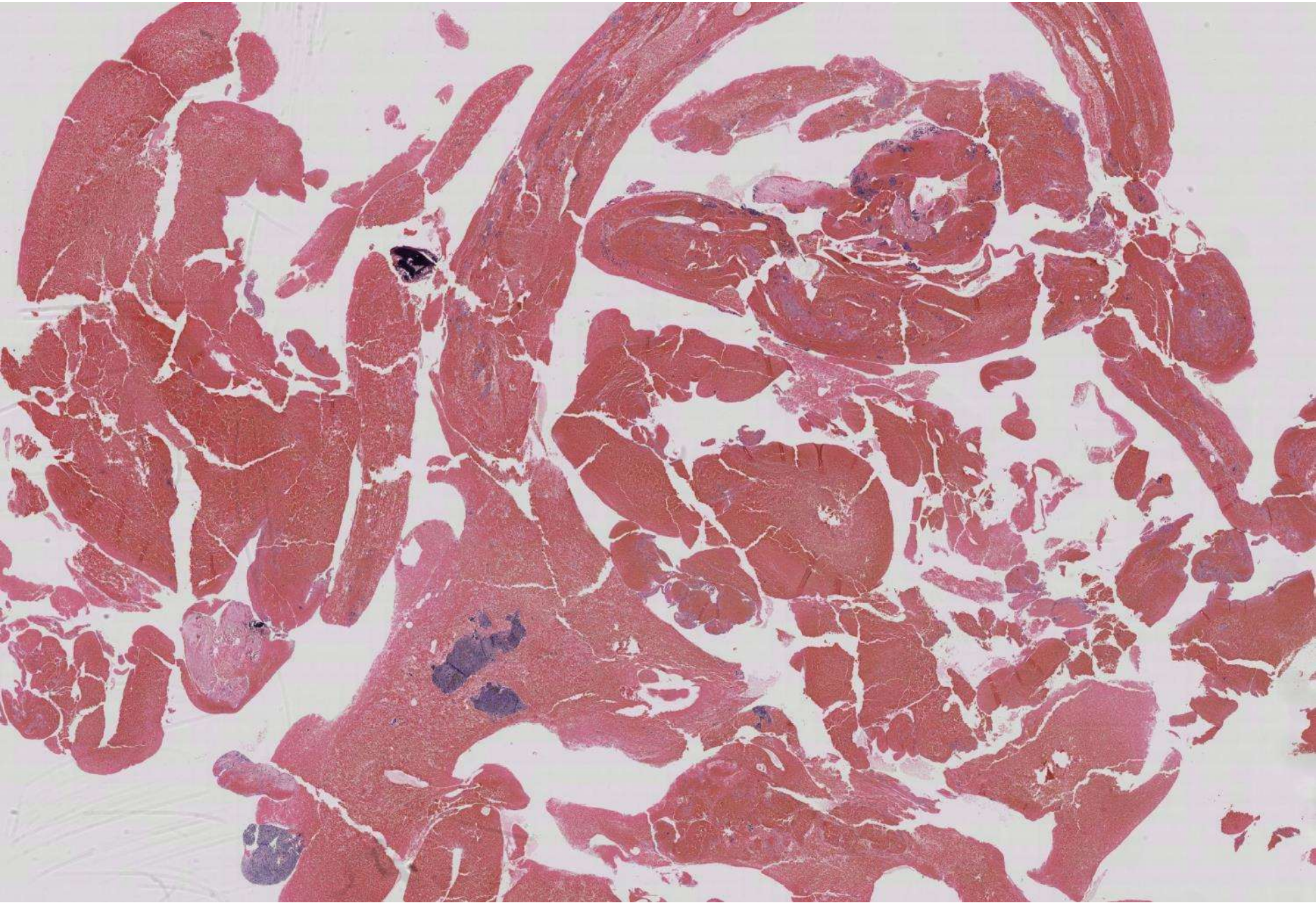
Summary

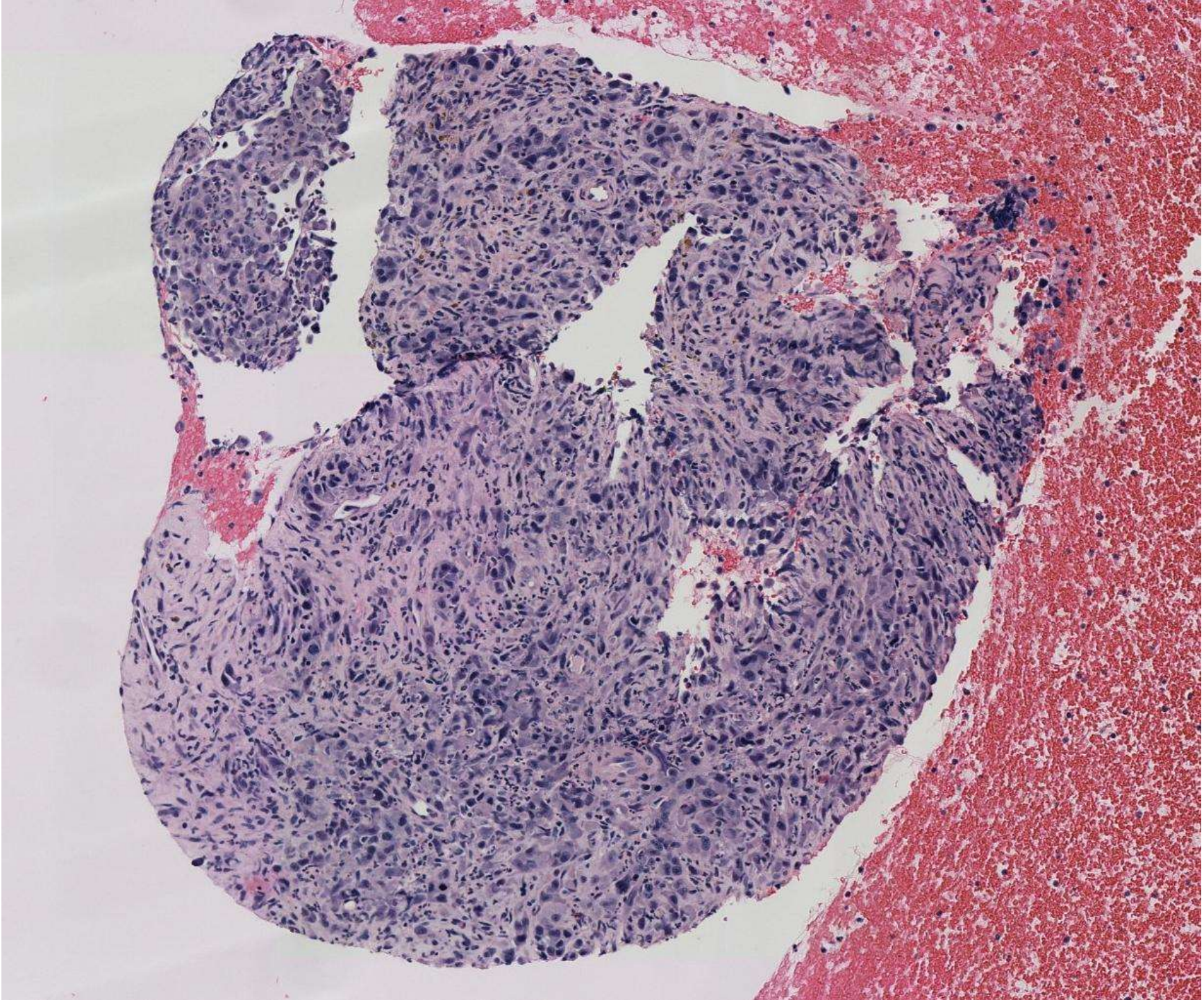
- New lifting agents may mimic amyloid
- Various appearance depending on time
- Not specific to colon, maybe seen anywhere in GI
- Check endoscopy/procedure notes

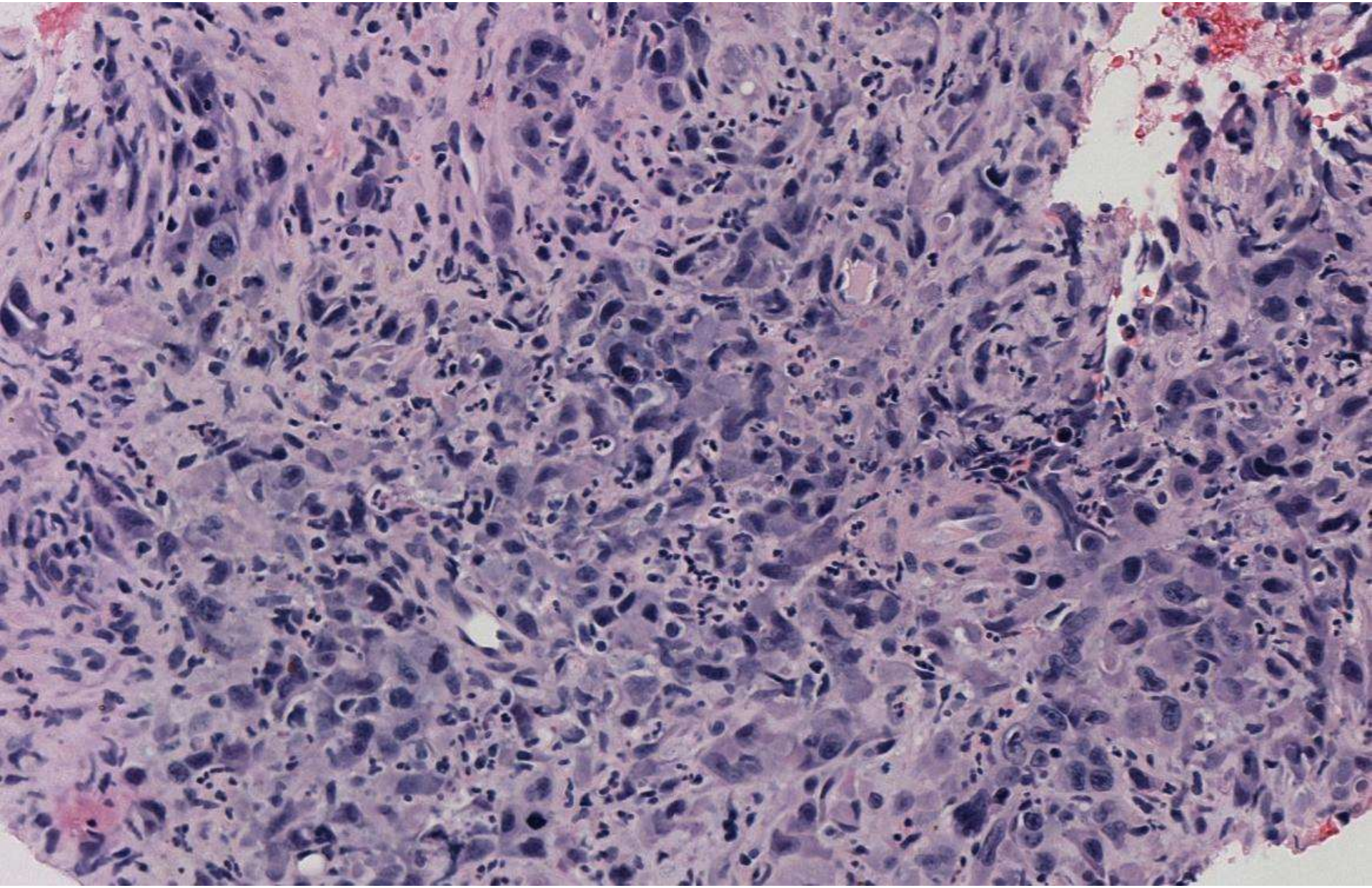
20-0306
scanned slide available!

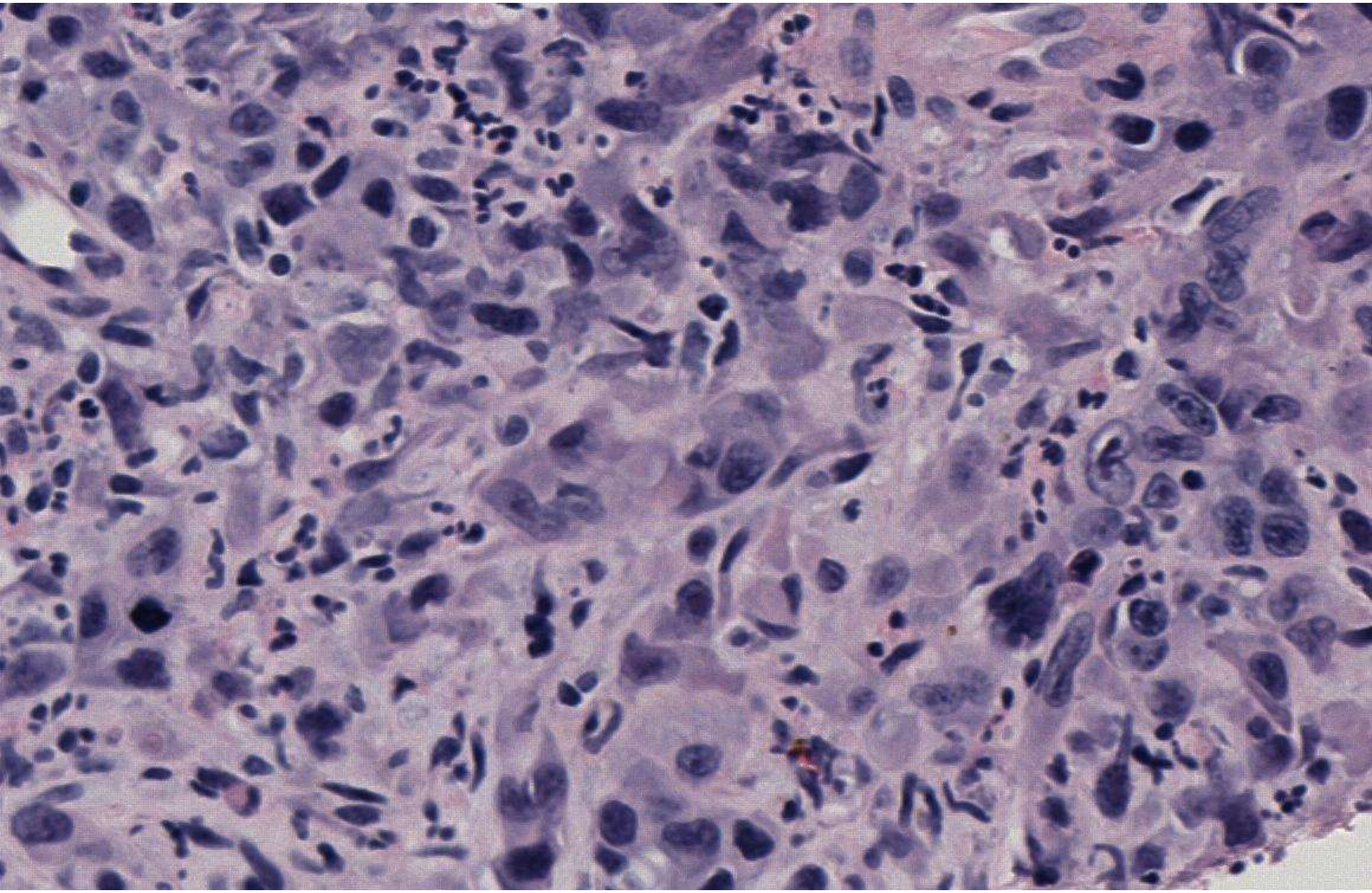
Keith Duncan; Mills-Peninsula

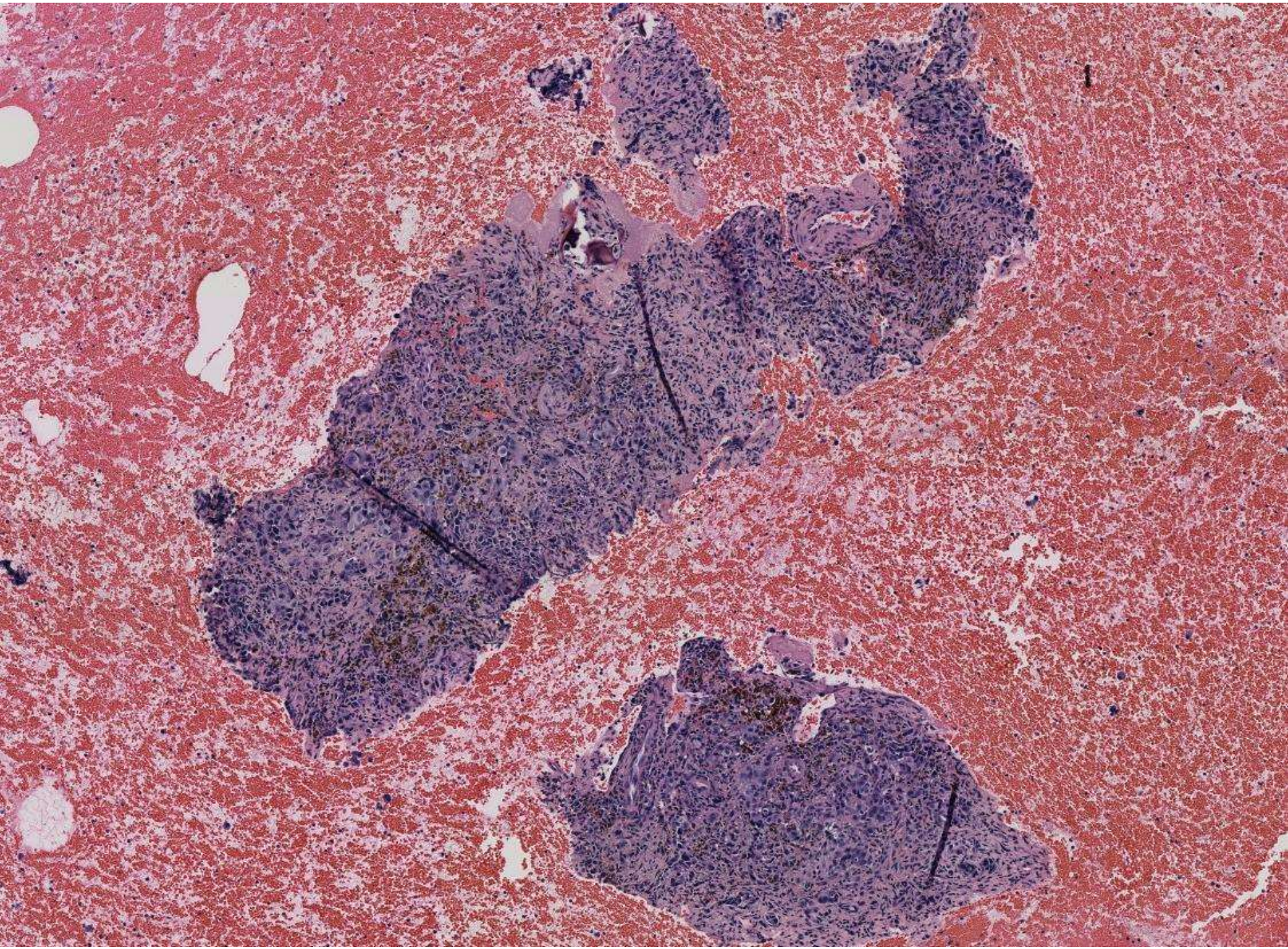
63-year-old F aortic mass and multiple bony metastasis.

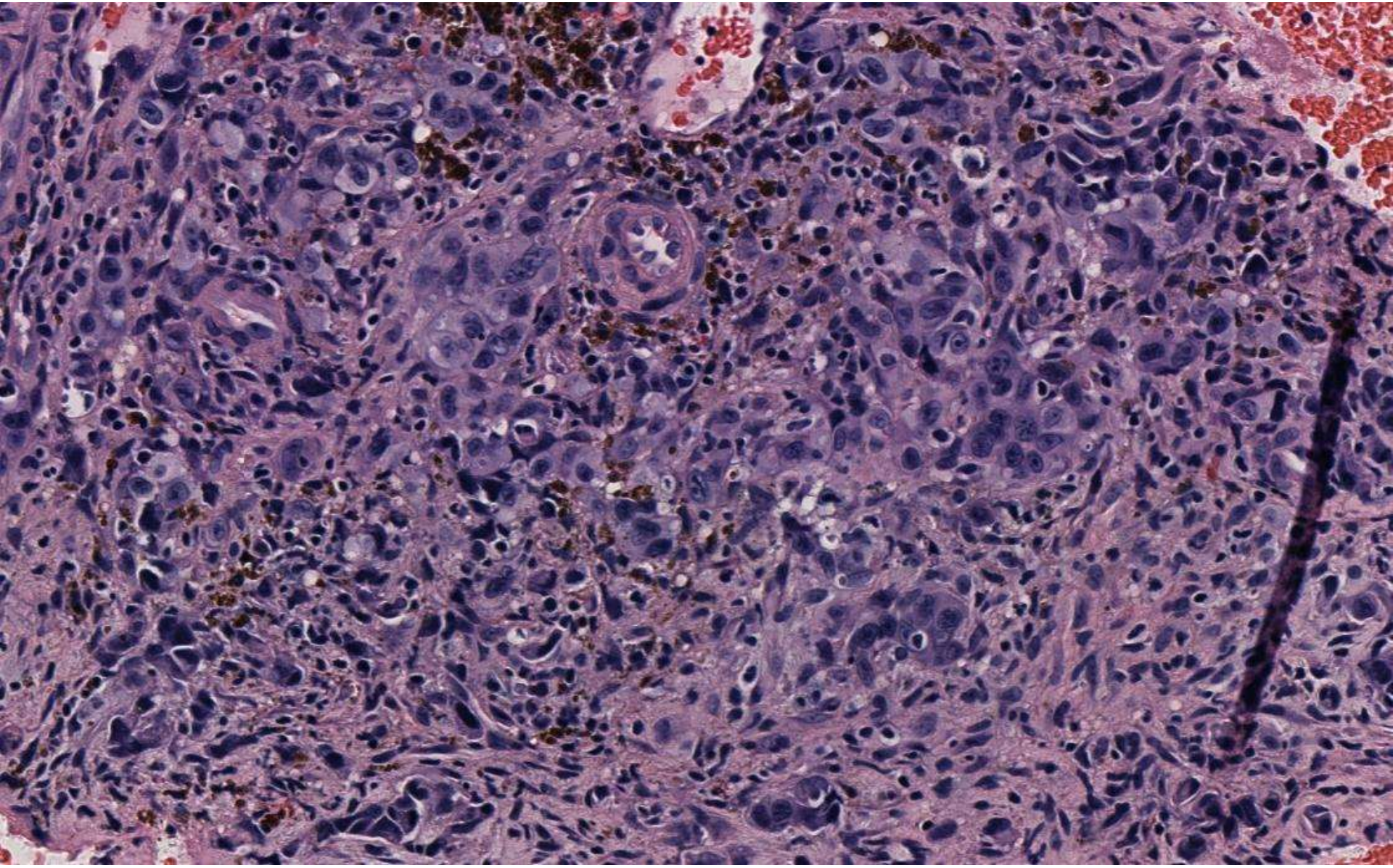


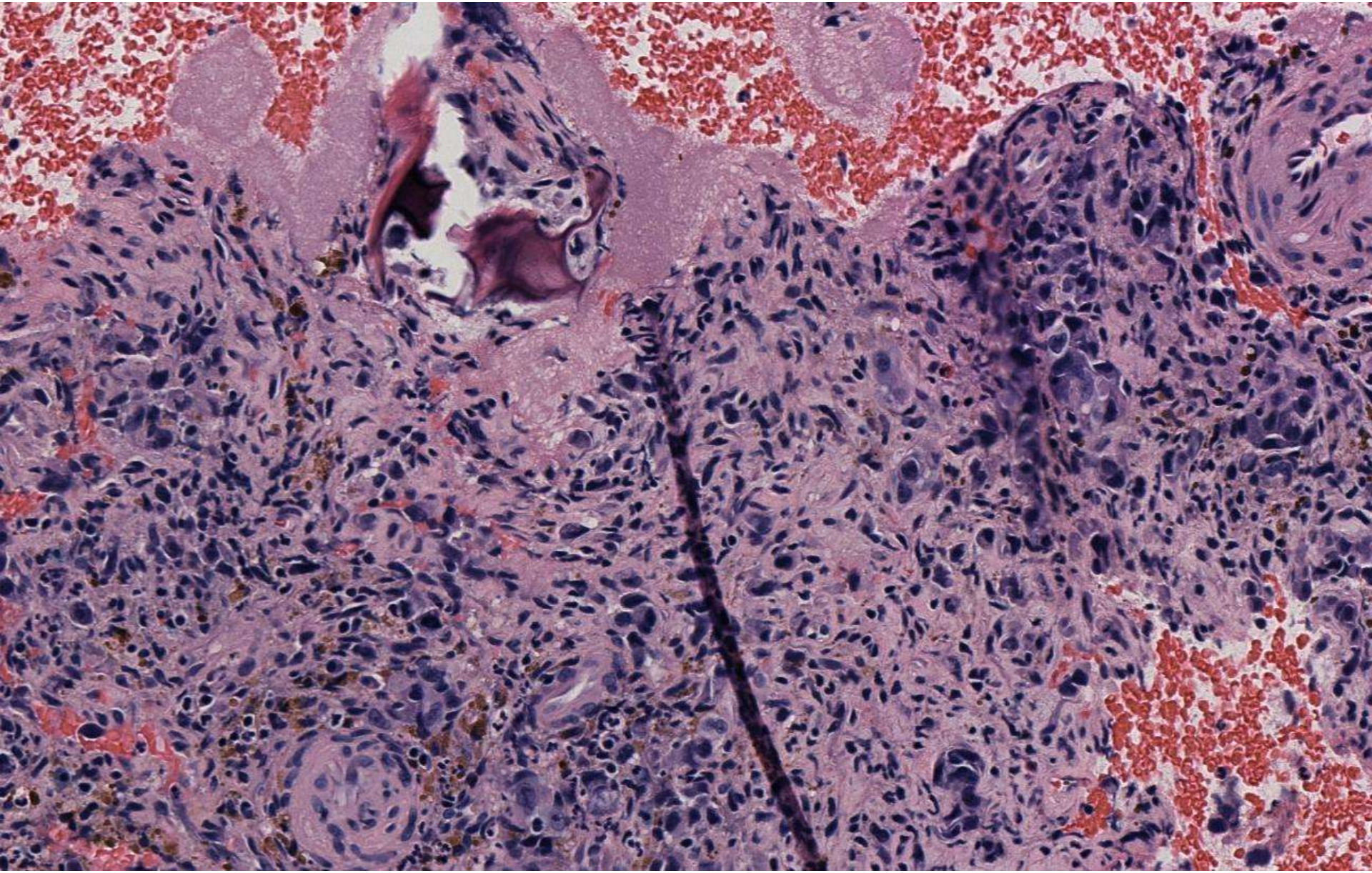


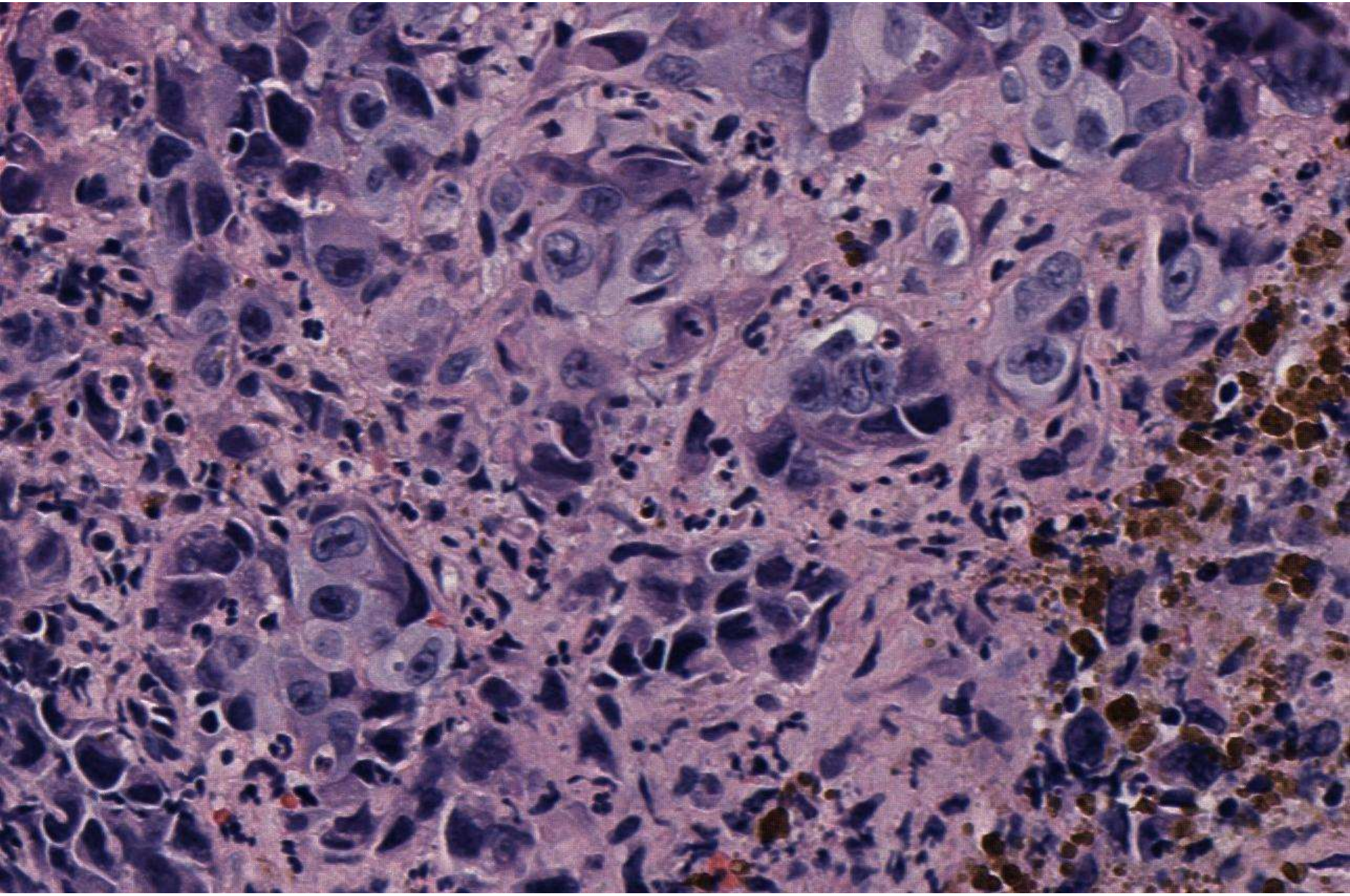


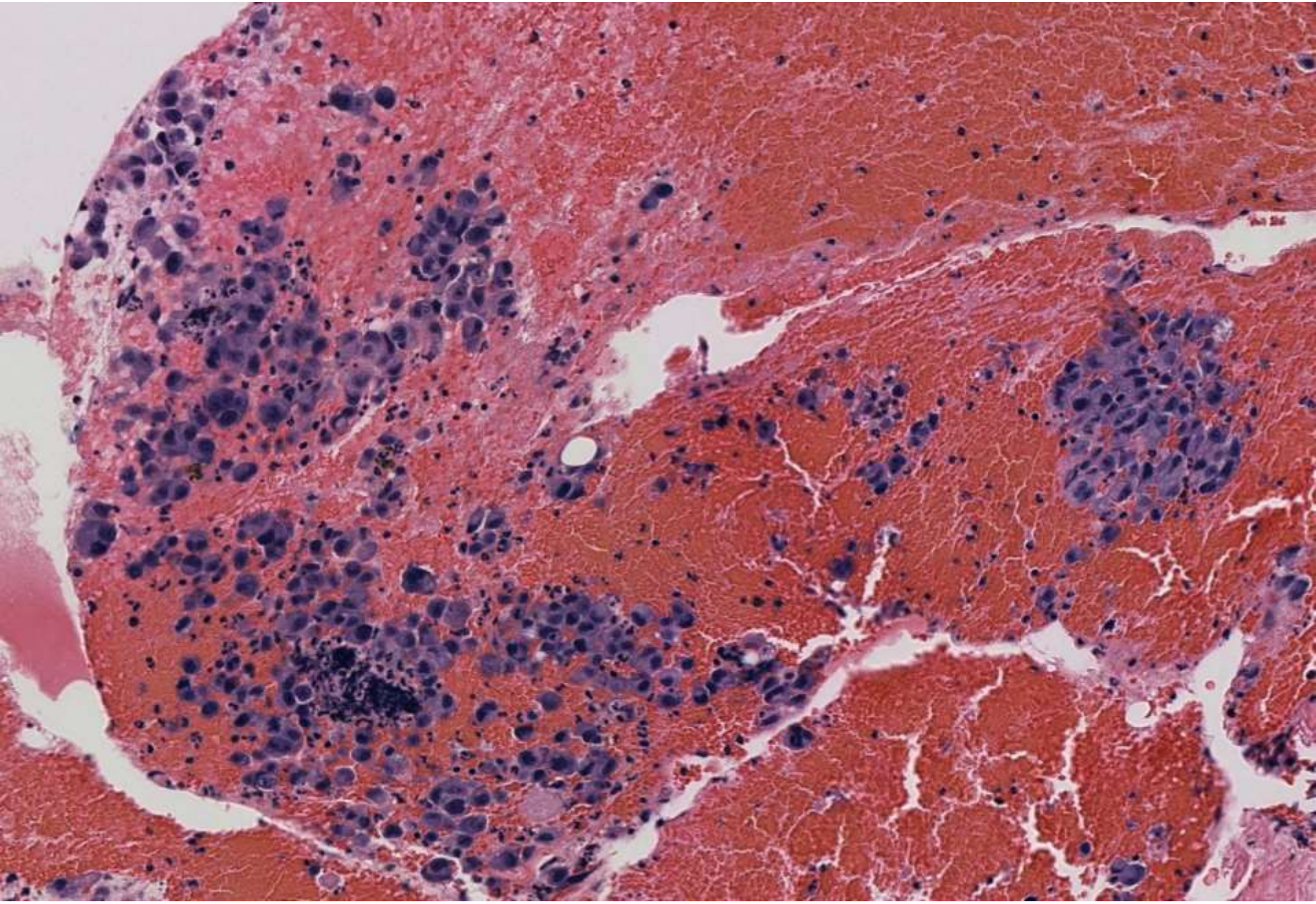


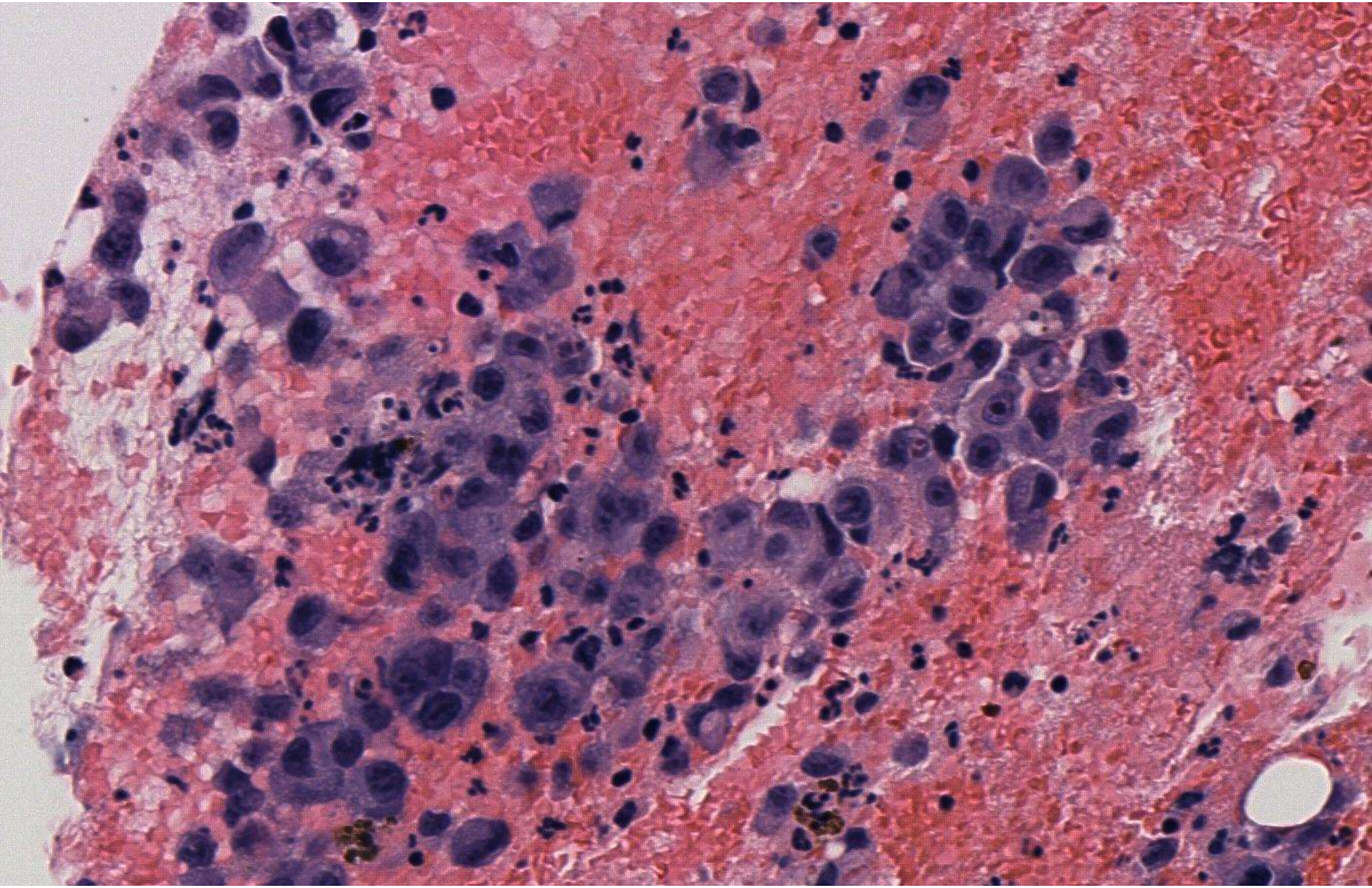












DIAGNOSIS?

Left ischial tumor

Poorly differentiated neoplasm with epithelioid tumor cells with large eccentric nuclei, prominent nucleoli, occ. Binucleate forms.

Broad differential: poorly differentiated carcinoma, melanoma, hematopoietic neoplasm, or sarcoma with epithelioid morphology such as epithelioid sarcoma, intimal sarcoma

Started with anaplastic adenocarcinoma vs melanoma:
Mel-A & S-100 – as well as CK7 and CK20.
CD34 also negative.

? Hematopoietic: all lymphoid markers negative
AE1/3 & vimentin: positive

Tossed on many epithelial markers then: all negative (Pax-8, GATA-3, CDX2, ESA and EMA).

Epithelioid angiosarcoma vs poorly differentiated carcinoma

CD31 STRONGLY POSITIVE- sent to UCSF

Differential diagnosis

- Angiosarcoma: Intimal sarcoma
- Alveolar rhabdomyosarcoma: desmin and myogenin and/or MyoD1 positivity
- Synovial sarcoma: translocation partners
- Metastatic melanoma: S100 positive
- Cardiac (atrial) myxoma: will appear as low grade lesion
- Leiomyosarcoma: desmin and SMA positivity

Molecular / cytogenetics description

IPOX STAINS:

UCSF ADDED:

PANCYTOKERATIN PATCHY POSITIVE

ERG: POSITIVE

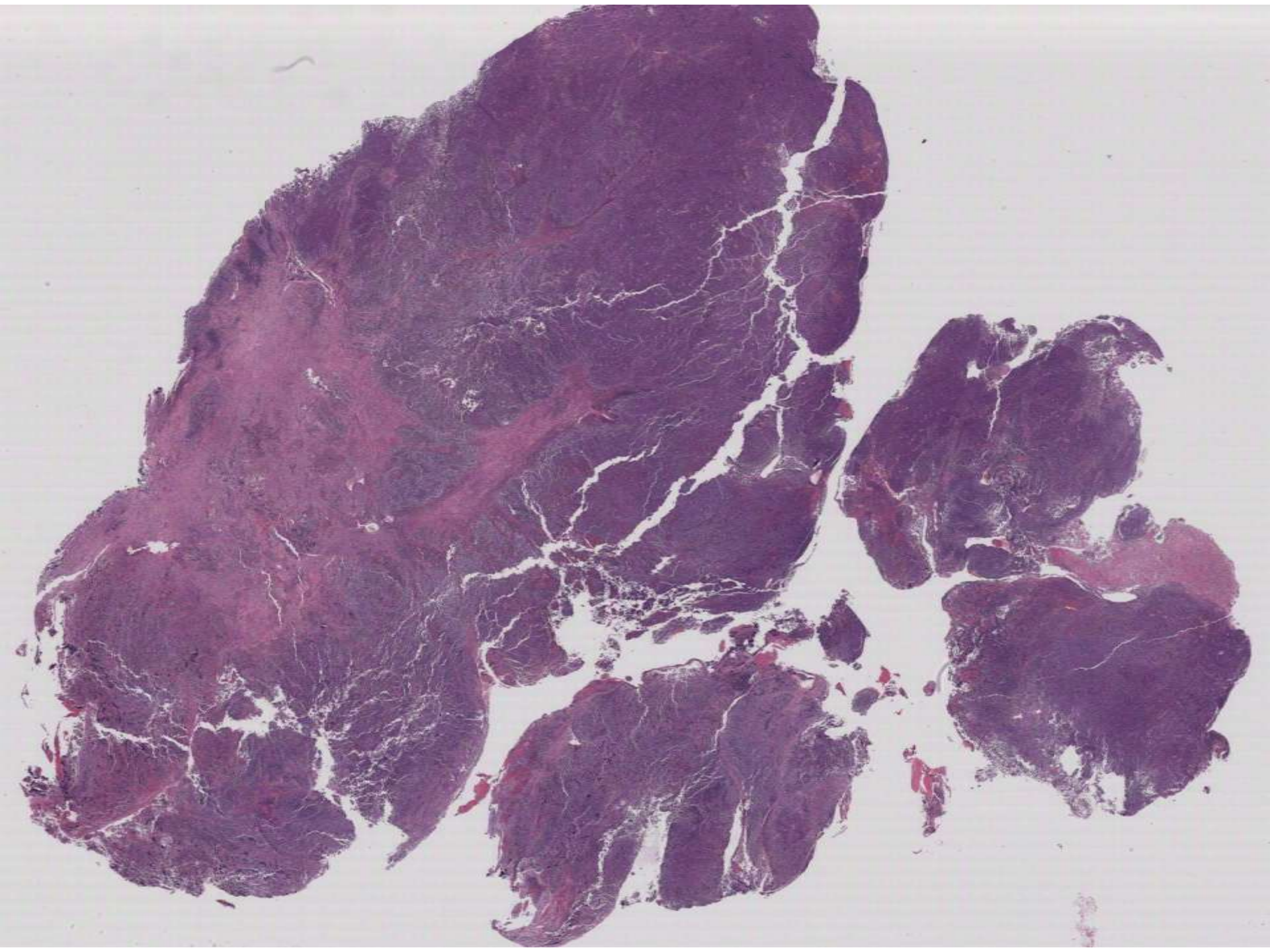
MDM2 RARE SCATTERED POSITIVE NUCLEI

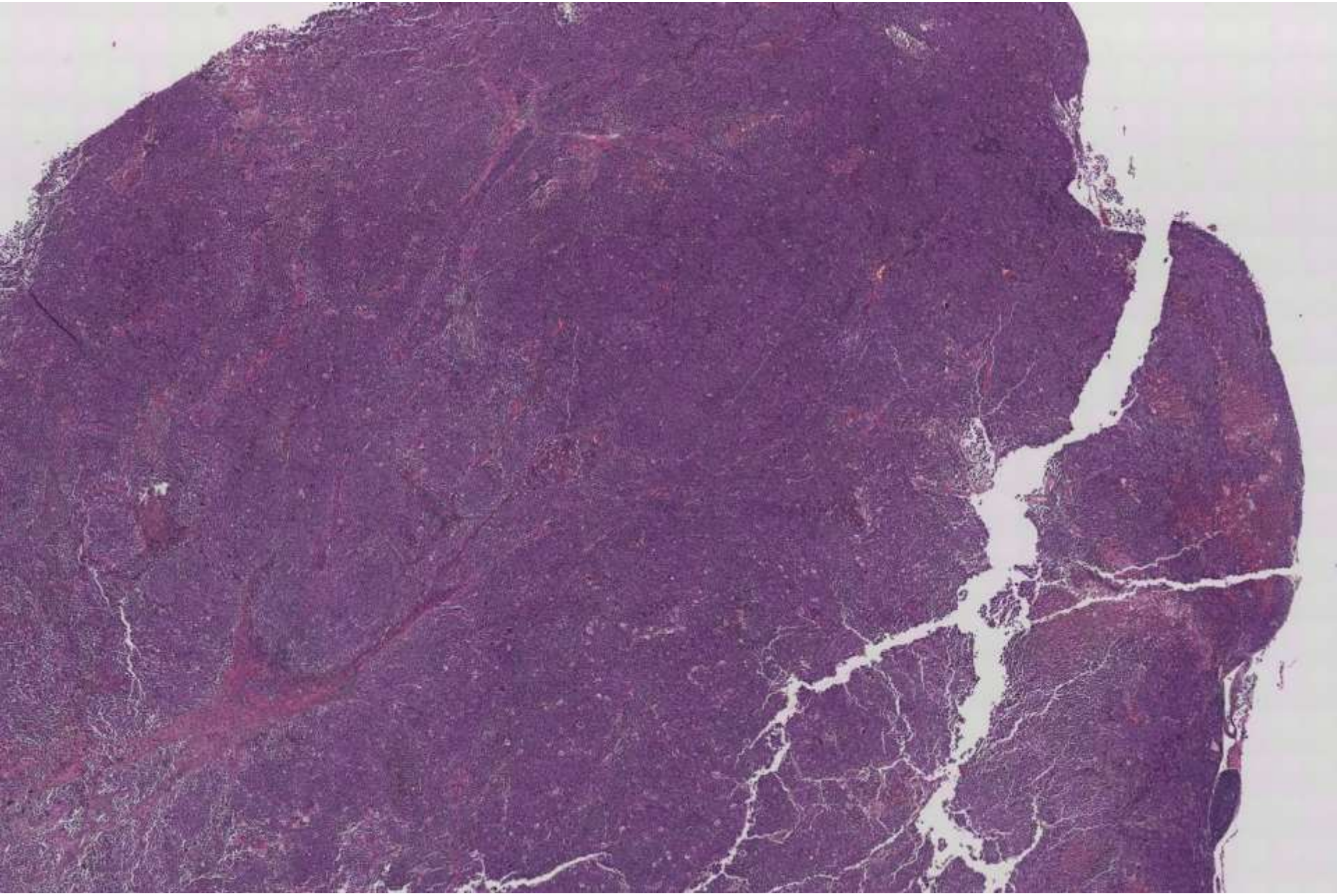
ERG, CD31, and CD34 (rare positive cells) supported vascular endothelial differentiation & patchy epithelial markers c/w epithelioid angiosarcoma. MDM2 raised possibility of intimal sarcoma

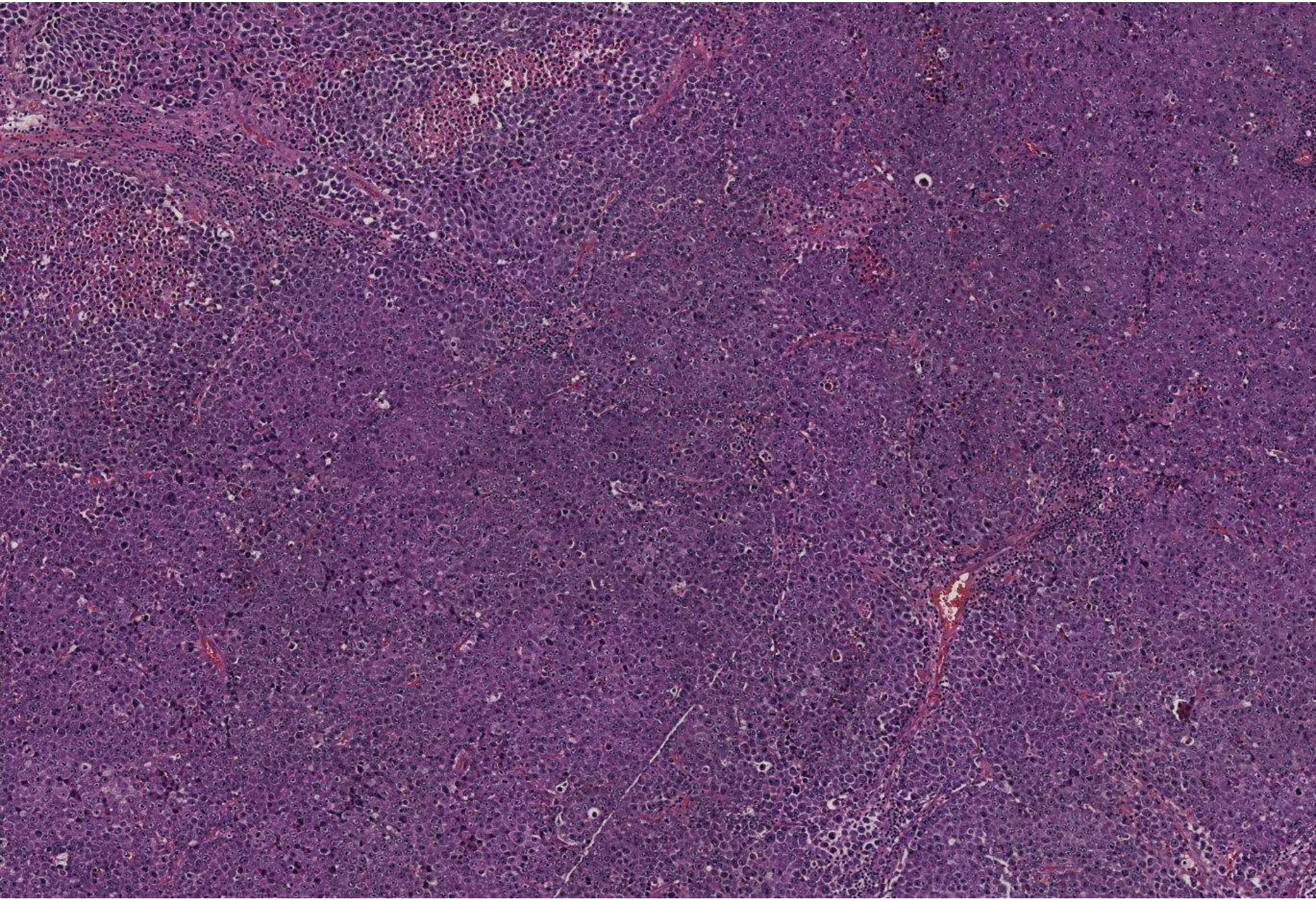
20-0307
scanned slide available!

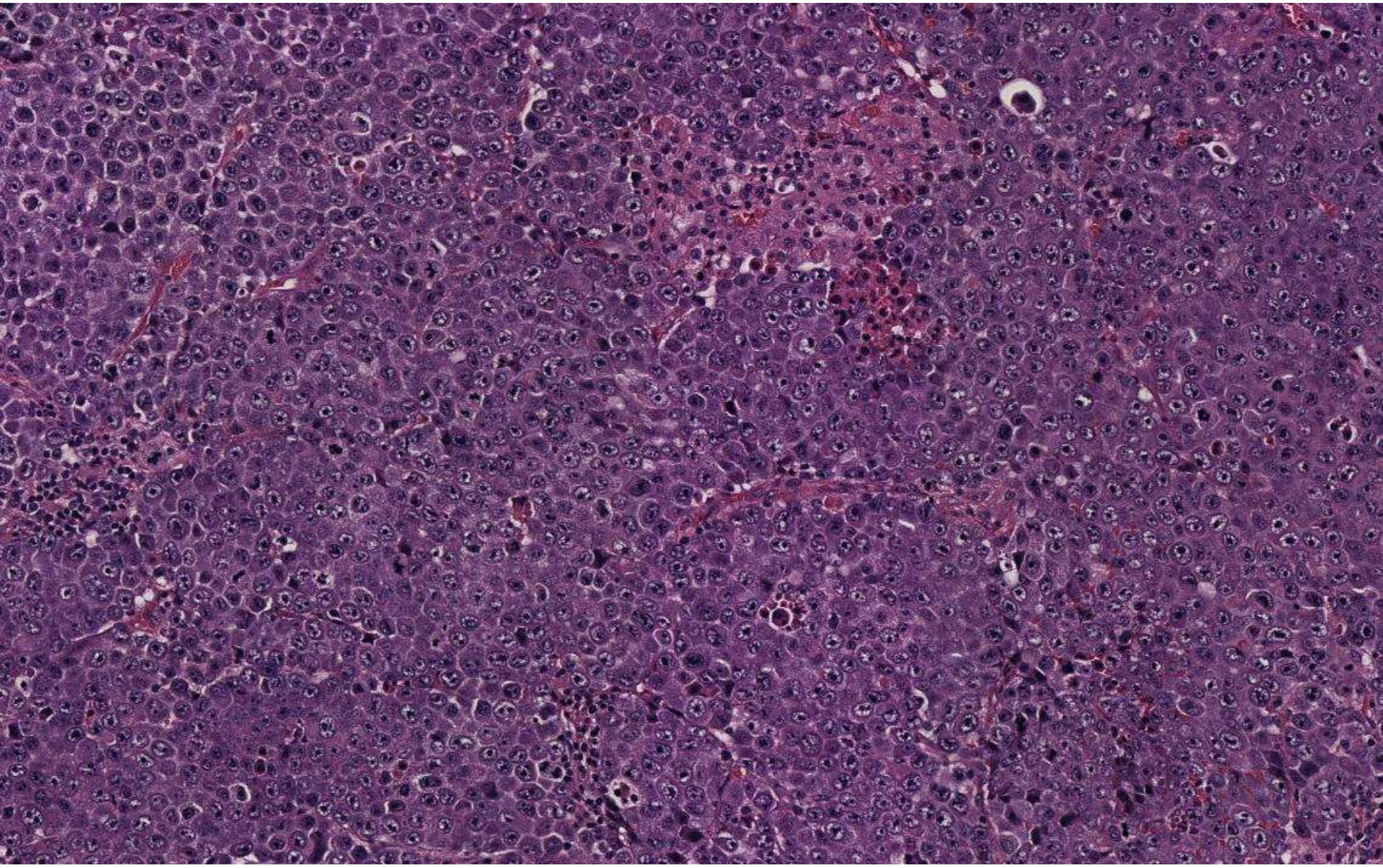
Saba Ali; El Camino Hospital

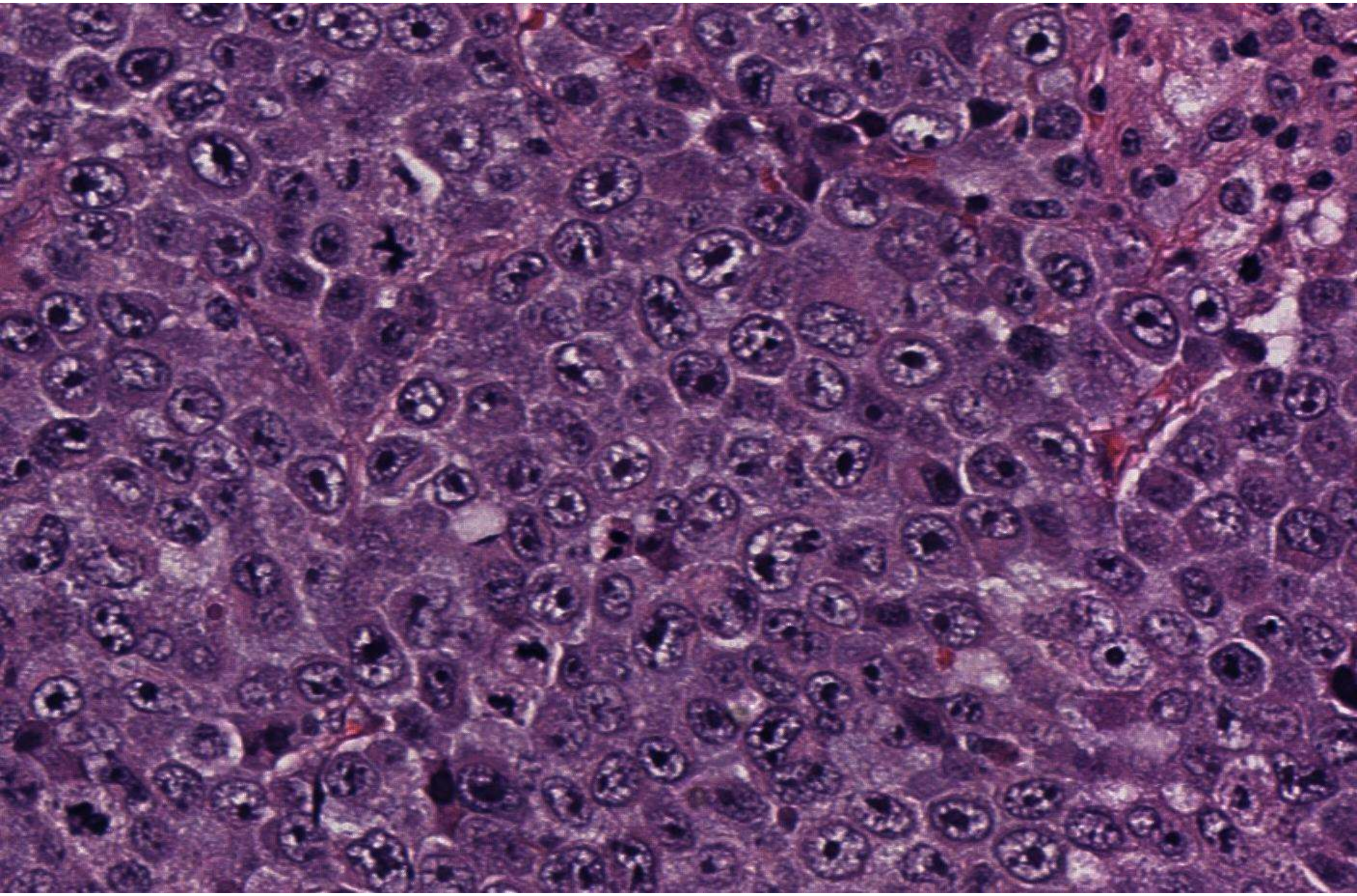
44-year-old M with neck mass.
Excisional biopsy performed.

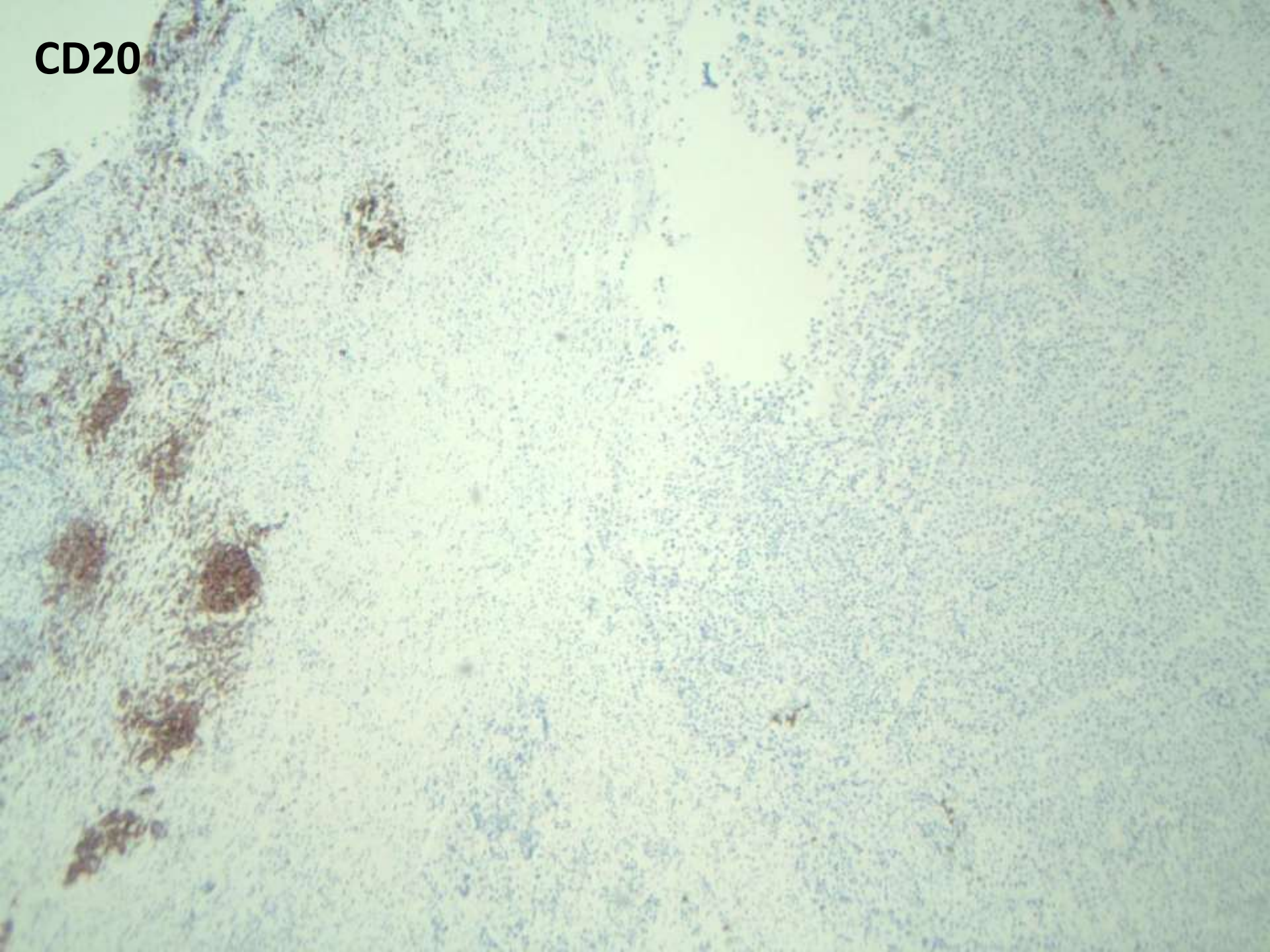




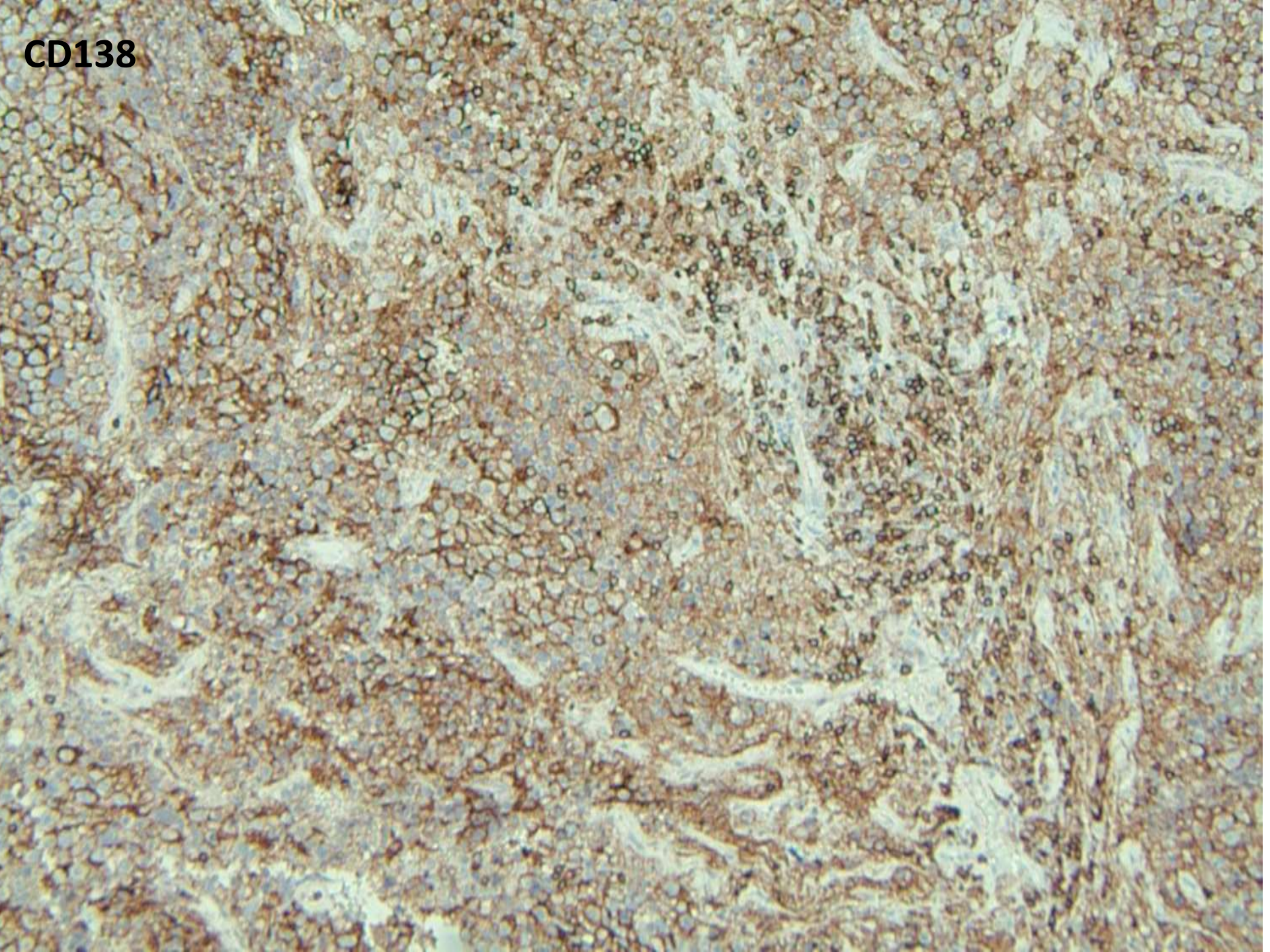


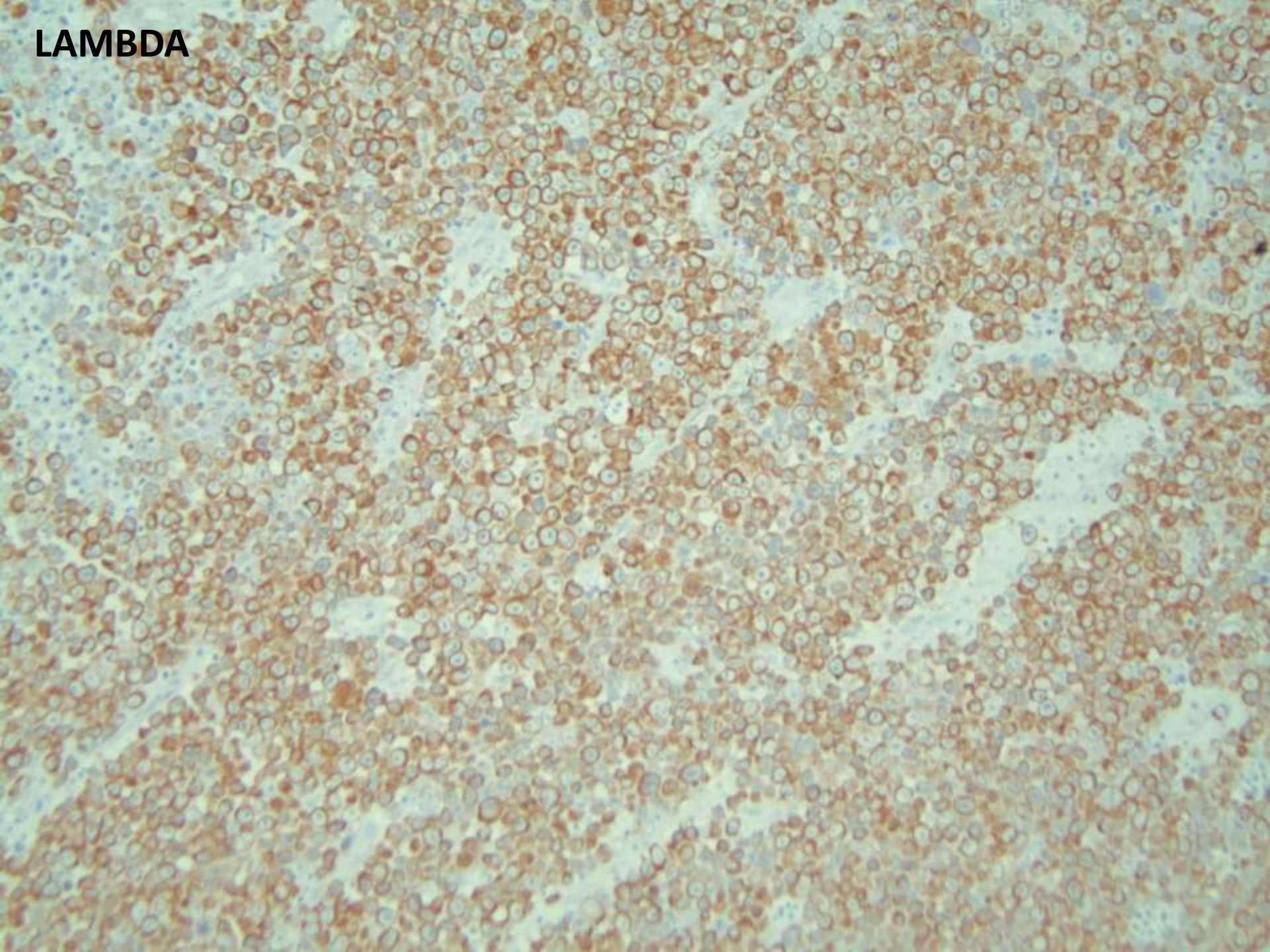





CD20


CD3


CD138


LAMBDA

DIAGNOSIS?

Differential diagnosis

T-cell lymphoma

1. Peripheral T-cell lymphoma with aberrant CD20 expression and light chain restriction
2. ALK-negative T-cell lymphoma
3. ALK-positive T-cell lymphoma

B-cell lymphoma

1. Anaplastic diffuse large B-cell lymphoma
2. Plasmablastic lymphoma
3. Plasma cell neoplasm with plasmablastic features
4. ALK-positive diffuse large B-cell lymphoma

Immunohistochemistry

Additional B-cell/plasma markers:

PAX-5: Weak, small subset

CD19: Negative

CD79a: Negative

Lambda (ish): Positive

Kappa (ish): Negative

CD10: Positive

BCL-6: Positive

BCL-2: Negative

IgA: Positive

Other markers:

EBV(ish): Negative

HHV-8: Negative

MUM-1: Positive

BOB/OCT1: Positive

CD30: Negative, rare (<1%)

BCL-1: Subset positive

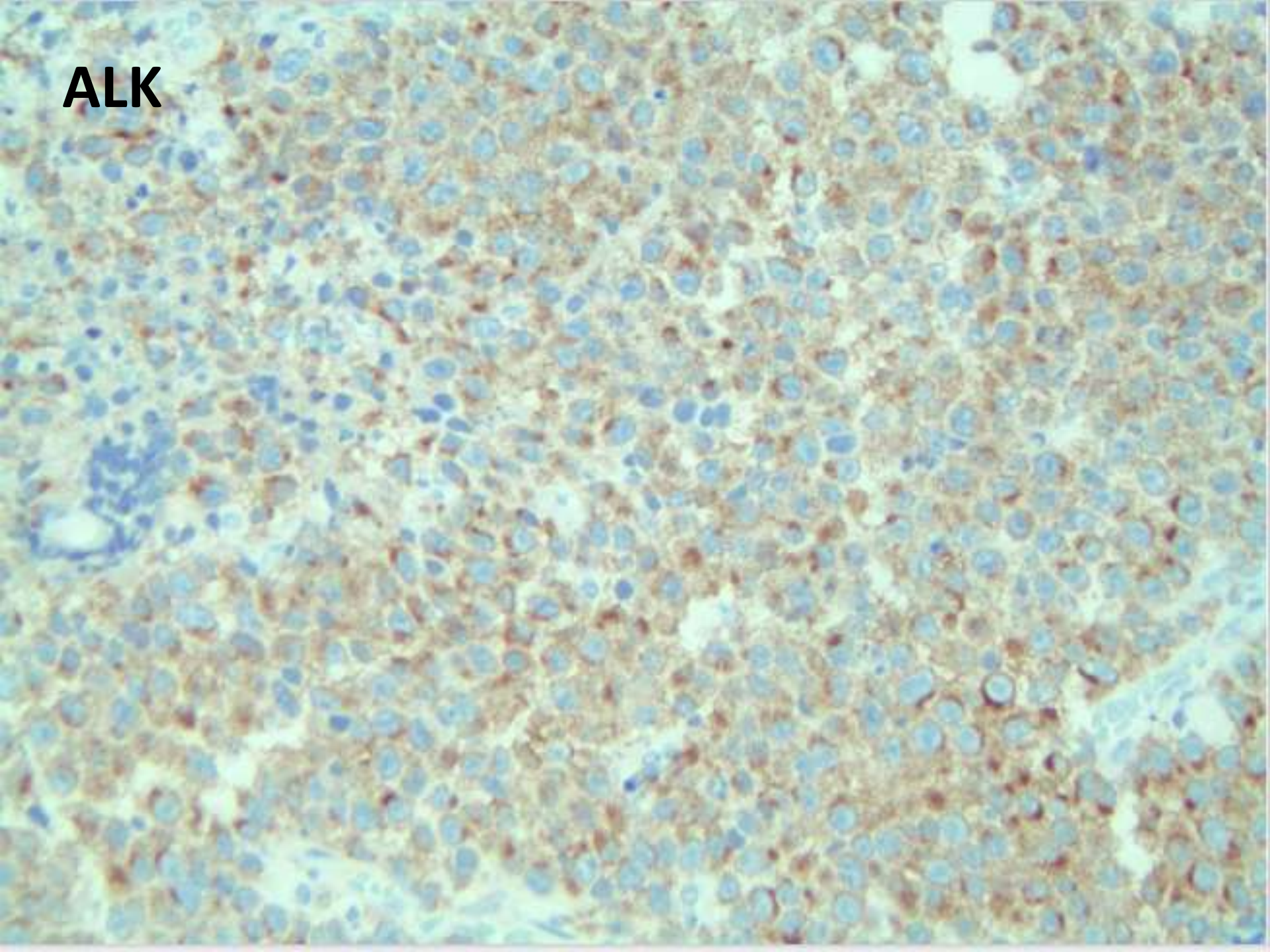
CD45: Positive

C-Myc: Positive >70%

Additional T-cell markers:

CD4: Positive CD5: Negative

CD56: Negative CD7: Negative CD8: Negative


ALK

ALK-POSITIVE DIFFUSE LARGE B-CELL LYMPHOMA

Rare lymphoma described by Delsol and colleagues in 1997

Occurs in middle-aged adults, 40s, with lymphadenopathy

M:F 3.5-1

No history of immunosuppresion

The American Journal of Surgical Pathology. 41(1):25–38, JANUARY 2017
DOI: 10.1097/PAS.0000000000000753, PMID: 27740969
Issn Print: 0147-5185
Publication Date: January 2017

Print

ALK-positive Large B-cell Lymphoma: A Clinicopathologic Study of 26 Cases With Review of Additional 108 Cases in the Literature

Zenggang Pan;Shimin Hu;Min Li;Yi Zhou;Young Kim;Vishnu Reddy;Jennifer Sanmann;Lynette Smith;Mingyi Chen;Zifen Gao;Huan-You Wang;Ji Yuan;

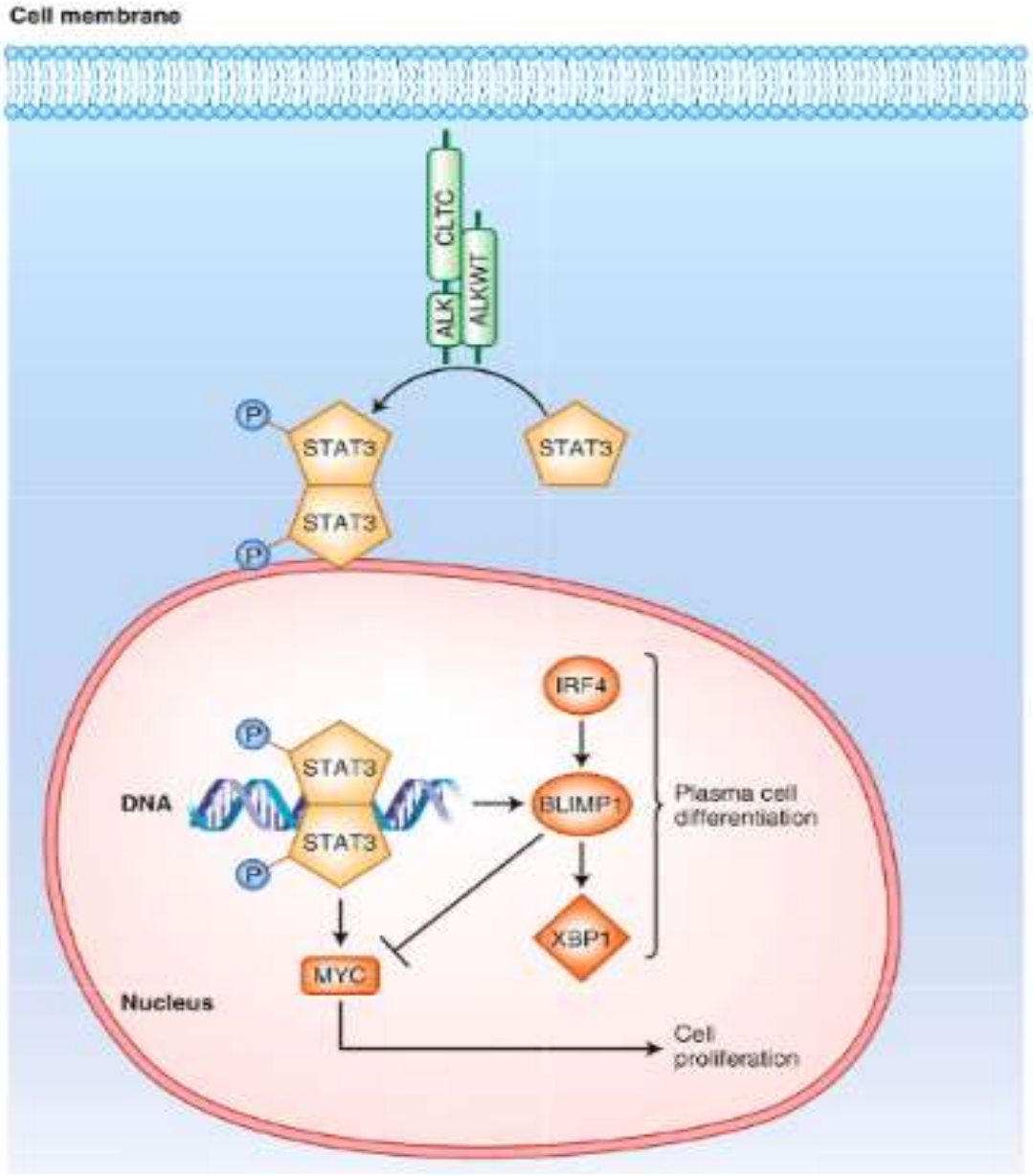
Vast majority of cases showed immunoblastic and/or plasmablastic morphology.

Common B-cell markers (CD20, CD79a, and PAX5) were typically negative, but the tumor cells mostly expressed 2 B-cell transcriptional factors, BOB1 and OCT2.

The 5-year overall survival (OS) was 34%, and the median survival was 1.83 years. In patients with stage III/IV disease, the 5-year OS was only 8%.

Moreover, patients below 35 years of age had a significantly better OS than those aged 35 years or above.

Molecular testing



- Most common is the t(2;17)(p23;q23) translocation, which leads to fusion of *CLTC* (clathrin) with *ALK*.
- Rare cases with the t(2;5)(p23;q35) (*NPM-ALK*) translocation have also been reported.
- Other uncommon fused genes to *ALK* are *SQSTM1*, *SEC31A*, and others.
- complex karyotypes

Take home points

- When in doubt, THROW ON ALK !!
- CD3 can be aberrantly expressed in B-cell lymphomas and CD20 in T-cell lymphomas
- Always correlate with clinical history for immunosuppresion, get EBV/HHV-8
- DLBCL with morphologic plasma cell differentiation and expression of mature B-cell markers such as CD20 or PAX5 and strong cytoplasmic immunoglobulin expression should not be considered plasmablastic lymphomas

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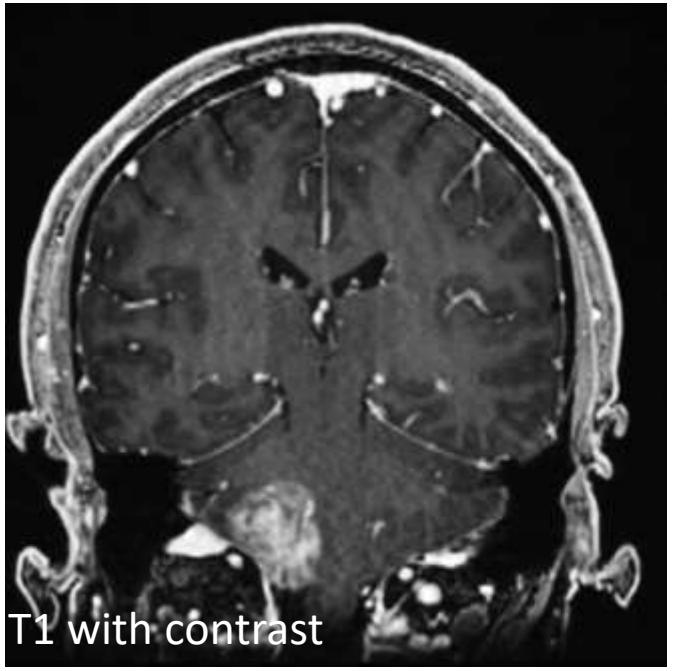
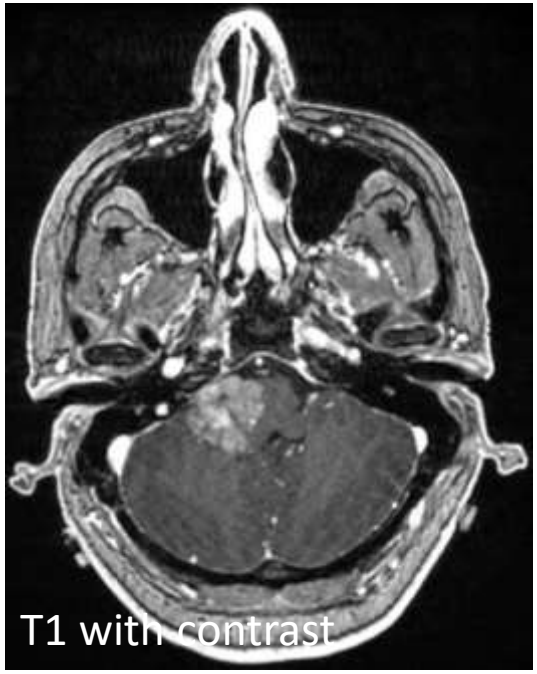
20-0308

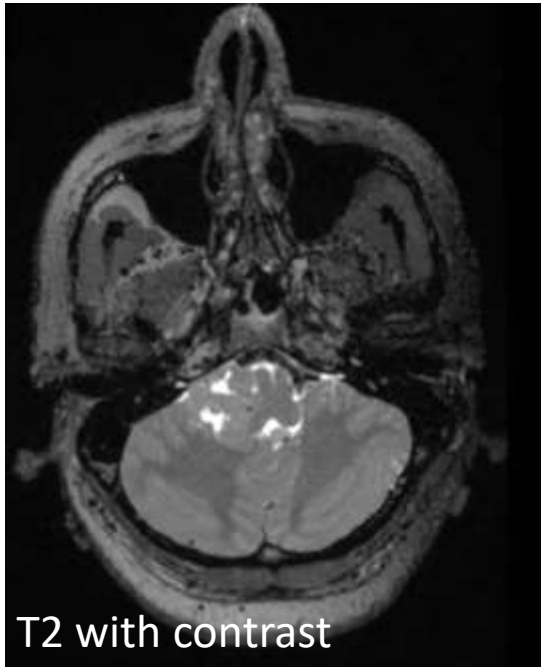
Romain Cayrol/Donald Born; Stanford

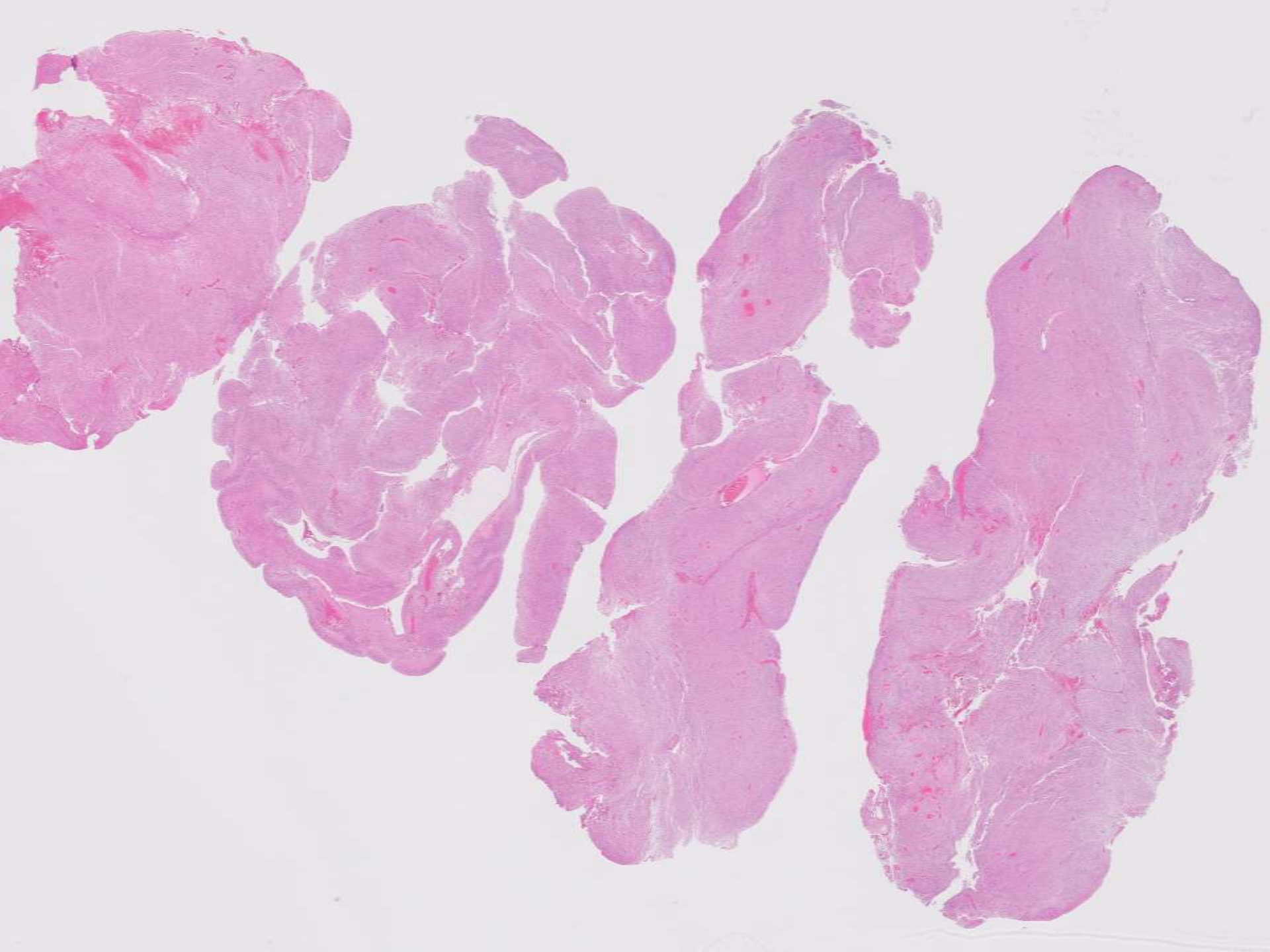
40-year-old M presenting with headache, nausea, and flu-like symptoms. Imaging revealed a heterogenously T2 hyperintense/isotense and enhancing lesion centered within the right cereberllomedullary angle with extension through the pars nervosa of the jugular foramen.

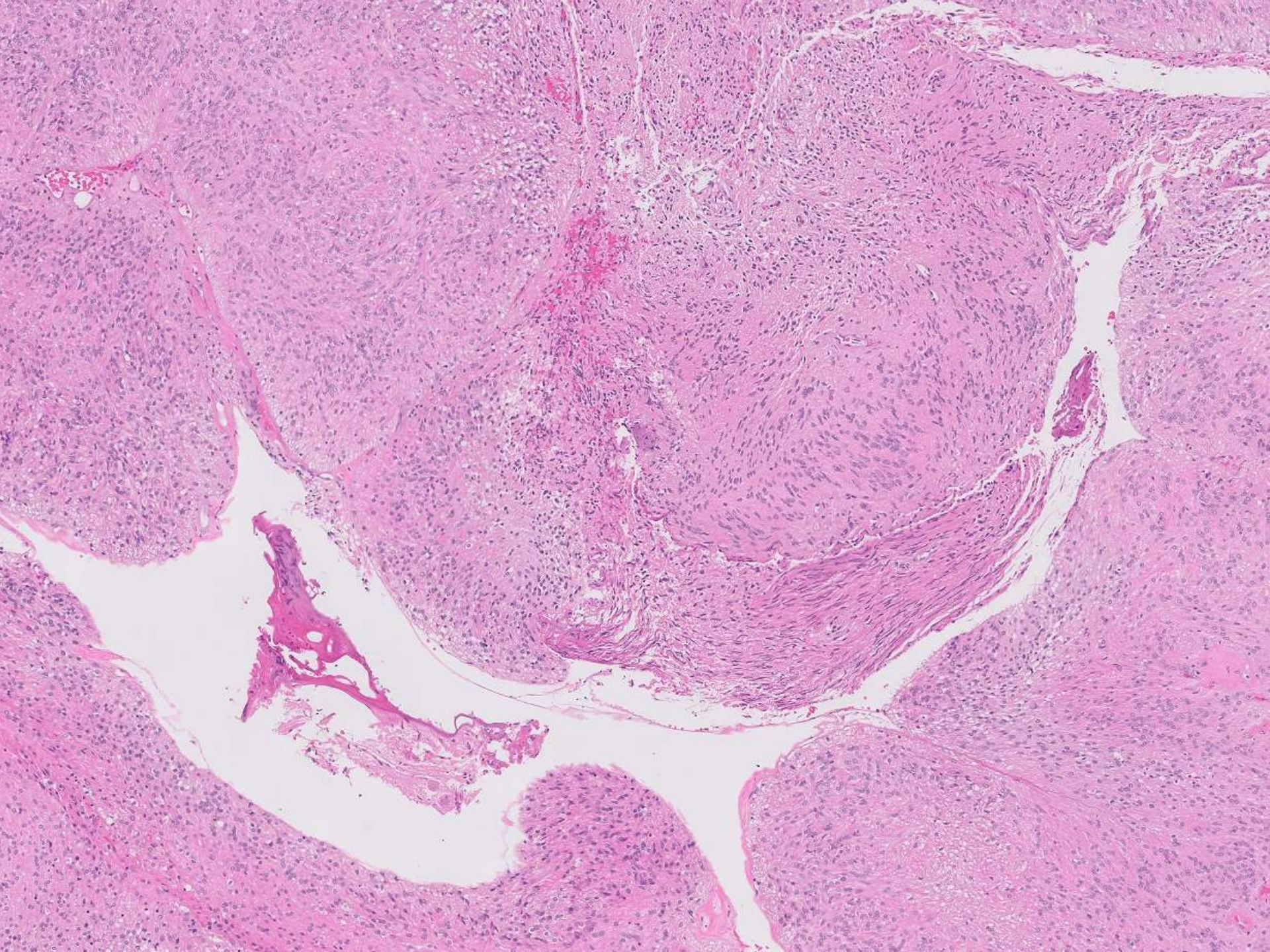
- Imaging revealed a heterogeneously T2 hyperintense/isointense and enhancing lesion centered within the right cerebellomedullary angle with extension through the pars nervosa of the jugular foramen.

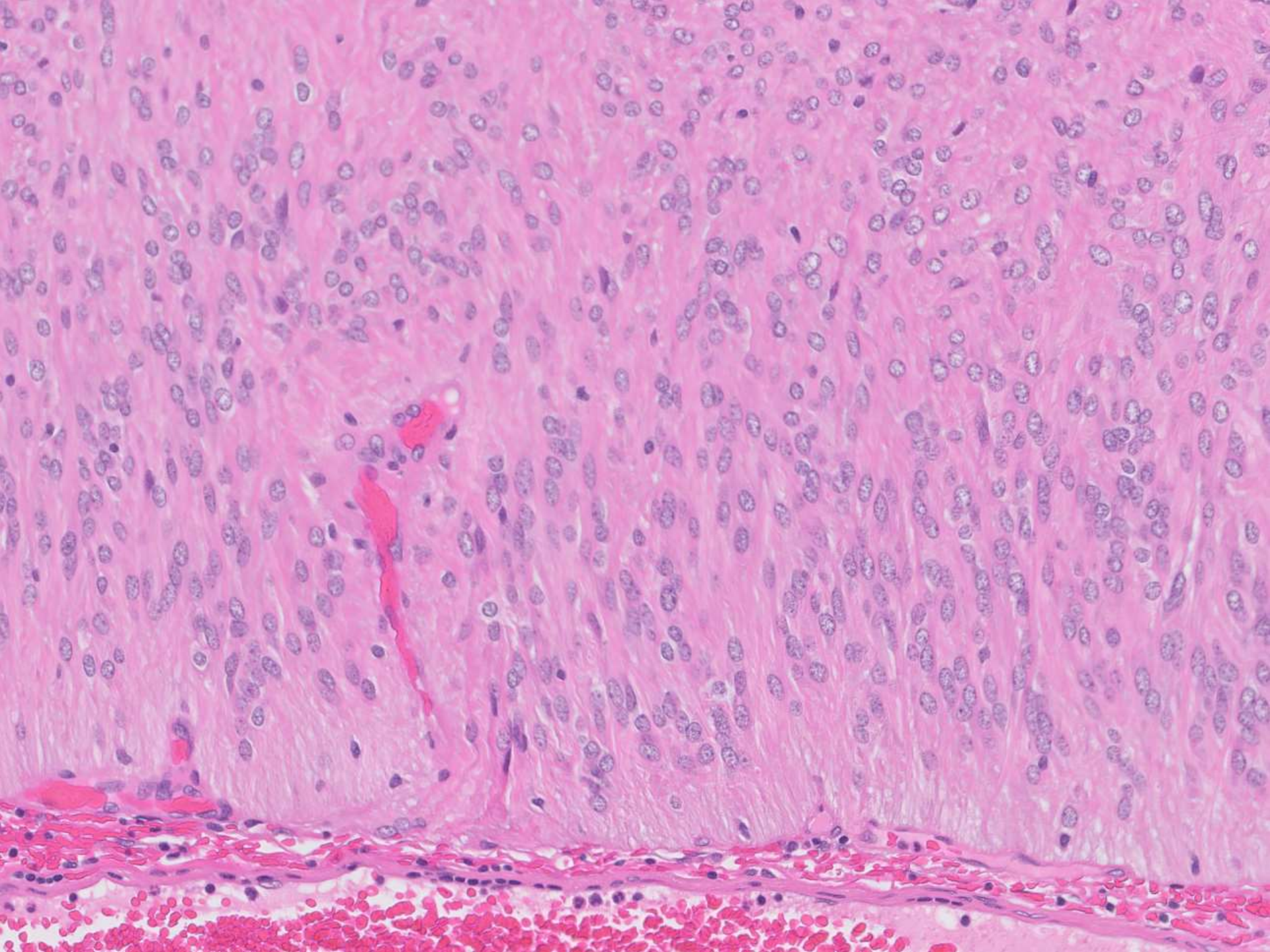


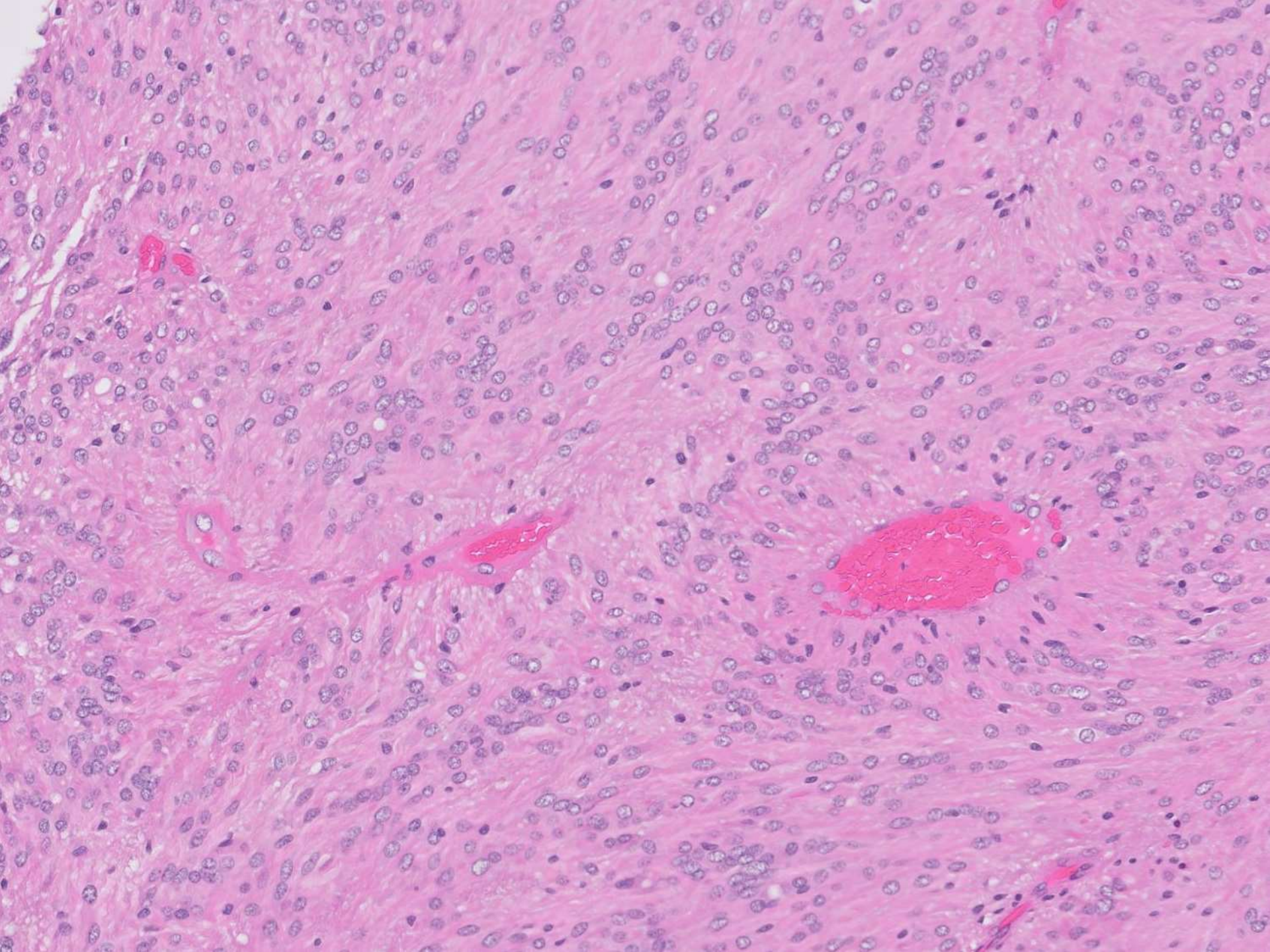


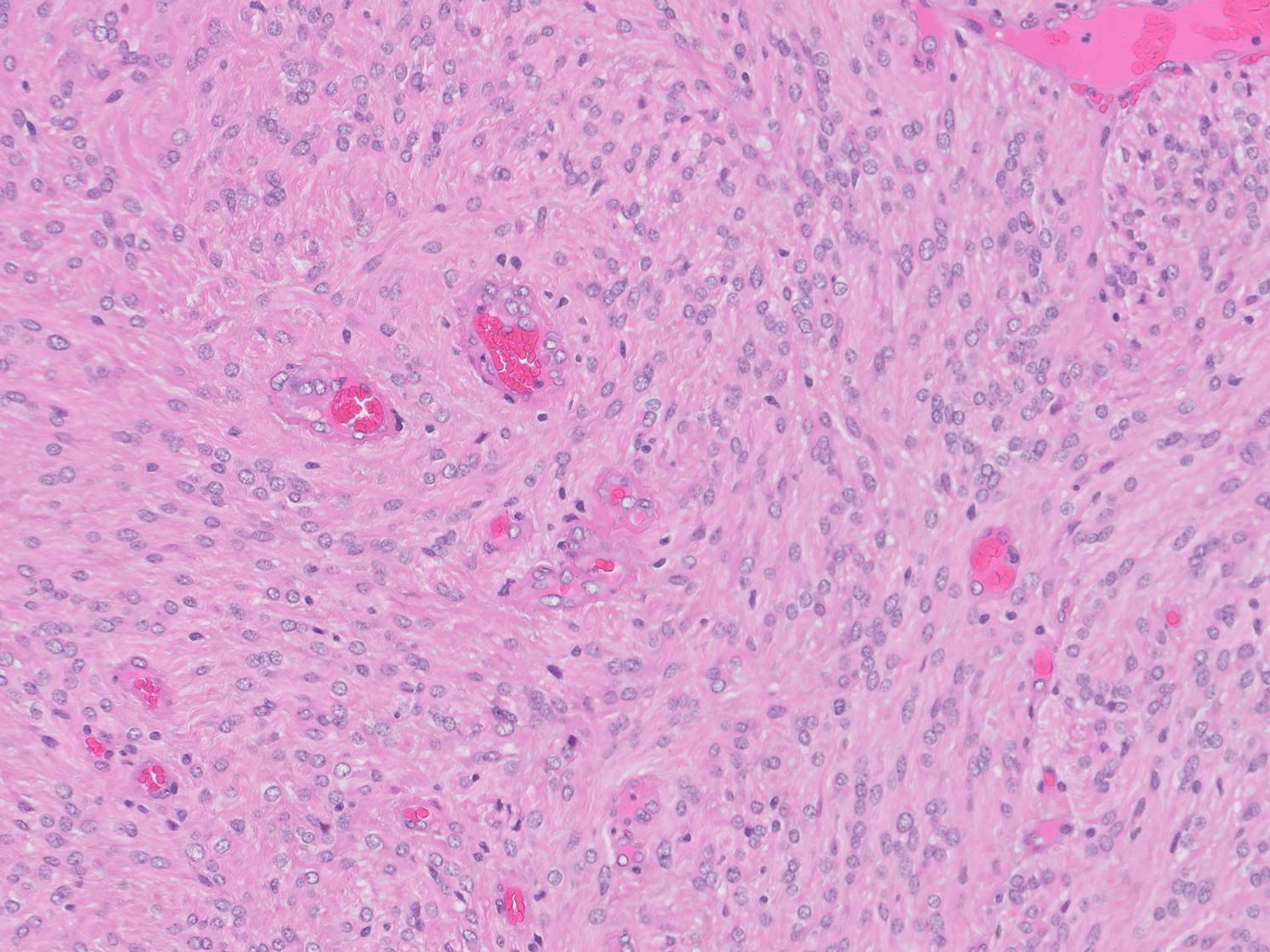


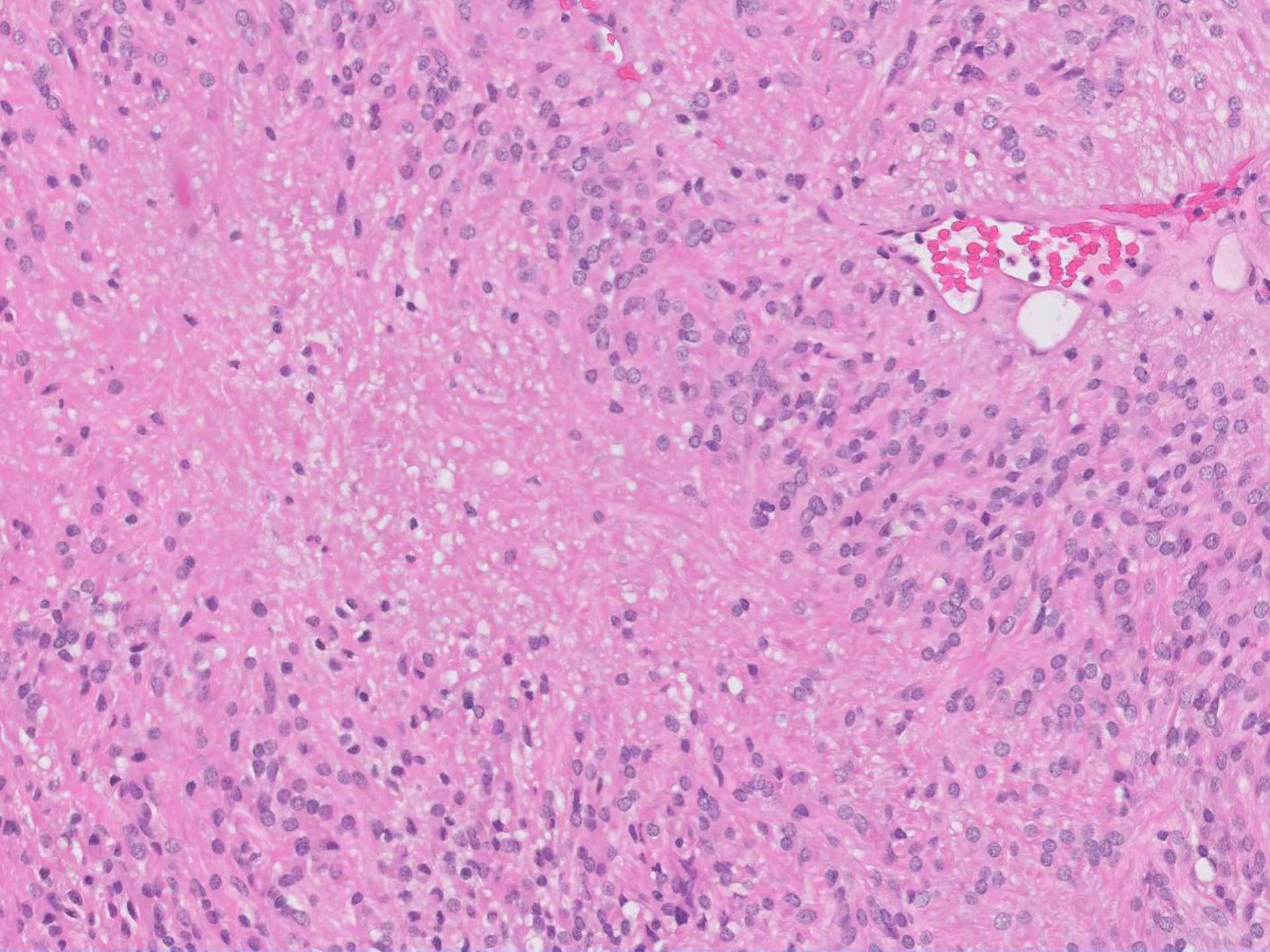


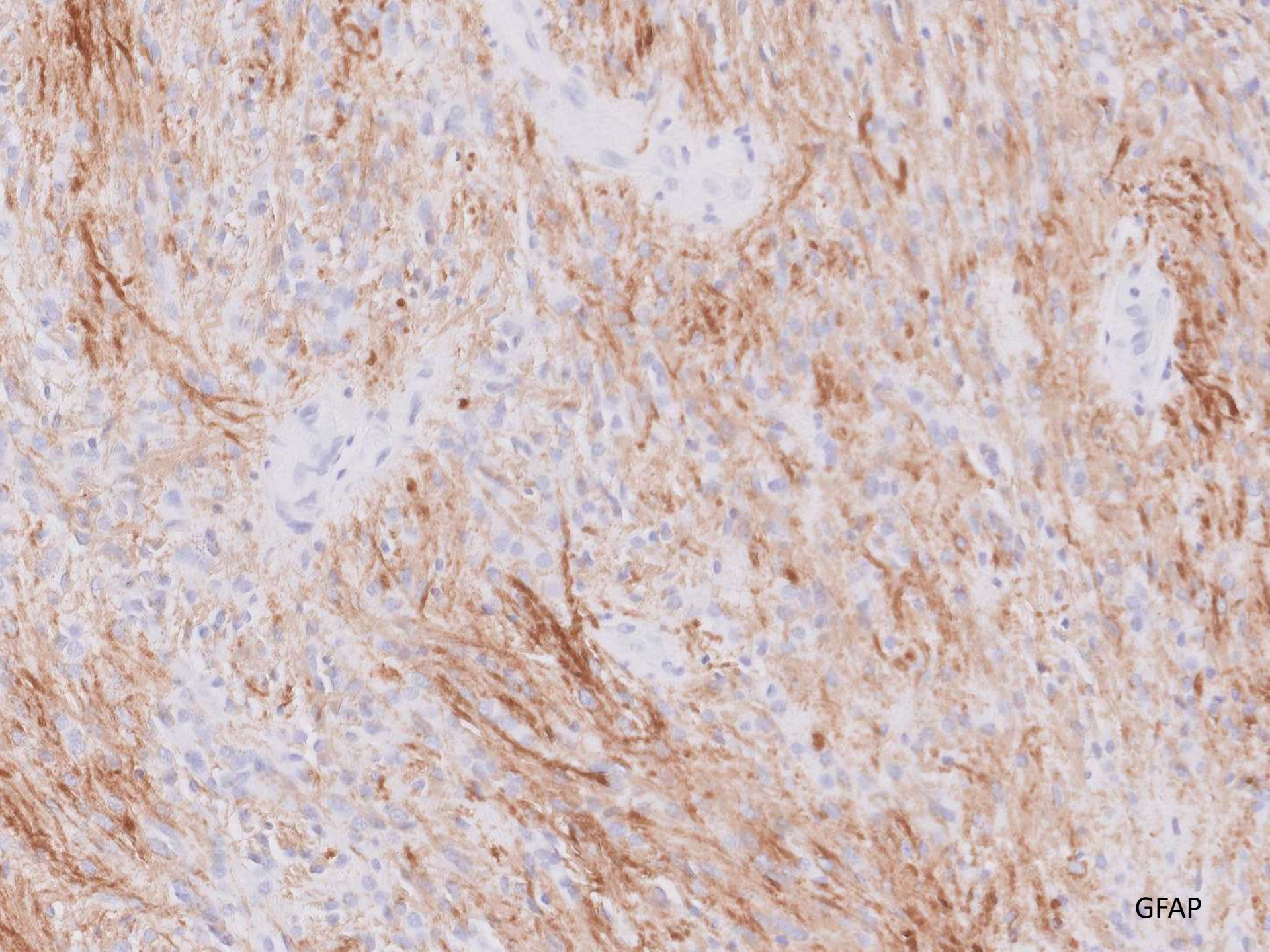


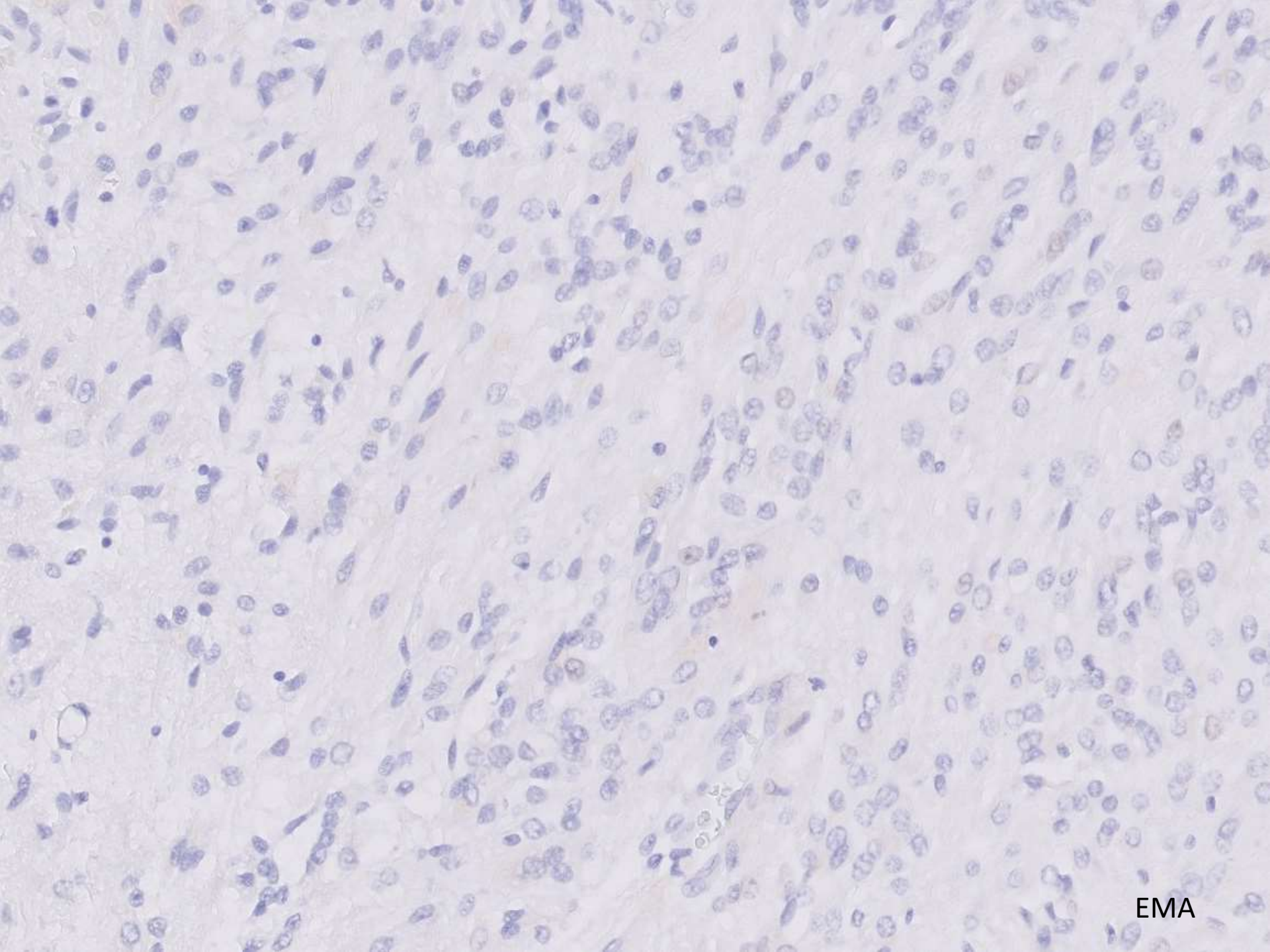









GFAP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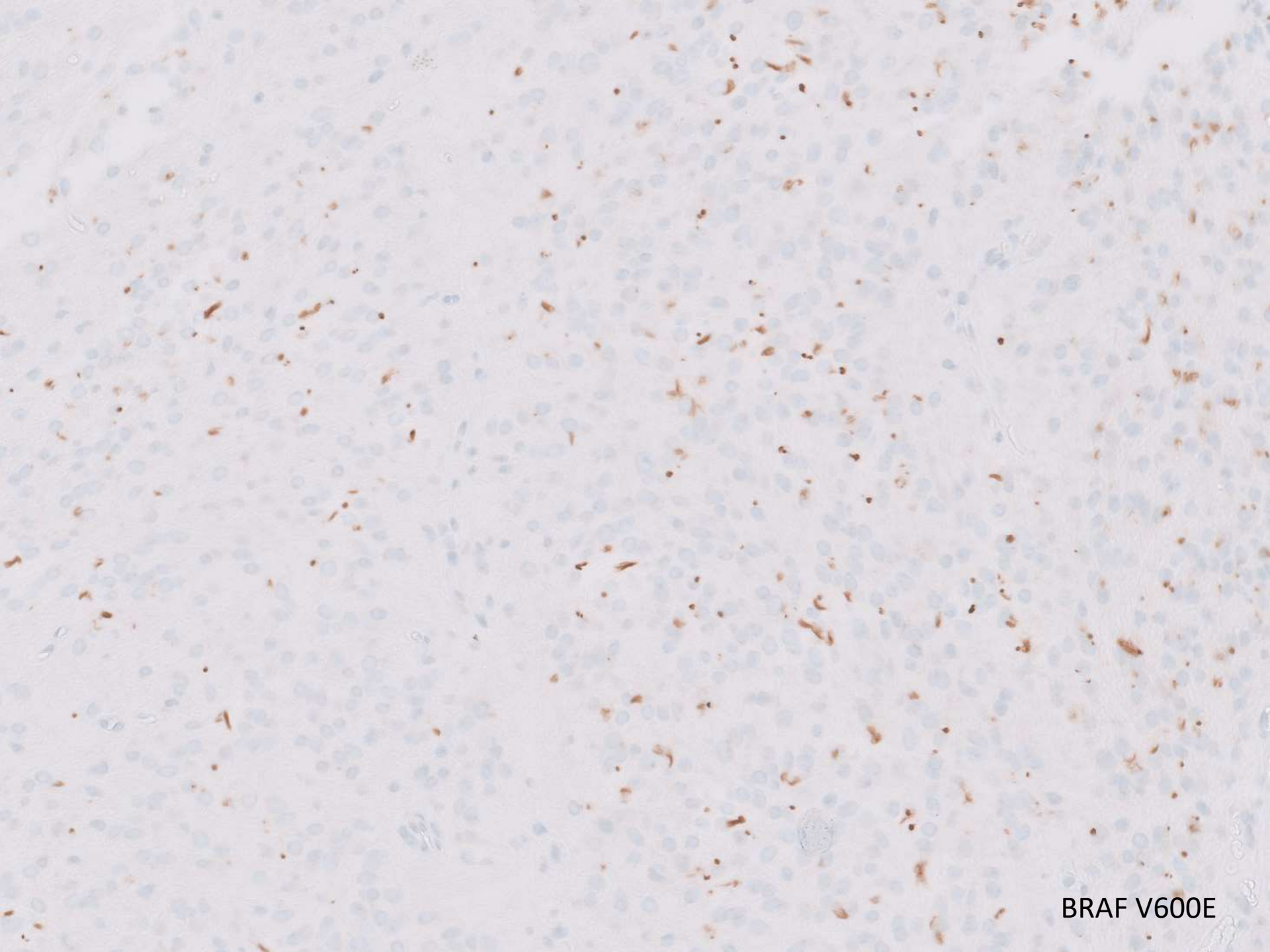

BRAF V600E

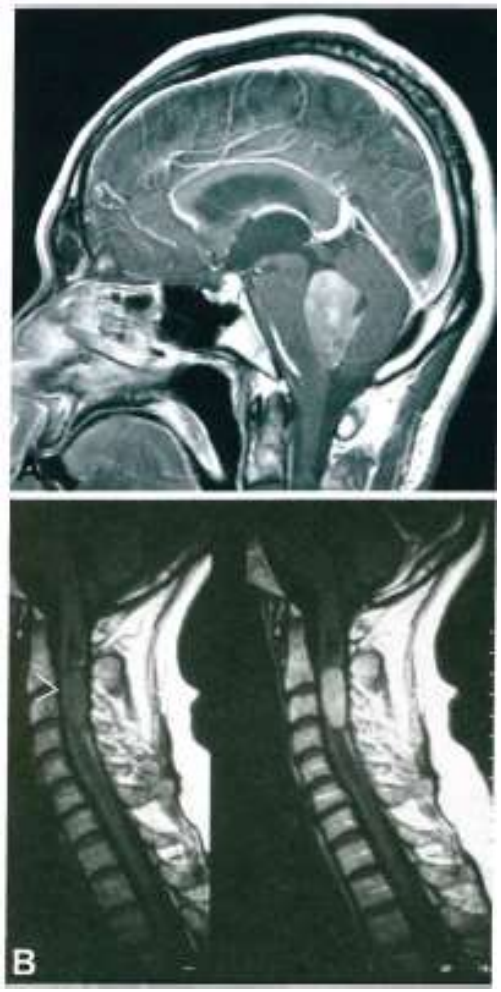
DIAGNOSIS?

Diagnosis

- **BRAIN, RIGHT CEREBELLAR MEDULLARY TUMOR, RESECTION**
  - **TANYCYTIC EPENDYMOMA, WHO GRADE II**

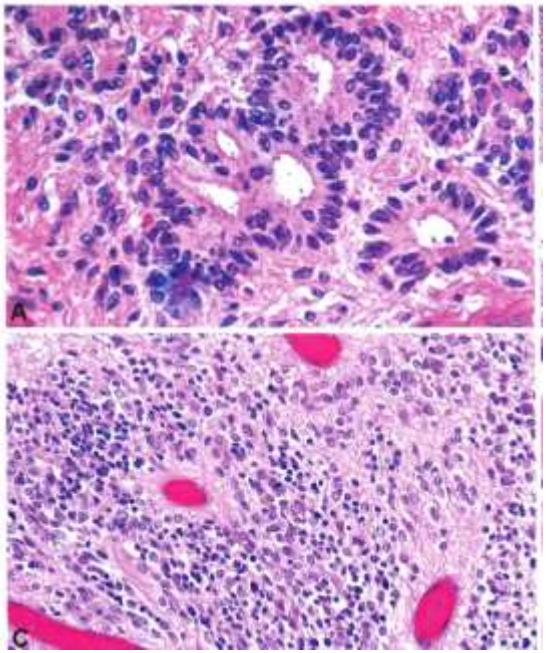
Ependymoma

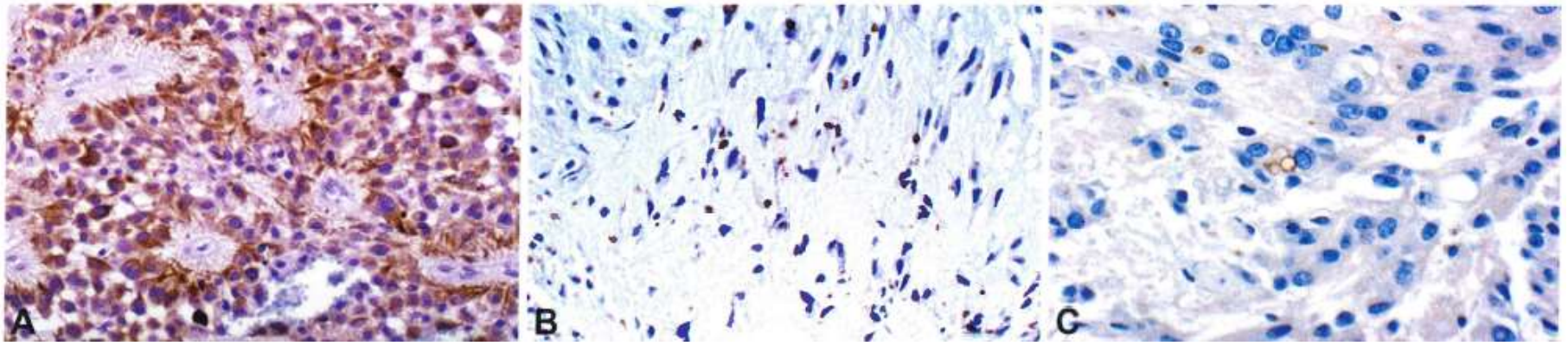
- 6.8% of neuroepithelial neoplasms
- 60% posterior fossa, 30% supratentorial, 10% spinal cord
- Posterior fossa are often pediatric, spinal often young adults (30-40s) and supratentorial affect both pediatric and adult patients
- Well circumscribed on imaging with various degree of enhancement, often secondary ventricular obstruction, +/- cystic, +/- calcifications, CSF spread



Ependymoma

- Derived from ependymal cells (cilia and microvilli on EM)
- Circumscribed glioma with uniform small cells characterized by perivascular anucleate zones (perivascular pseudo-rosettes), +/- ependymal rosettes with a central canal
- WHO grade II or grade III (increased mitoses, microvascular proliferation)
- GFAP positive, S100 positive, EMA in most cases dots and rings

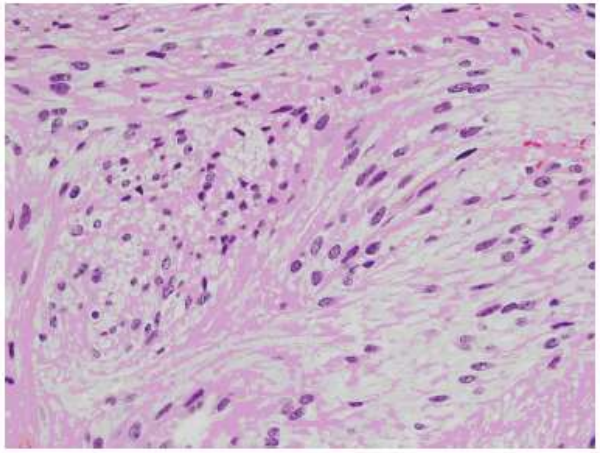


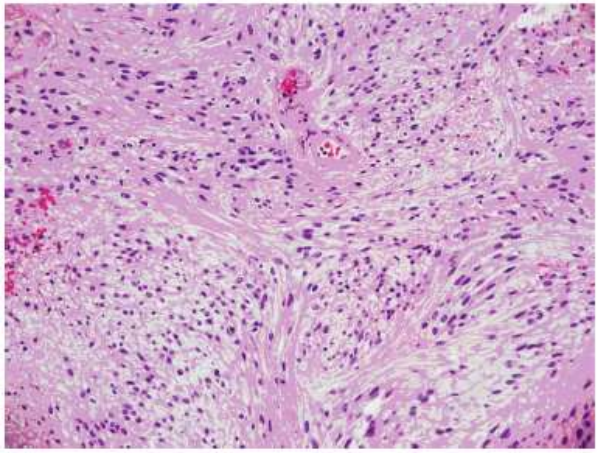


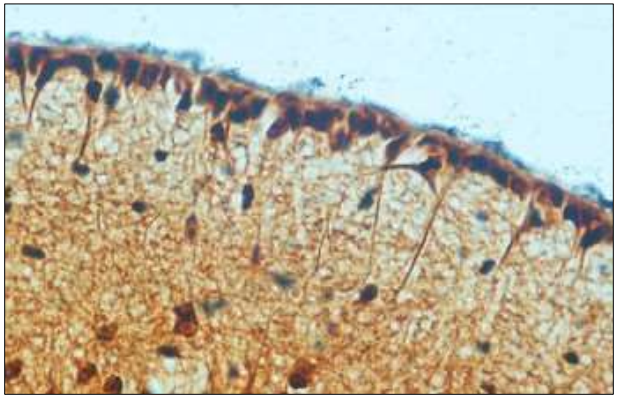
The 2016 World Health Organization Classification of Tumors of the Central Nervous System. Louis DN et al. 2016

Ependymoma variants

- Histologic variants
  - Papillary, tanycytic and clear cell
  - No definite prognostic implication
- Tanycytic variant are characterized by fascicles of spindle cells, often spinal, can be associated with NF2, rosettes and pseudo-rosettes can be absent
    - Similar to tanycytes: paraventricular ependymal cells with elongated cytoplasmic processes
  - Ddx: schwannoma, pilocytic astrocytoma



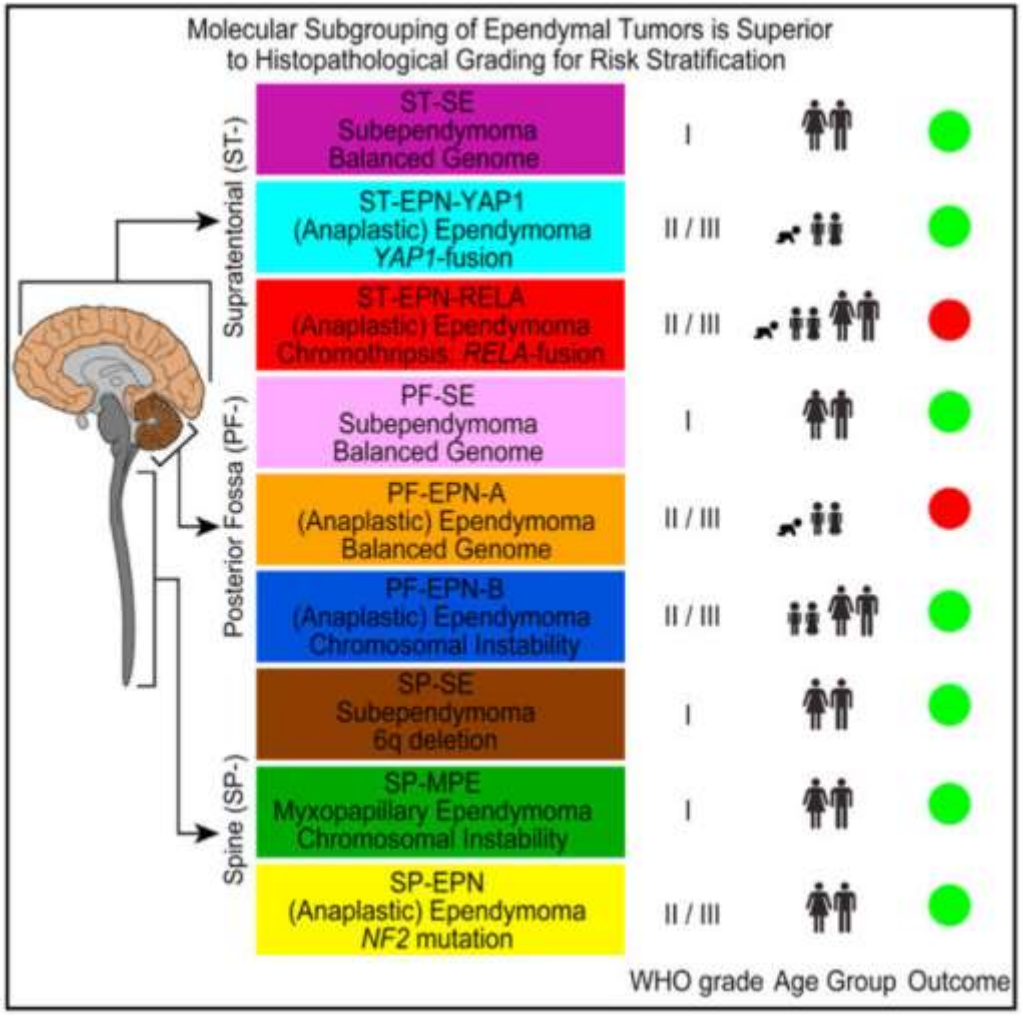




Tanycytic ependymoma: a challenging histological diagnosis. Krisht KM, Schmidt MH. Case Rep Neurol Med. 2013;2013:170791

Ependymoma variants

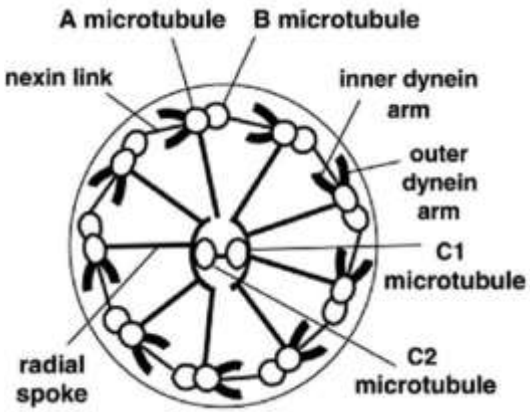
- Molecular subtypes
  - 9 different ependymoma subgroups
  - Prognostic implication (age, location, molecular subgroup and *grade*)
  - Immunohistochemical and FISH studies can be used to subtype ependymomas

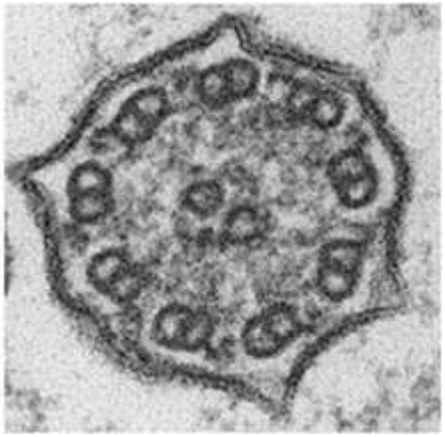


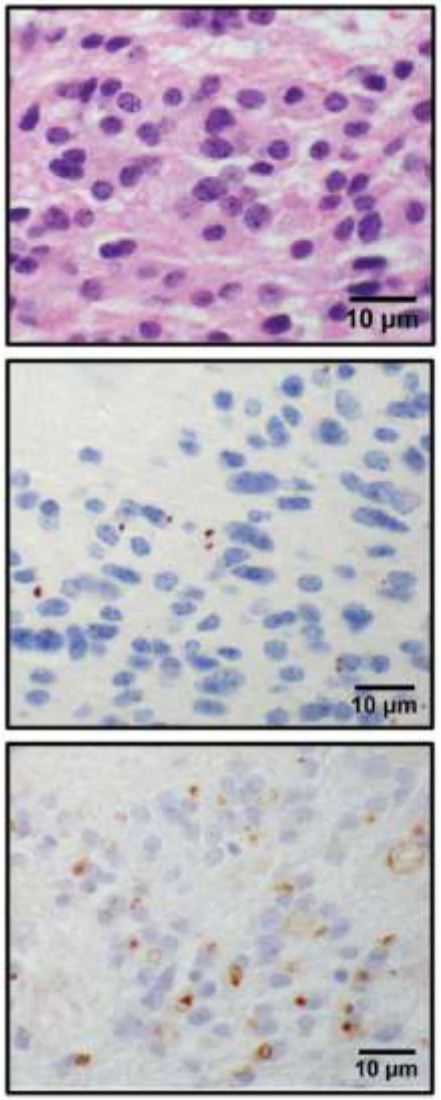
Molecular Classification of Ependymal Tumors across All CNS Compartments, Histopathological Grades, and Age Groups. Pajtler KW, et al. Cancer Cell. 2015 May 11;27(5):728-43

BRAF V600E VE1 clone

- The BRAF V600E clone VE1 can cross react with axonemal dynein heavy chain proteins
  - Dynein cytoskeletal are motor protein that move along microtubules in cells
  - Axonemal dynein are associated with cilia and flagella
  - 10/19 ependymomas show positive BRAF V600E axonemal staining





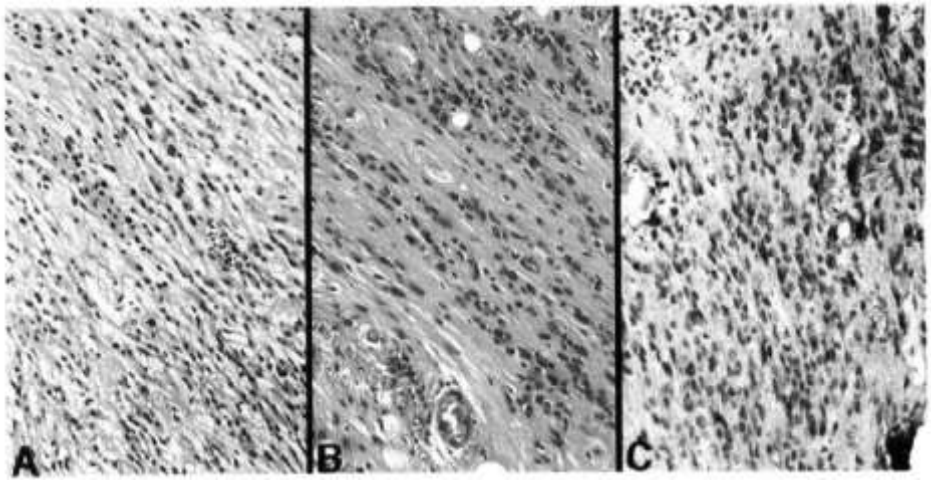


Jones R et al. Mod Pathol. 2015 Apr;28(4):596-606

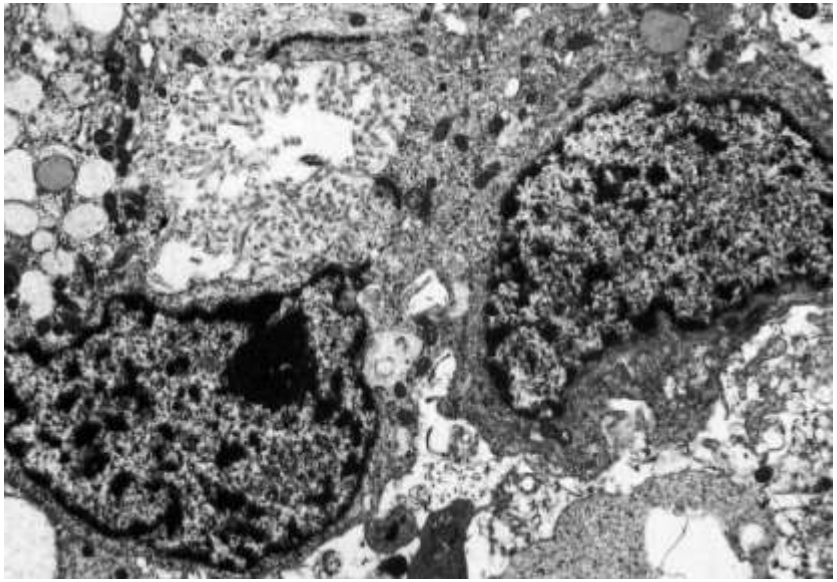
Conclusions

- Tanycytic ependymoma is a histologic variant of ependymomas characterized by spindle cells in fascicles with rare or no rosettes/pseudo-rosettes
  - No prognostic implication
  - Age, location, molecular subtype, *grade*
  - Ddx with astrocytoma and schwannoma

- BRAF V600E clone VE1 cross-reacts with axonemal dynein in cilia
  - Can stain ependymomas in a punctate/dot like pattern



Tanycytic ependymoma. Langford LA, Barré GM. Ultrastruct Pathol. 1997 21(2):135-42.



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- Cross-reactivity of the BRAF VE1 antibody with epitopes in axonemal dyneins leads to staining of cilia. Jones RT, Abedalthagafi MS, Brahmandam M, Greenfield EA, Hoang MP, Louis DN, Hornick JL, Santagata S. Mod Pathol. 2015 Apr;28(4):596-606

- Molecular Classification of Ependymal Tumors across All CNS Compartments, Histopathological Grades, and Age Groups. Pajtler KW, Witt H, Sill M, Jones DT, Hovestadt V, Kratochwil F, Wani K, Tatevossian R, Punchihewa C, Johann P, Reimand J, Warnatz HJ, Ryzhova M, Mack S, Ramaswamy V, Capper D, Schweizer L, Sieber L, Wittmann A, Huang Z, van Sluis P, Volckmann R, Koster J, Versteeg R, Fults D, Toledano H, Avigad S, Hoffman LM, Donson AM, Foreman N, Hewer E, Zitterbart K, Gilbert M, Armstrong TS, Gupta N, Allen JC, Karajannis MA, Zagzag D, Hasselblatt M, Kulozik AE, Witt O, Collins VP, von Hoff K, Rutkowski S, Pietsch T, Bader G, Yaspo ML, von Deimling A, Lichter P, Taylor MD, Gilbertson R, Ellison DW, Aldape K, Korshunov A, Kool M, Pfister SM. Cancer Cell. 2015 May 11;27(5):728-43

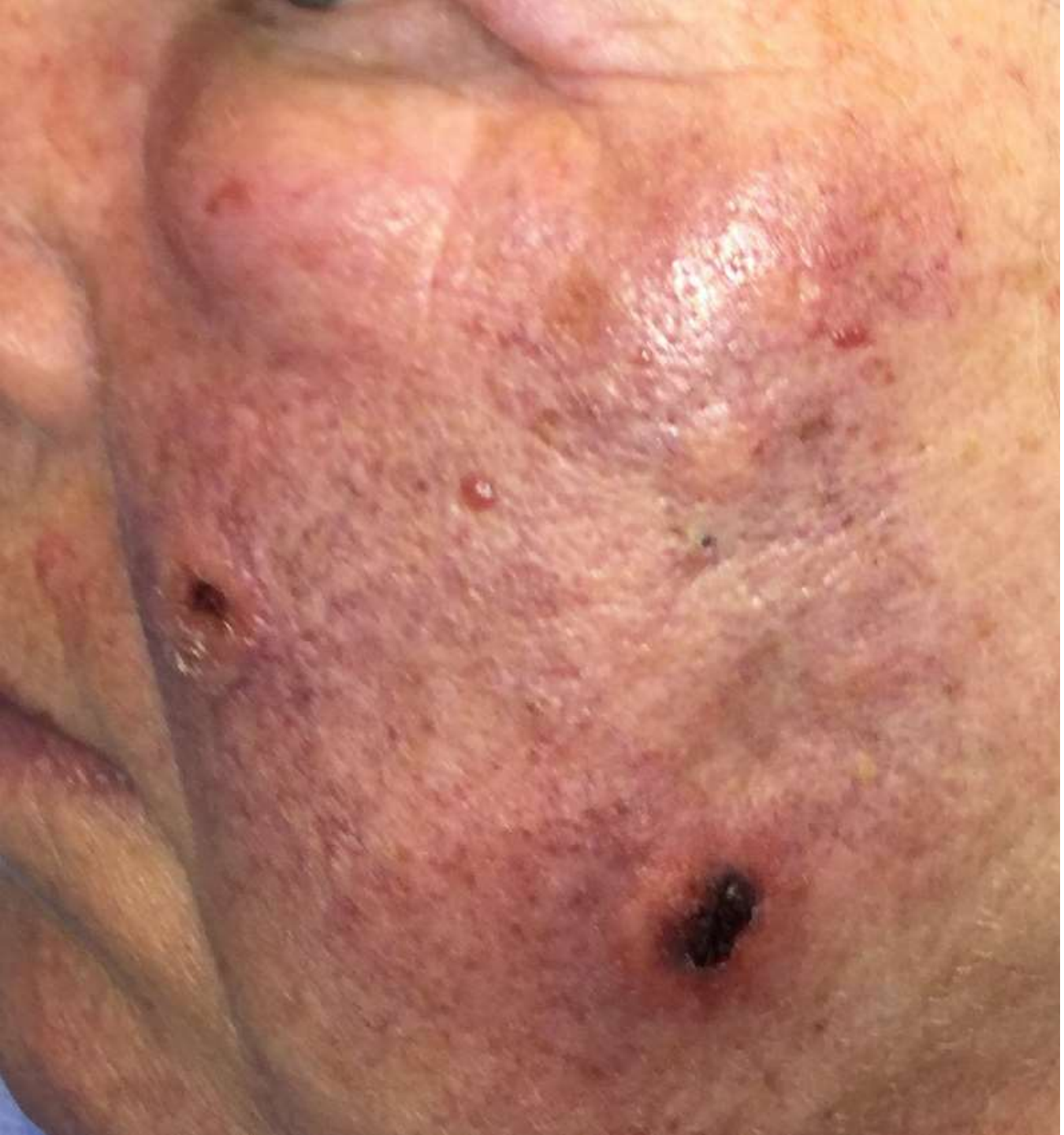
- Tanycytic ependymoma: a challenging histological diagnosis. Krisht KM, Schmidt MH.Case Rep Neurol Med. 2013;2013:170791

- Tanycytic ependymoma. Langford LA, Barré GM. Ultrastruct Pathol. 1997 Mar-Apr;21(2):135-42.

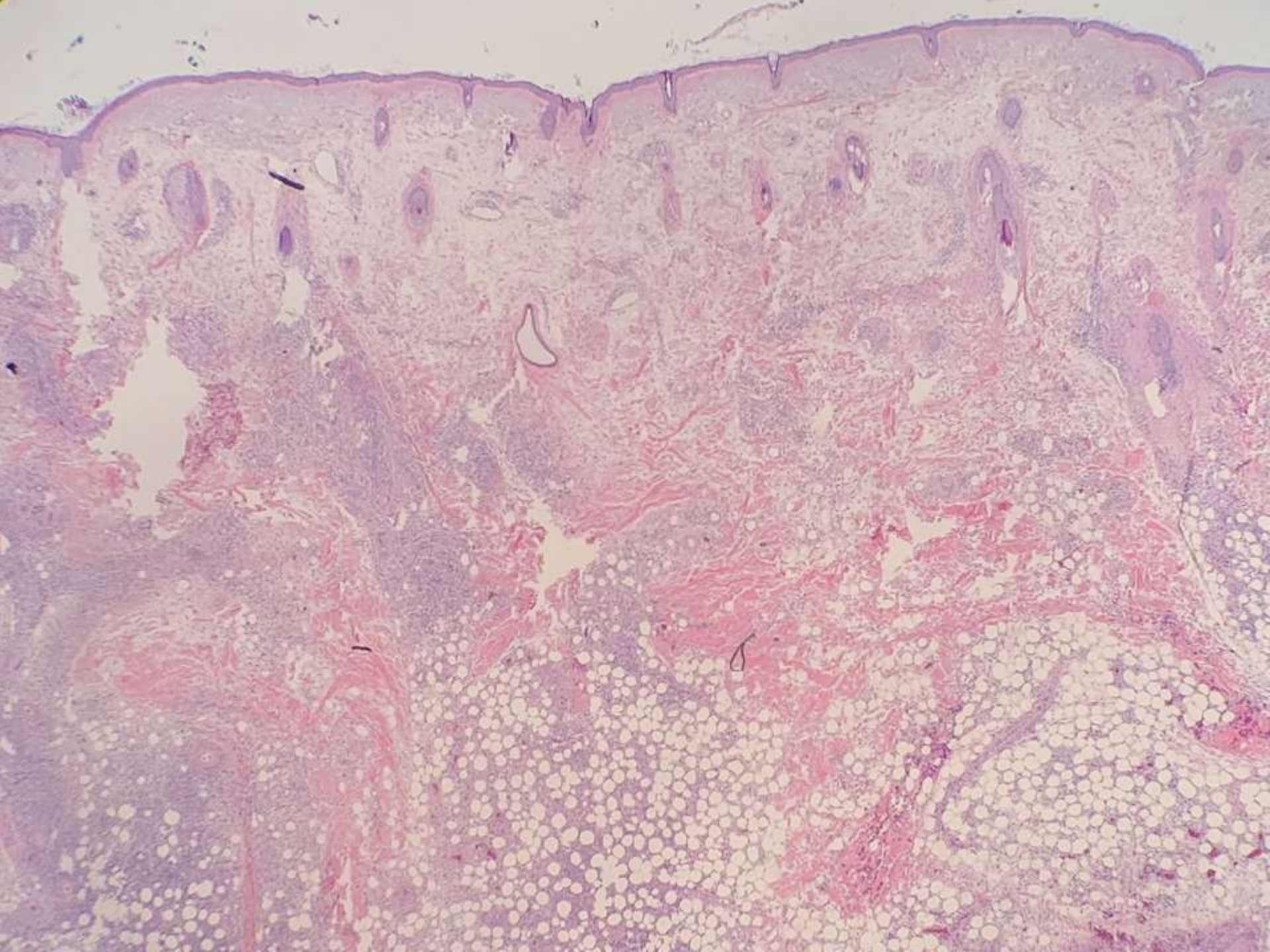
20-0309

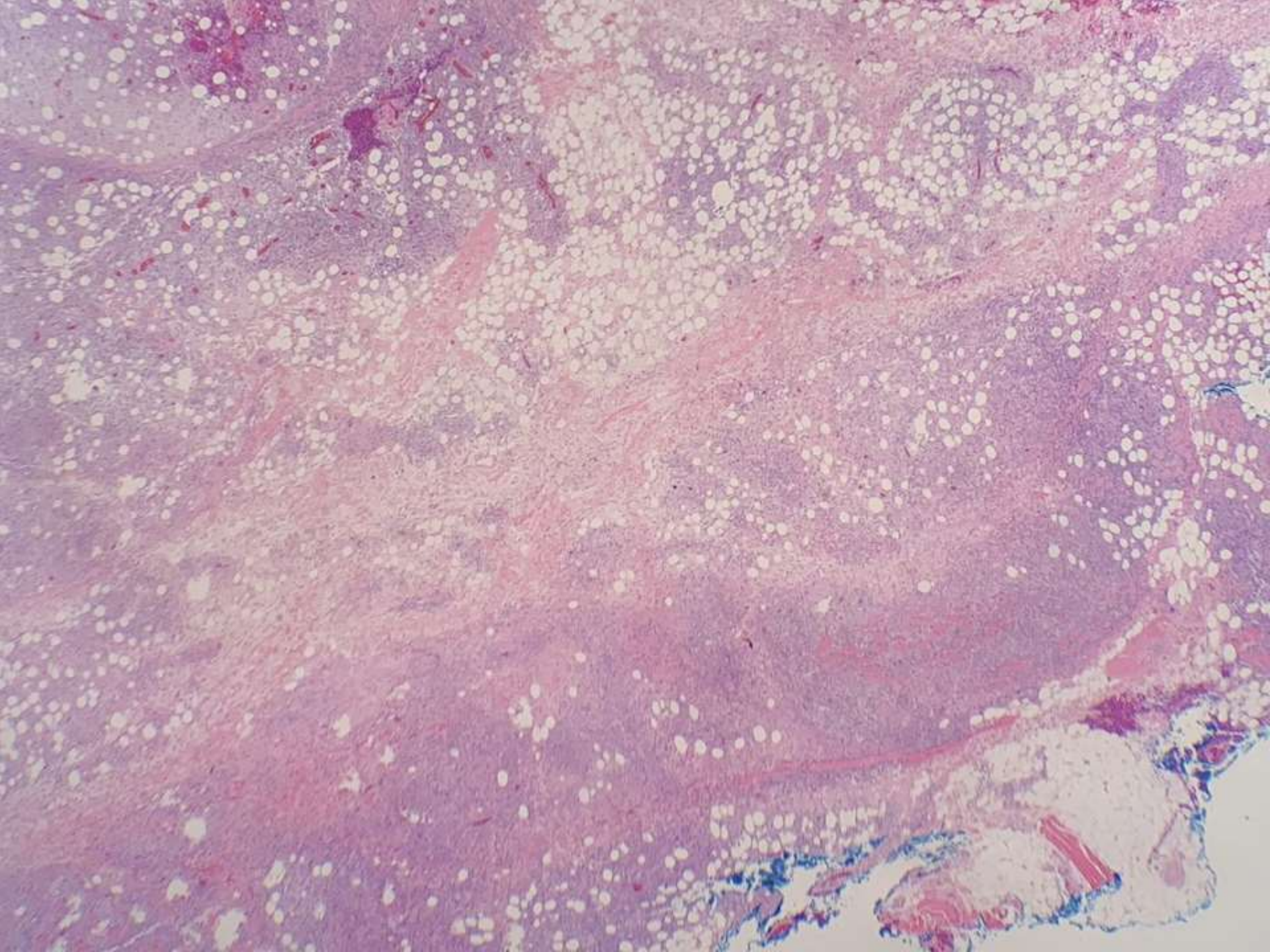
Matt Koo/Ryanne Brown; Stanford

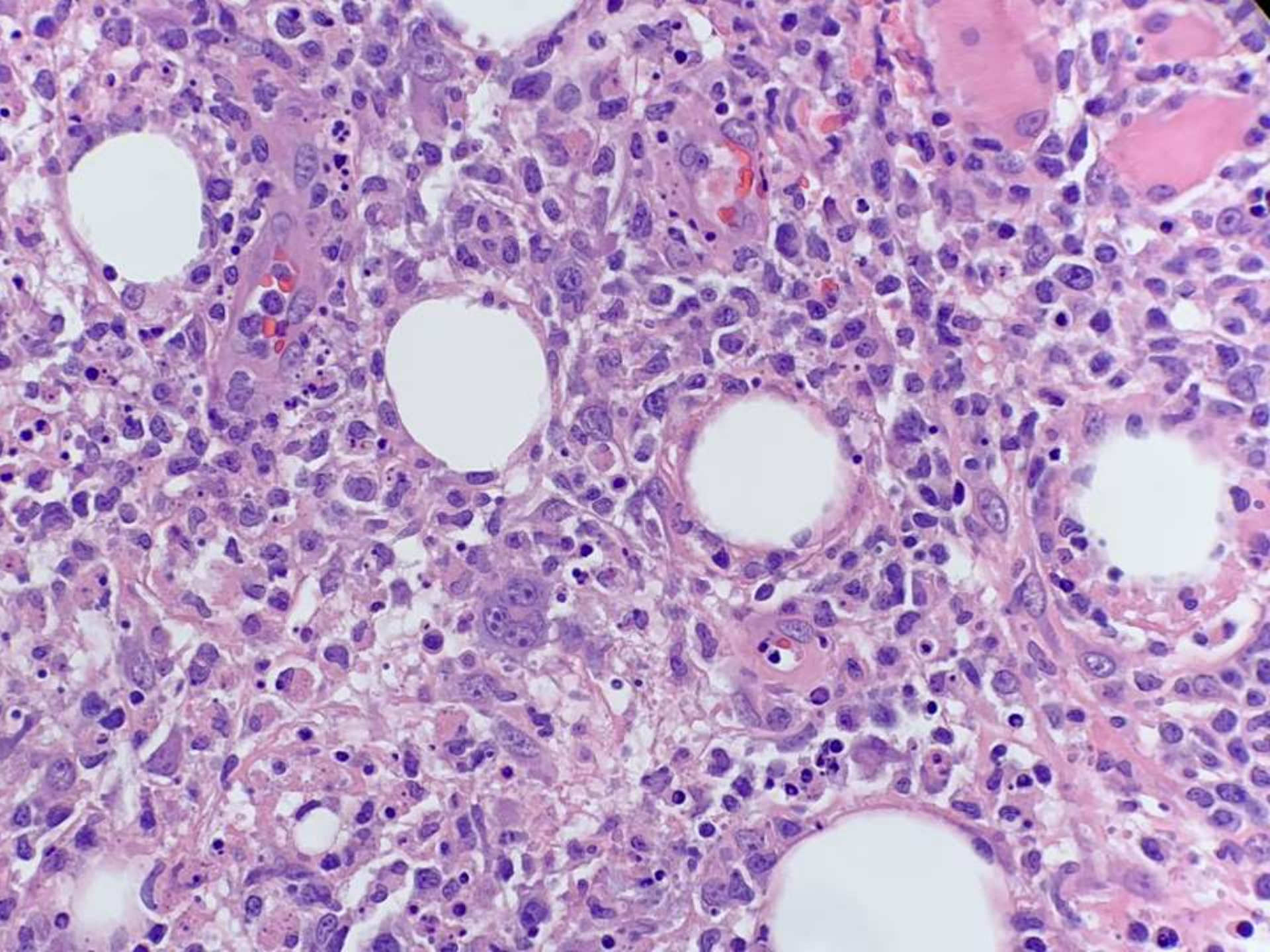
64-year-old F with a progressive growth on her left face.

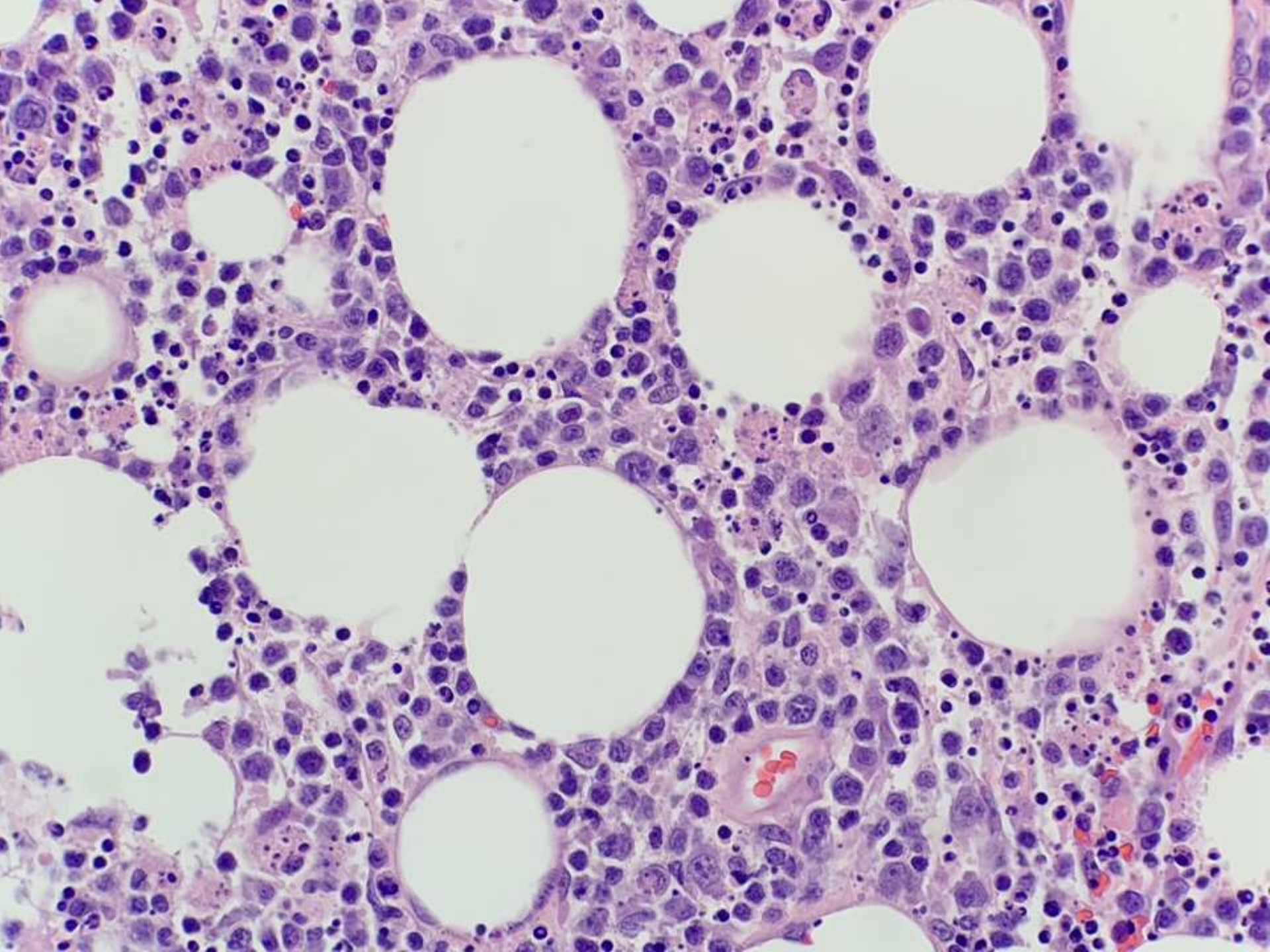


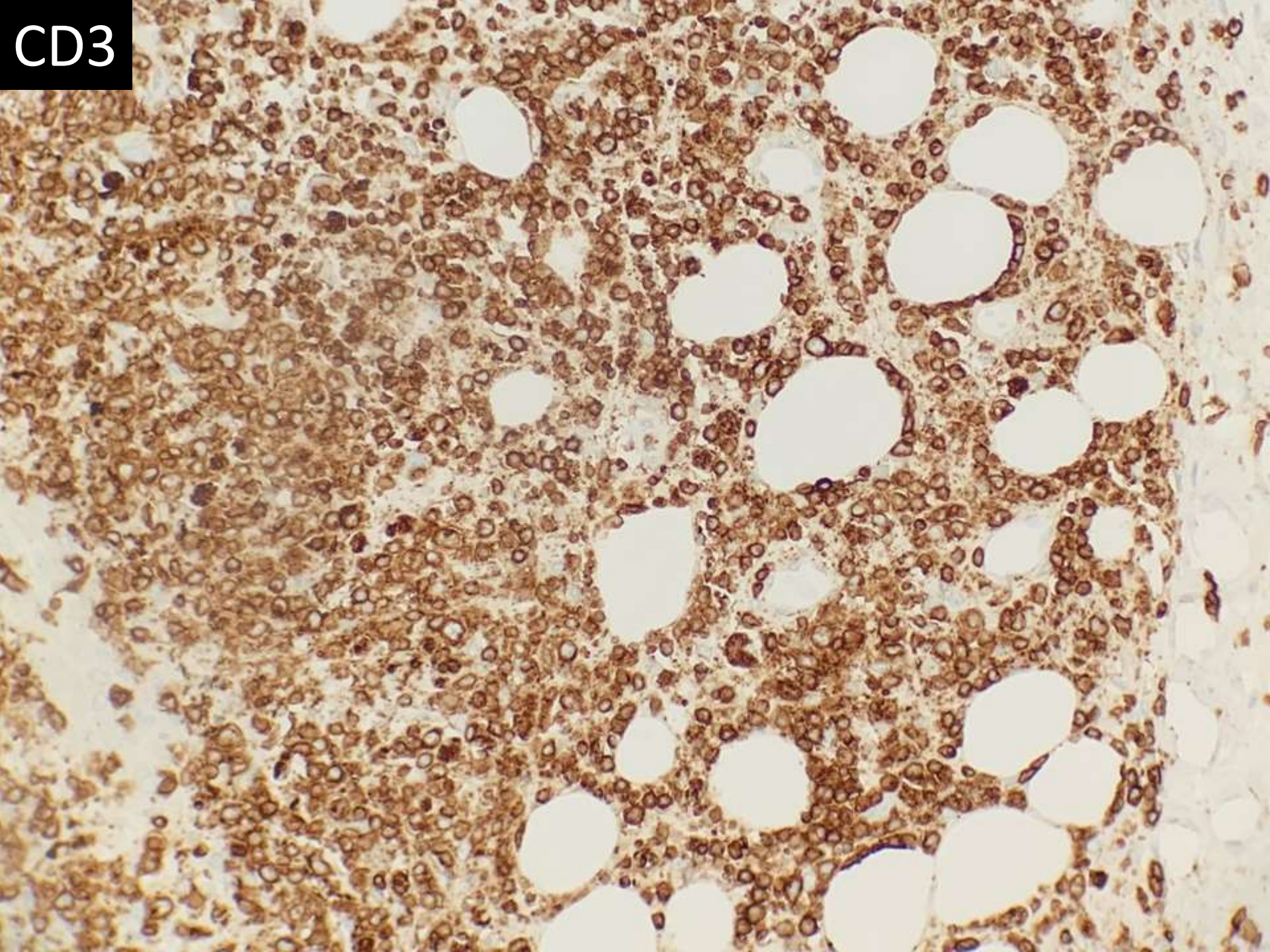
Physical exam: “facial asymmetry with the left hemiface with mottled erythema and woody, indurated plaques with few ulcerated and eroded papulonodules”

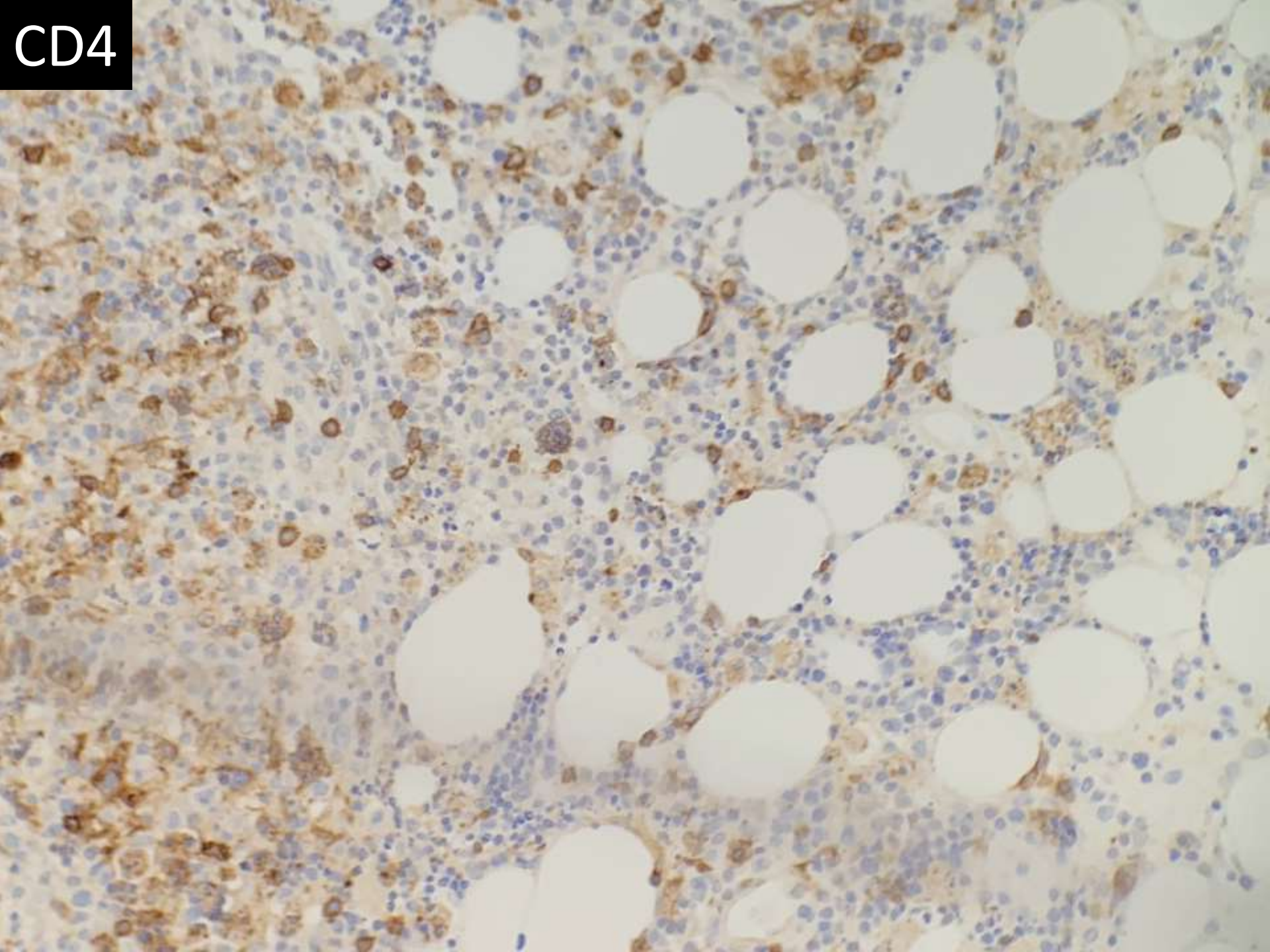









CD3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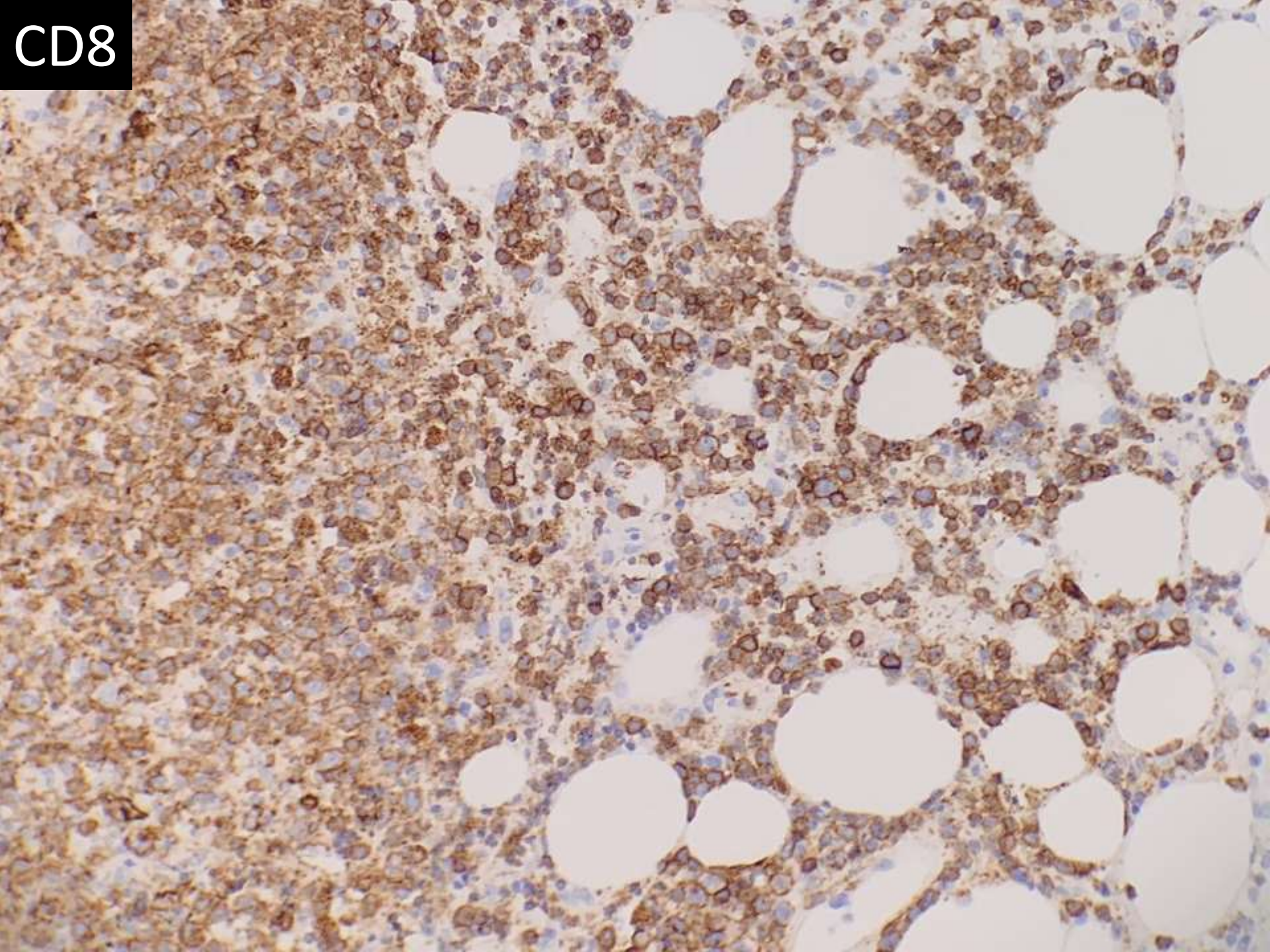
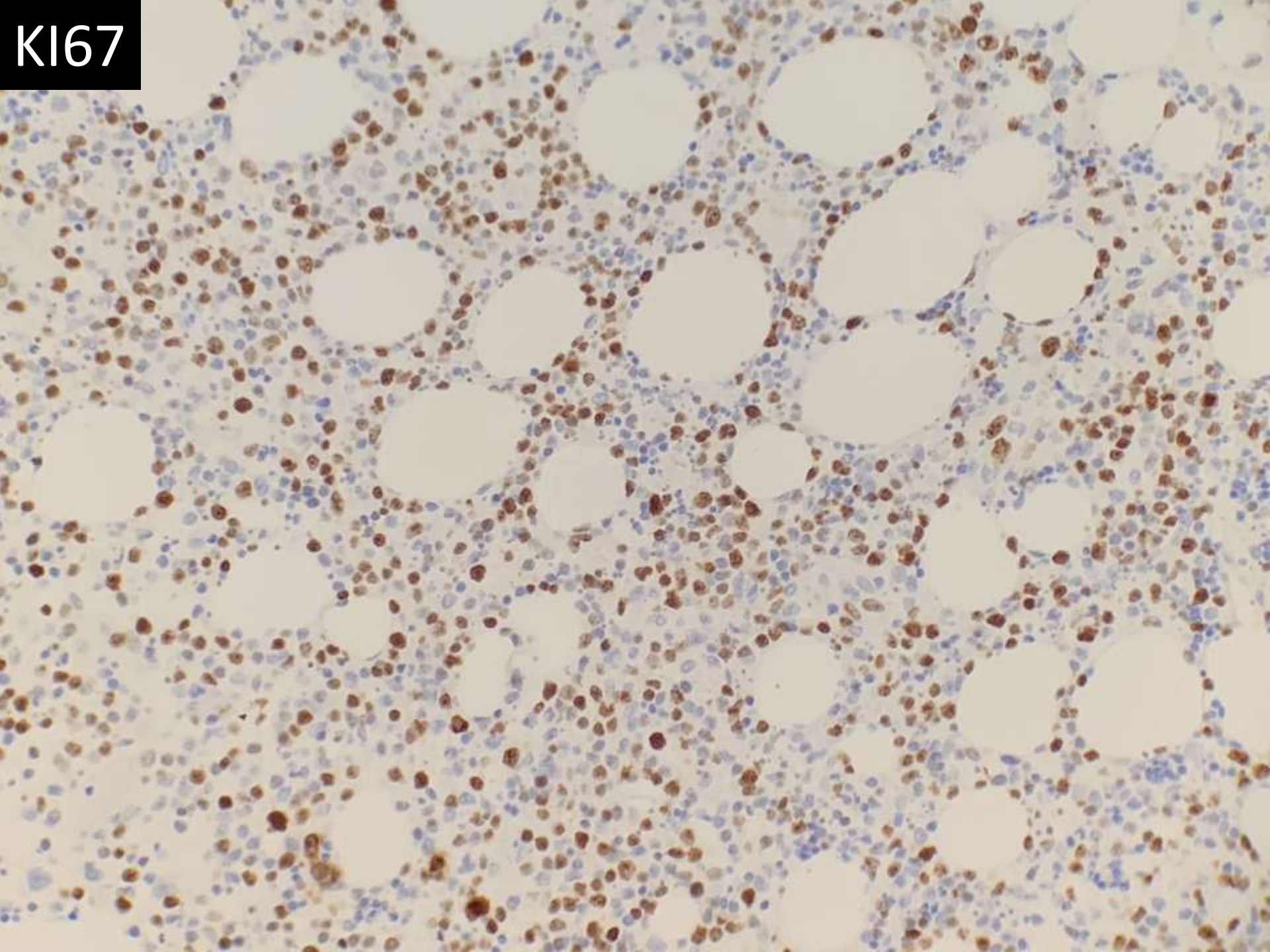
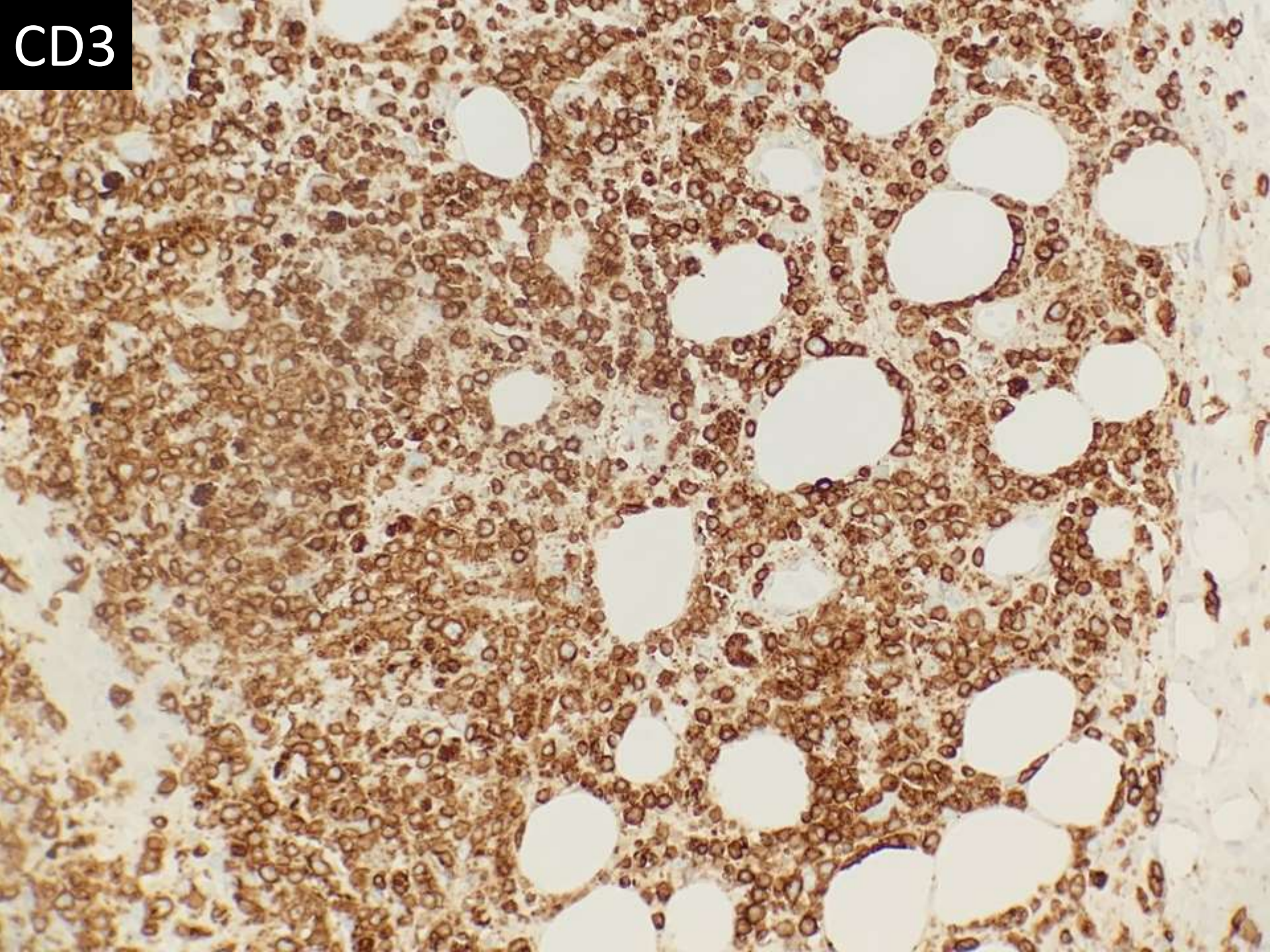
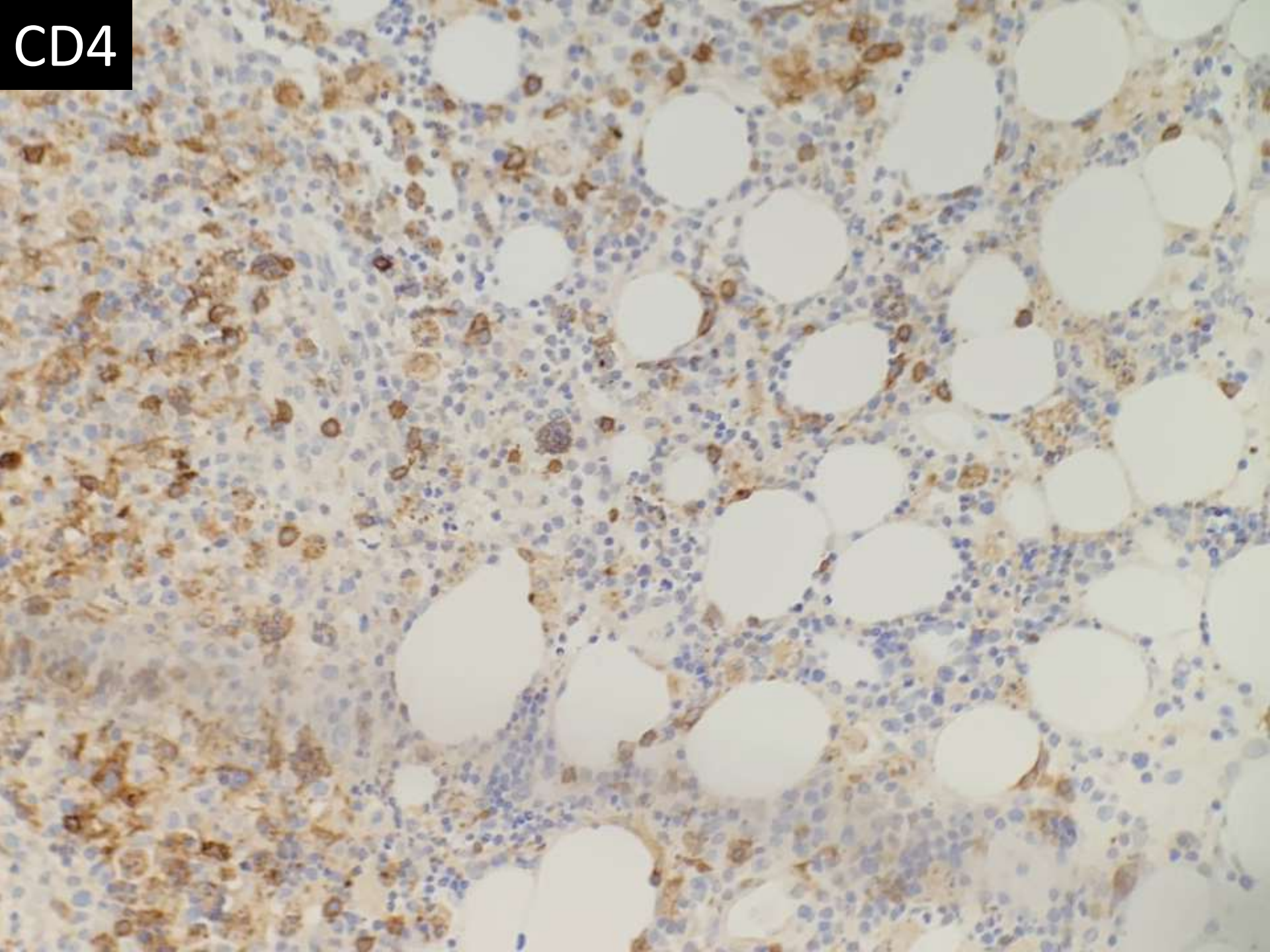
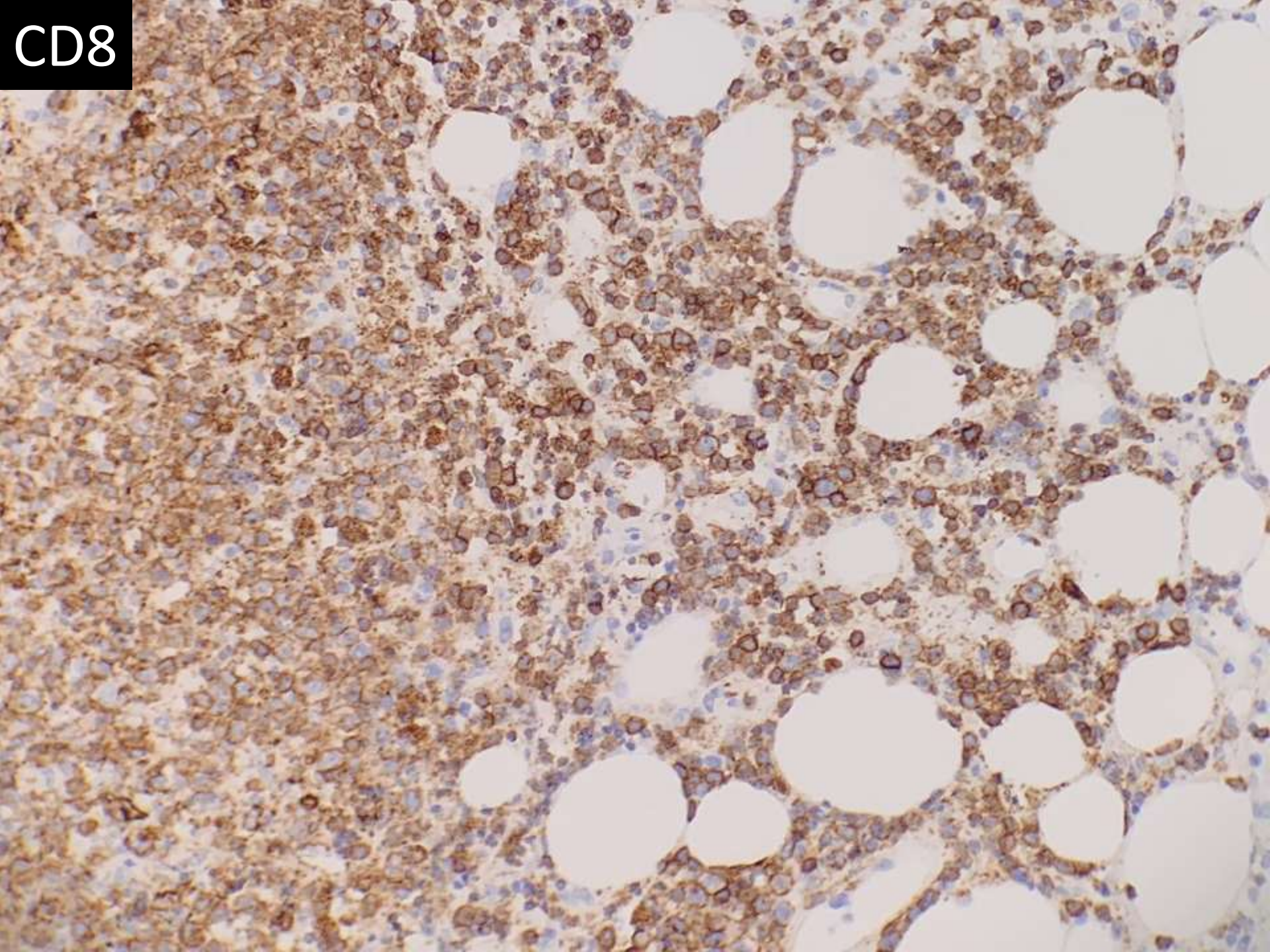

CD8


KI67

DIAGNOSIS?


CD3


CD4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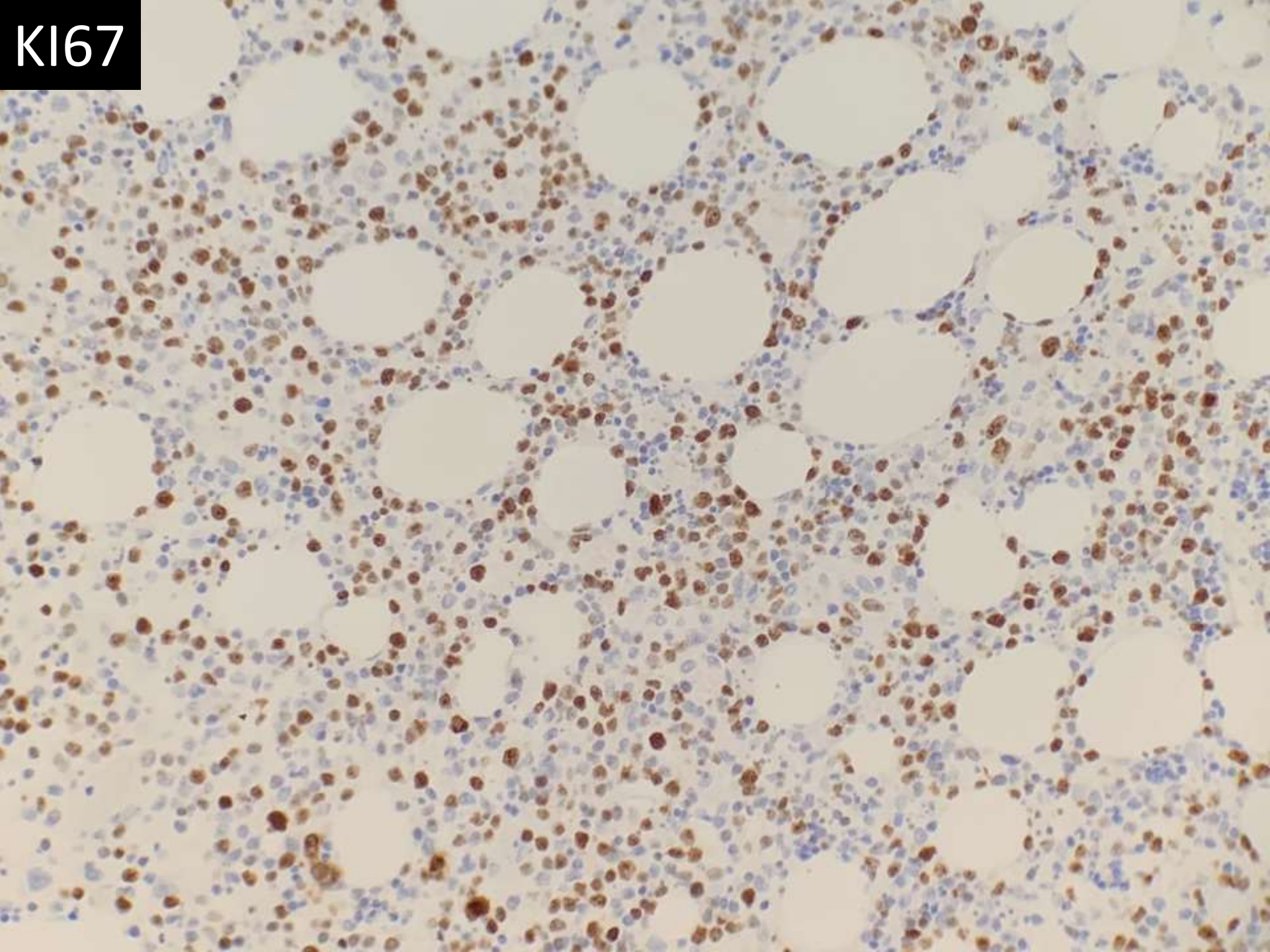
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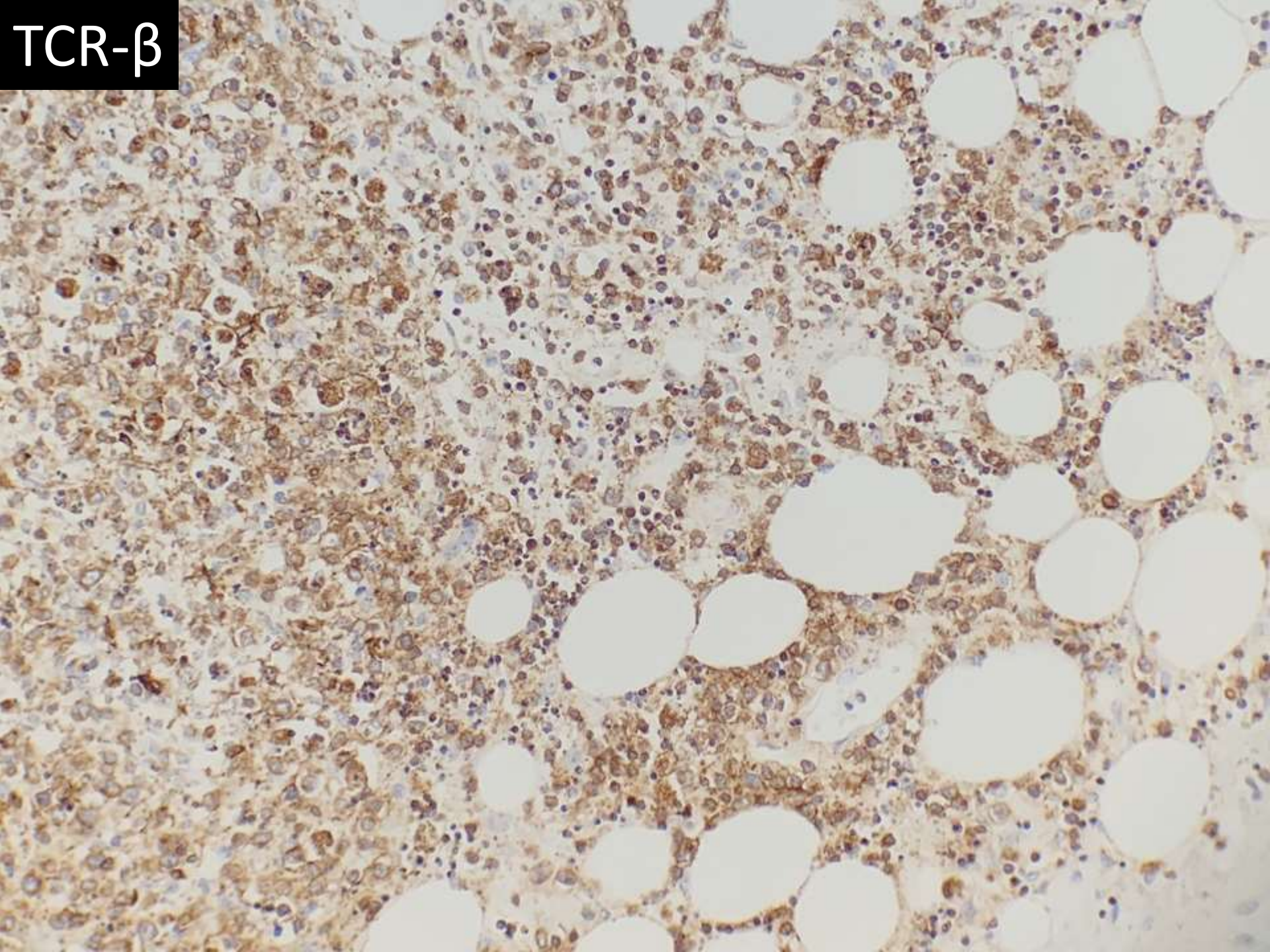
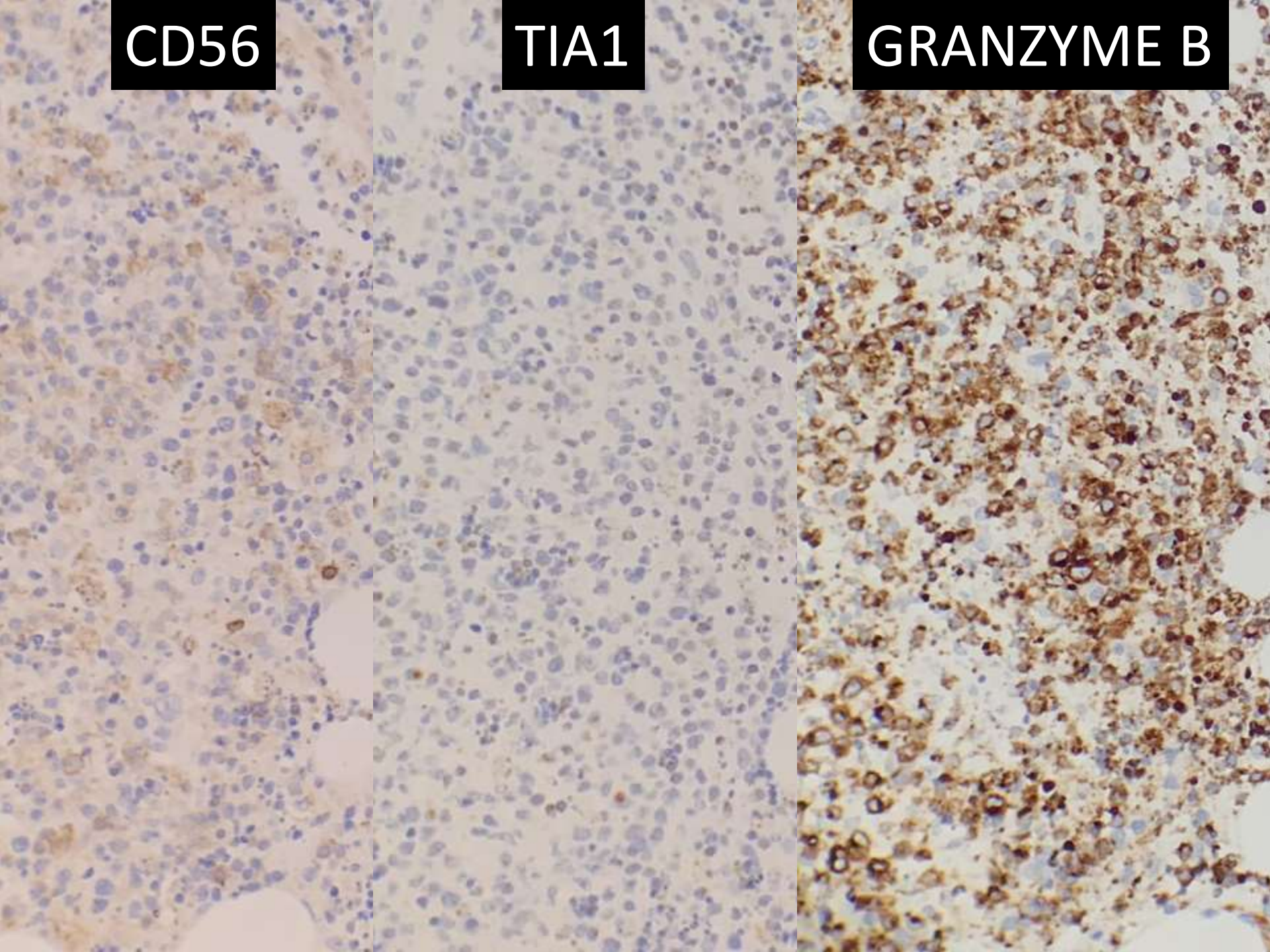

TCR-β


CD56
TIA1
GRANZYME B

DIAGNOSIS

- Subcutaneous panniculitis-like T-cell lymphoma
- Histopathology:
  - Subcutaneous lobular fibroadipose tissue involvement
  - Adipocyte rimming by atypical lymphocytes
  - Vascular invasion, necrosis, karyorrhexis are common
  - Admixed reactive histiocytes
- Immunophenotype
  - +: CD3, TCR-beta, CD8, TIA1, granzyme B, perforin
  - -/+: CD30 (not diffuse)
  - -: CD56, EBER ISH, CD4, TCR-delta

Subcutaneous panniculitis-like T-cell lymphoma

- Epidemiology
  - <1% of all non-Hodgkin lymphomas
  - ~20% are age <20 (median: 35 years)
  - Up to ~20% may have associated autoimmune disease (esp. systemic lupus erythematosus)
- Presentation
  - Multiple subcutaneous nodules or plaques
  - Lymph node typically spared; rare marrow adipocyte involvement
  - Systemic symptoms ~50%, ~15-20% hemophagocytic syndrome, often with hepatosplenomegaly
  - Cytopenias, elevated liver function tests are common

Subcutaneous panniculitis-like T-cell lymphoma

- Differential diagnosis
  - Lupus panniculitis
    - Lacks significant cytomorphologic atypia
    - Aggregates of B-cells, plasma cells, and plasmacytoid dendritic cells frequently present
    - Hyaline lipomembranous change may be present
    - Ki67 labeling index is typically low
  - Primary cutaneous γδ T-cell lymphoma
    - Commonly involves dermis and epidermis
    - TCR-delta-expressing, CD56-positive

Subcutaneous panniculitis-like T-cell lymphoma

- Differential diagnosis
  - Anaplastic large cell lymphoma
    - Typically solitary or localized nodules/tumors +/- ulcer
    - Sheets of CD30+ large epithelioid cells with abundant cytoplasm and reniform/horseshoe-shaped nuclei (Hallmark cells)
  - Lymphomatoid papulosis, Type C (CD30+, ALCL-like)
    - Many relapsing-remitting papular, papulonecrotic, or nodular skin lesions in various stages

Subcutaneous panniculitis-like T-cell lymphoma

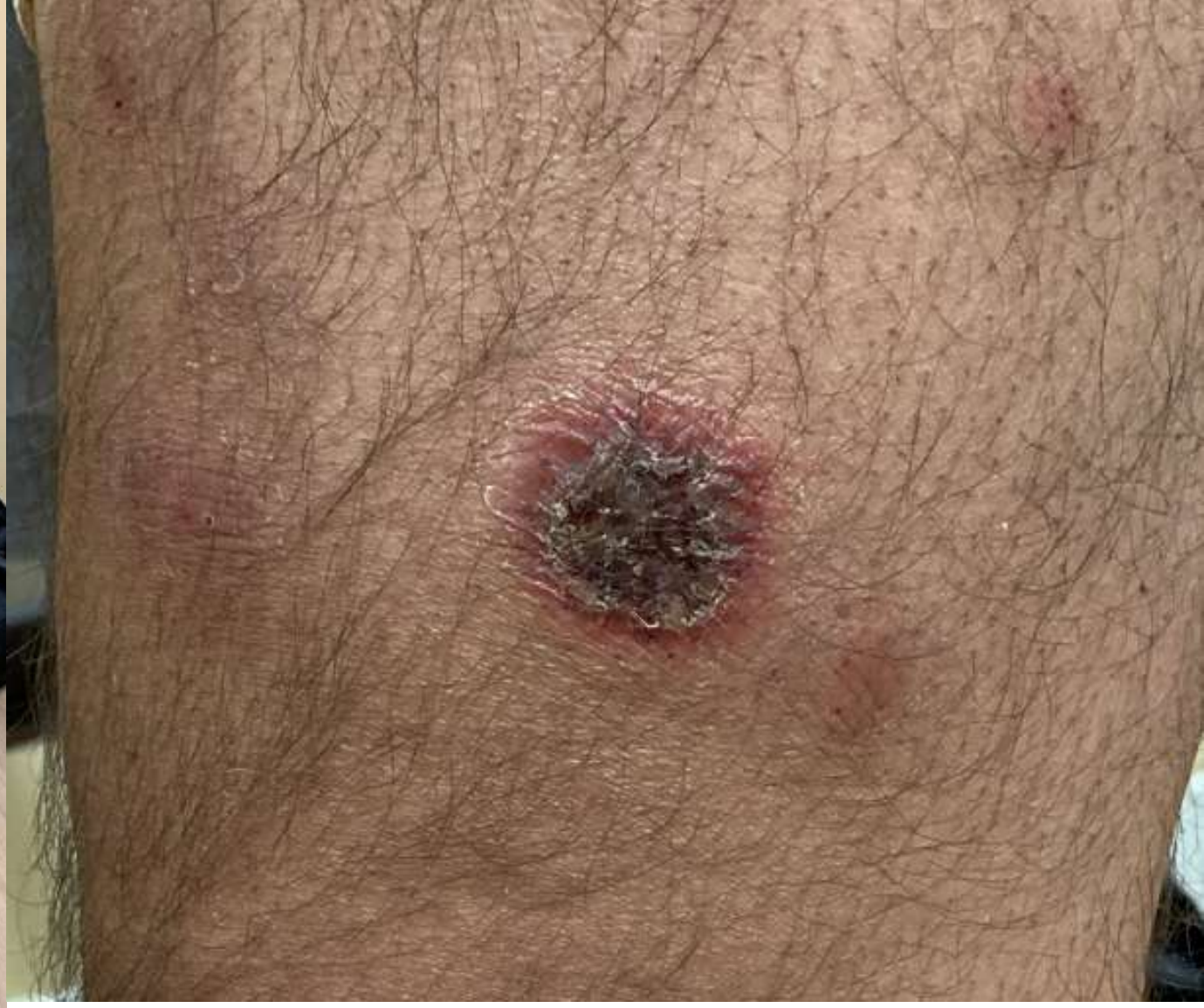
- Prognosis
  - Median 5-year overall survival: ~80%
  - Hemophagocytic syndrome confers a poor prognosis (5-year overall survival 46% vs 91%)[1]

[1] Willemze et al. Subcutaneous panniculitis-like T-cell lymphoma: definition, classification, and prognostic factors: an EORTC Cutaneous Lymphoma Group Study of 83 cases. Blood. 2008 Jan 15;111(2):838-45.

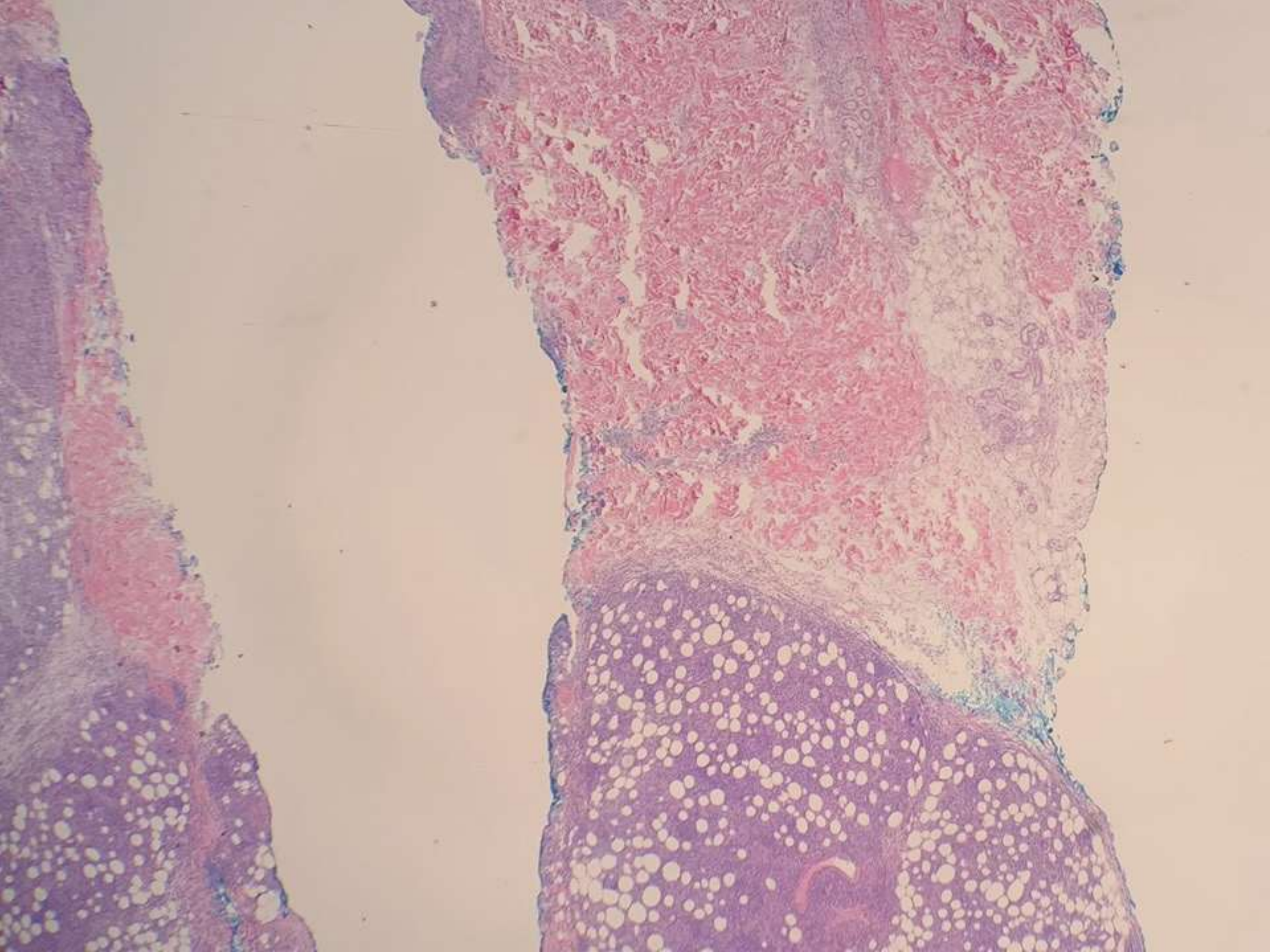
20-0310

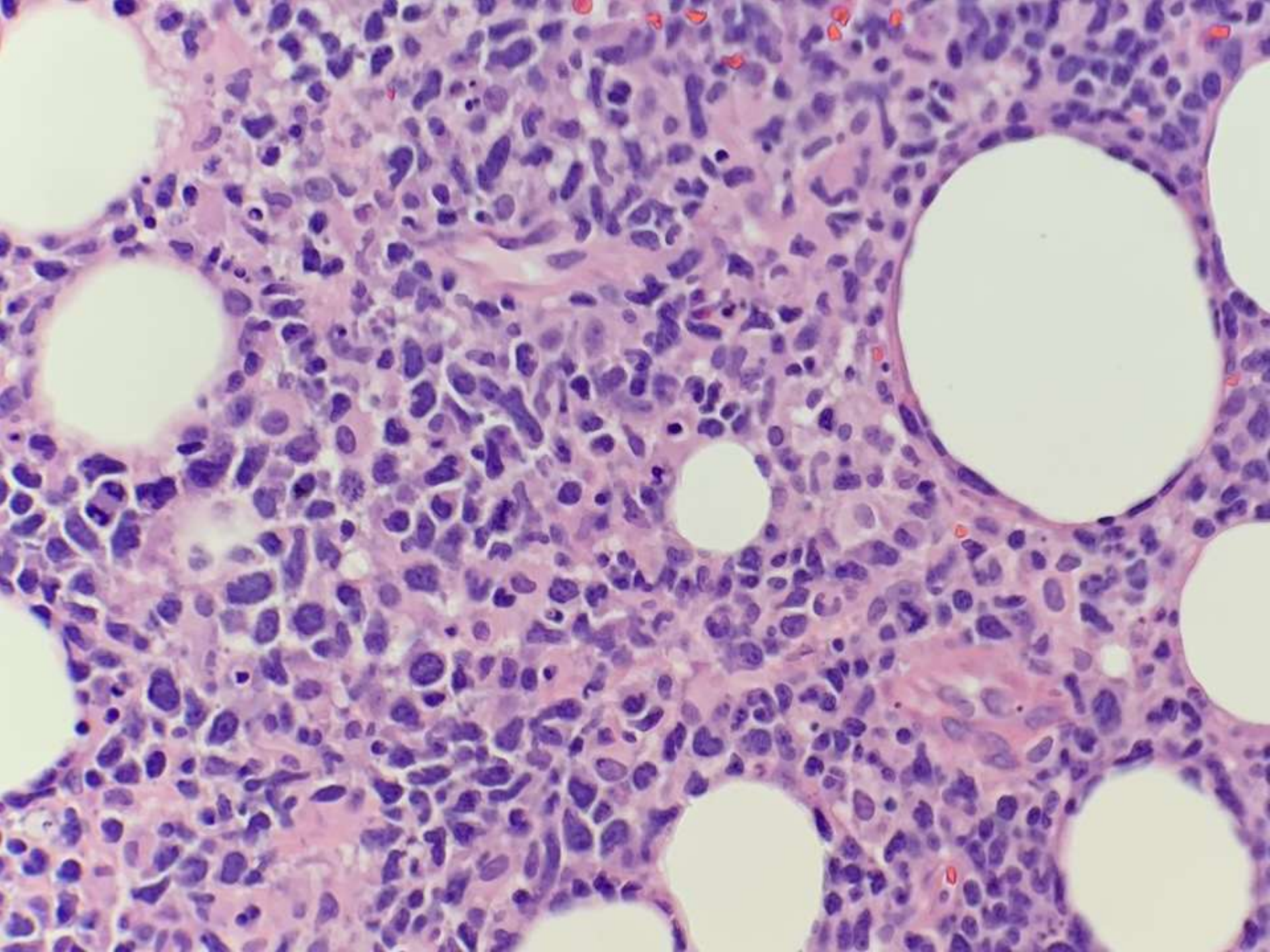
Matt Koo/Roberto Novoa; Stanford

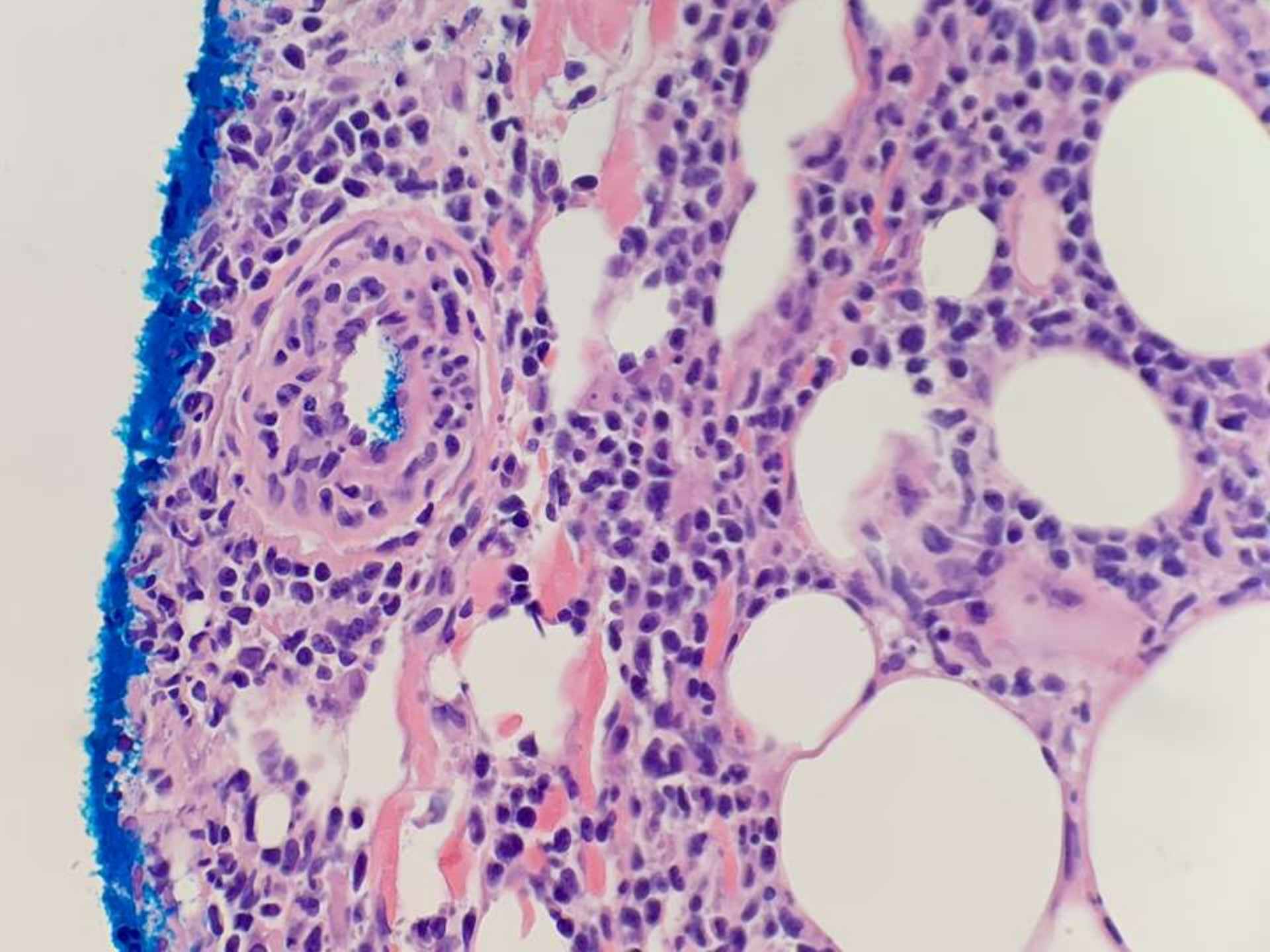
37-year-old M with skin nodules of the upper and lower extremities.

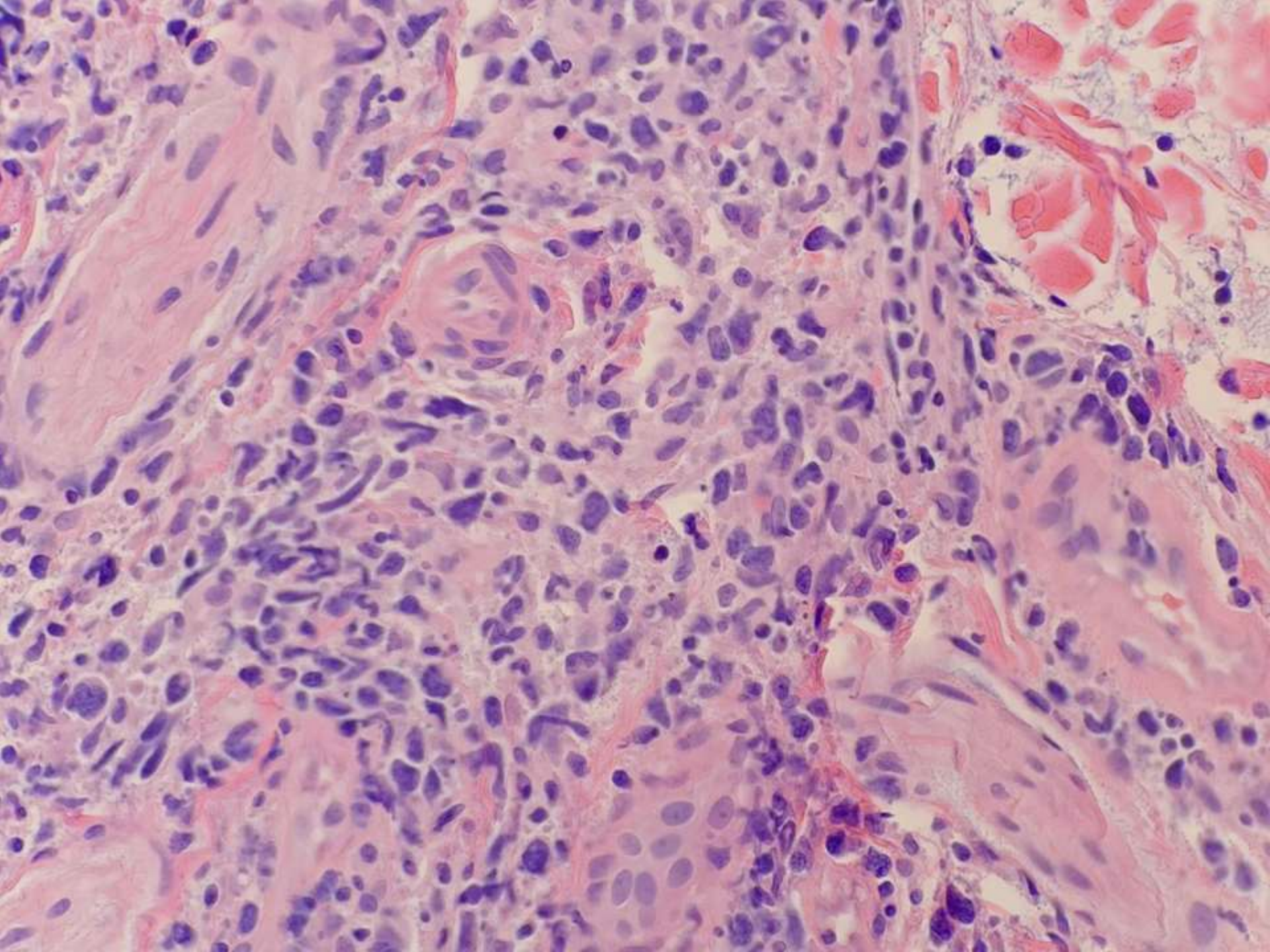


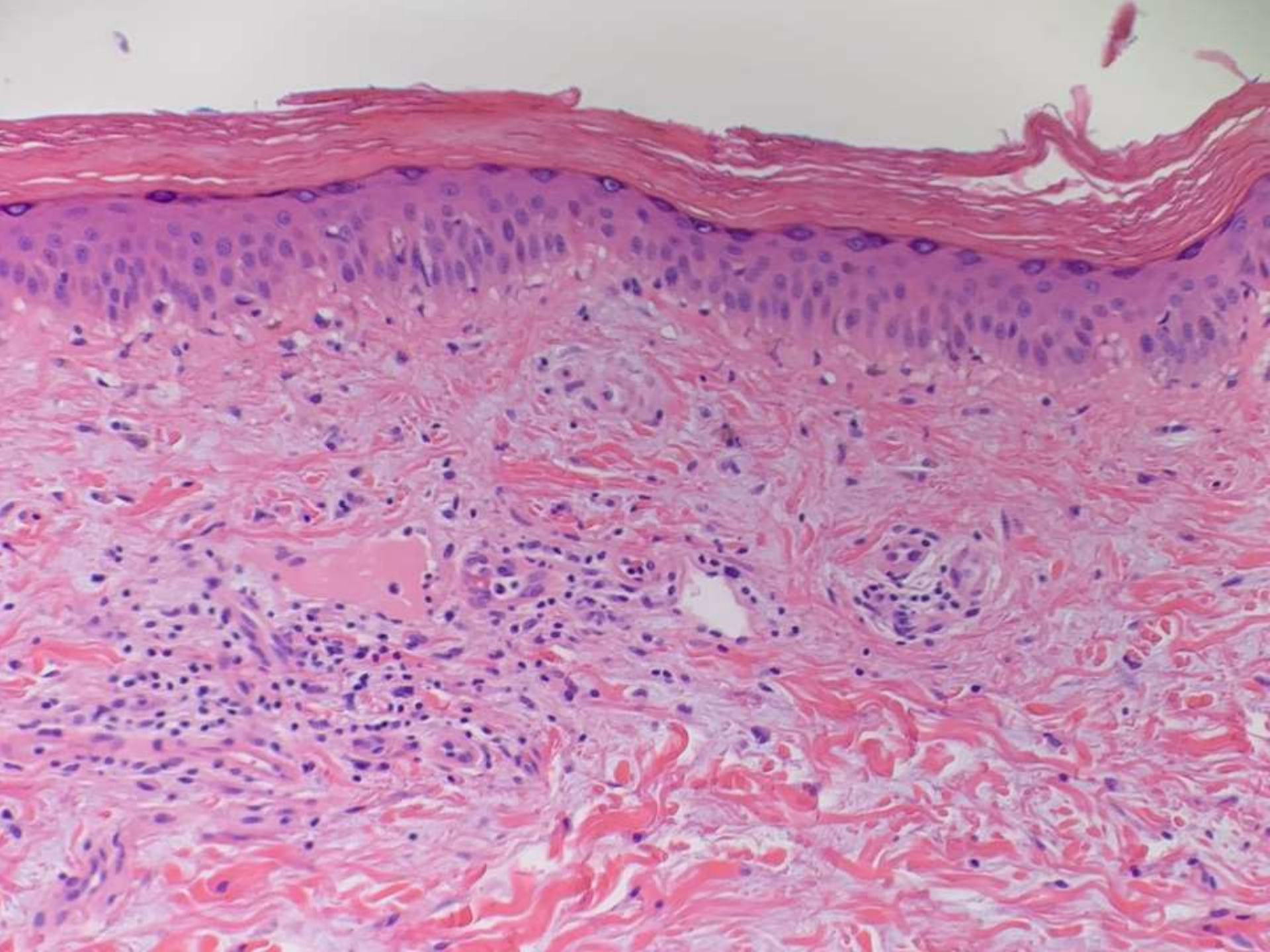
Physical exam: “numerous (~30), 1cm-2cm red indurated mildly tender red to brown nodules with peripheral erythema the thighs, shins, L upper arm, R forearm. Spares abdomen and back.”

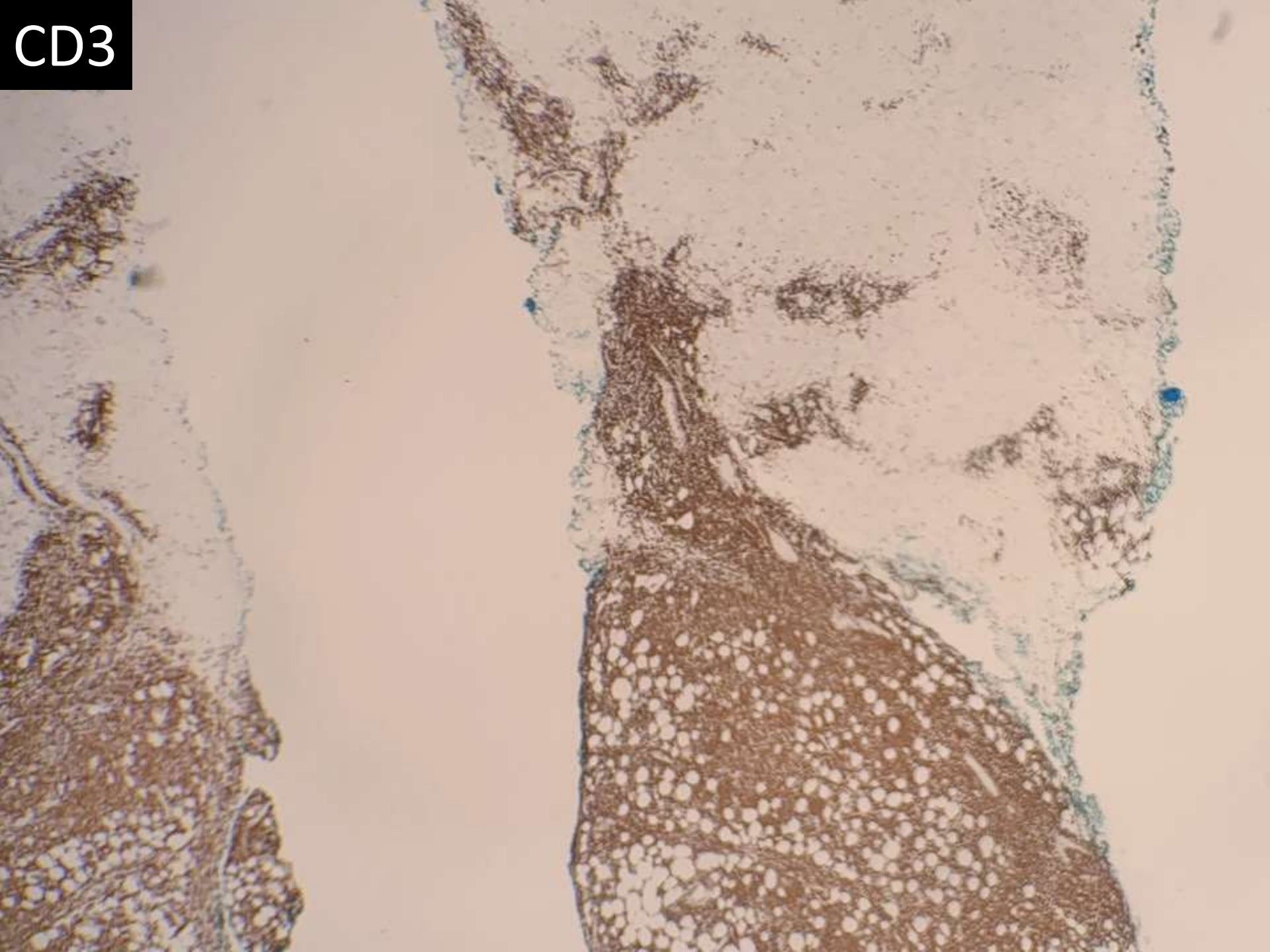


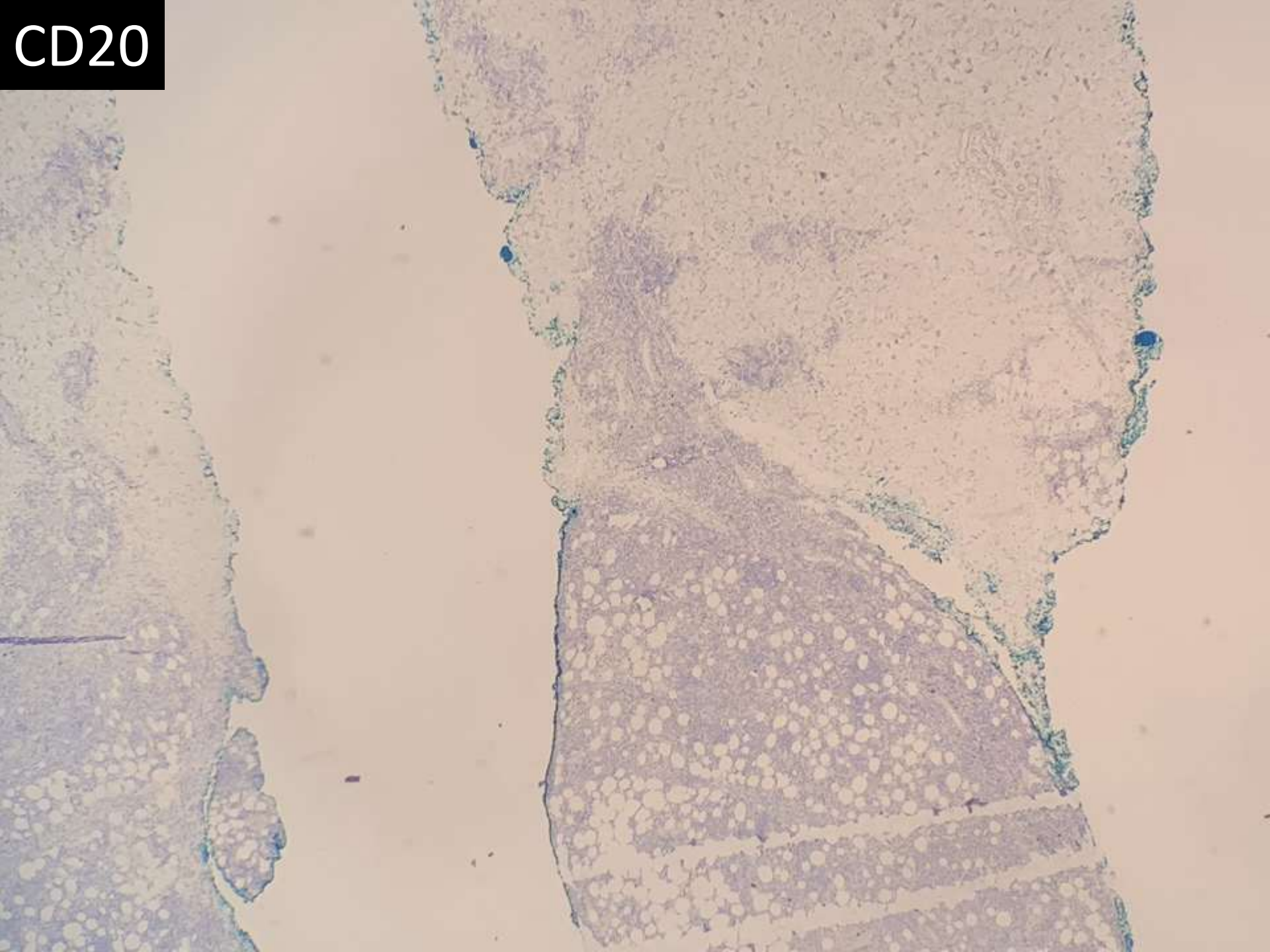









CD3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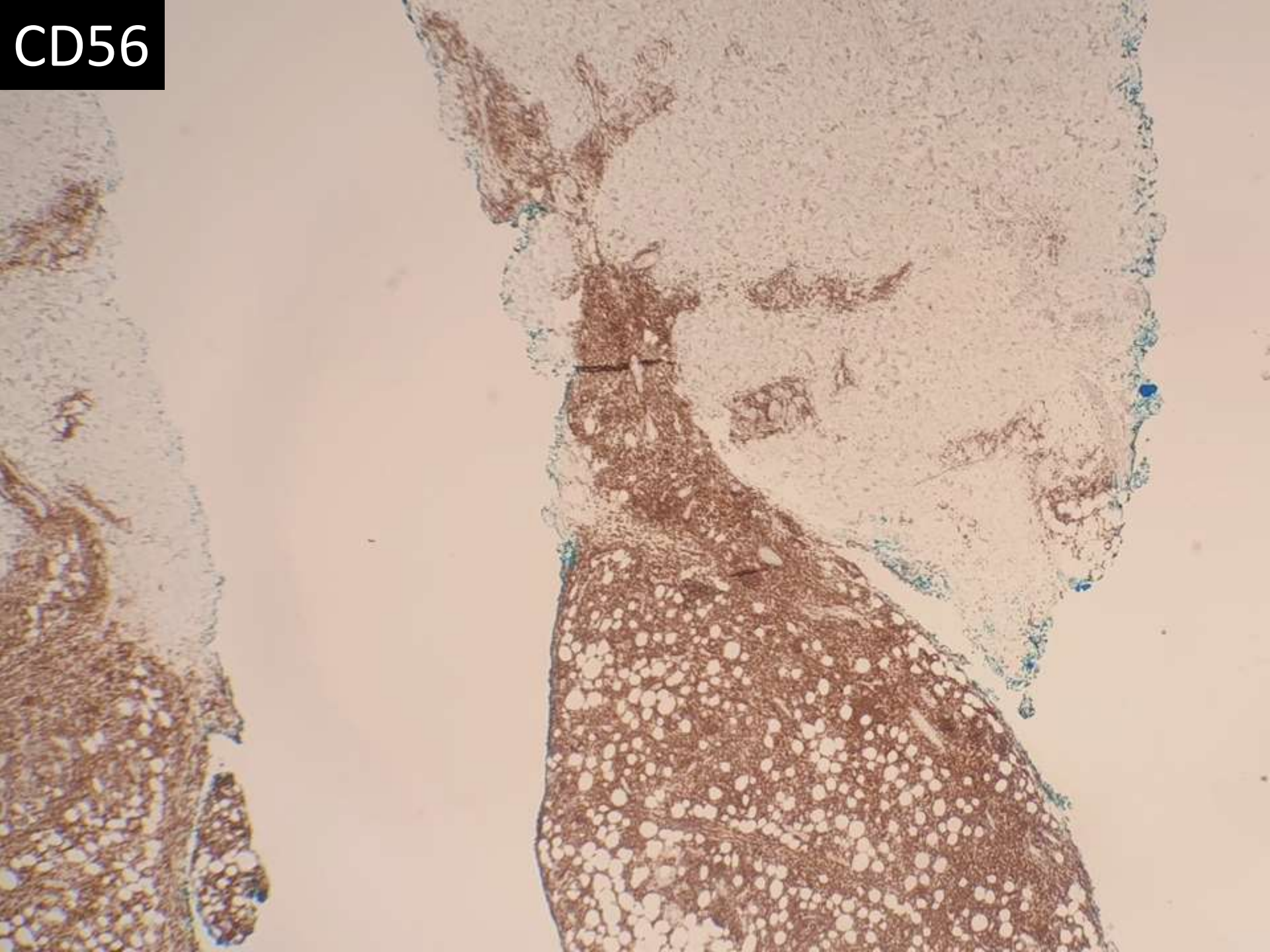
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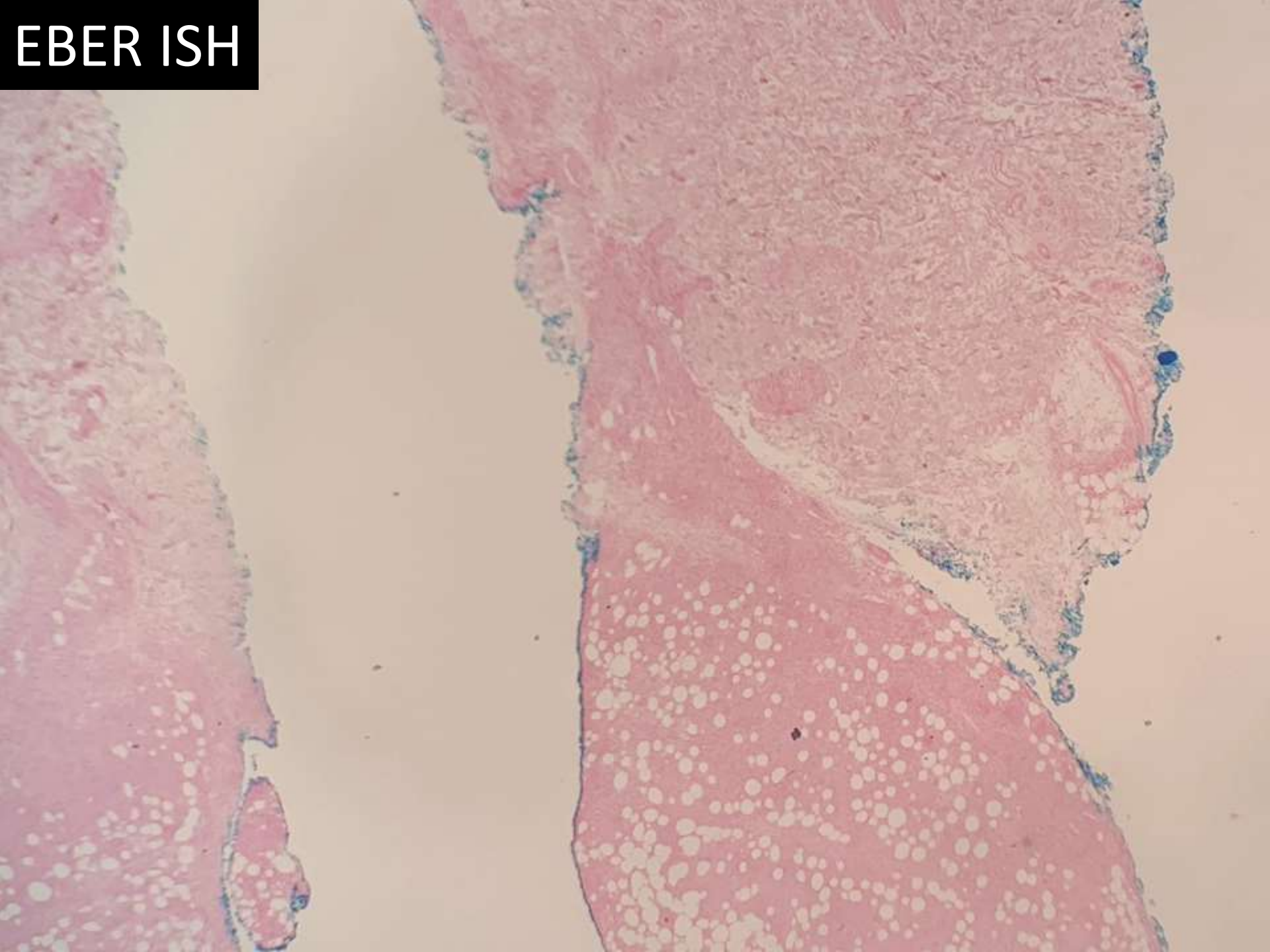
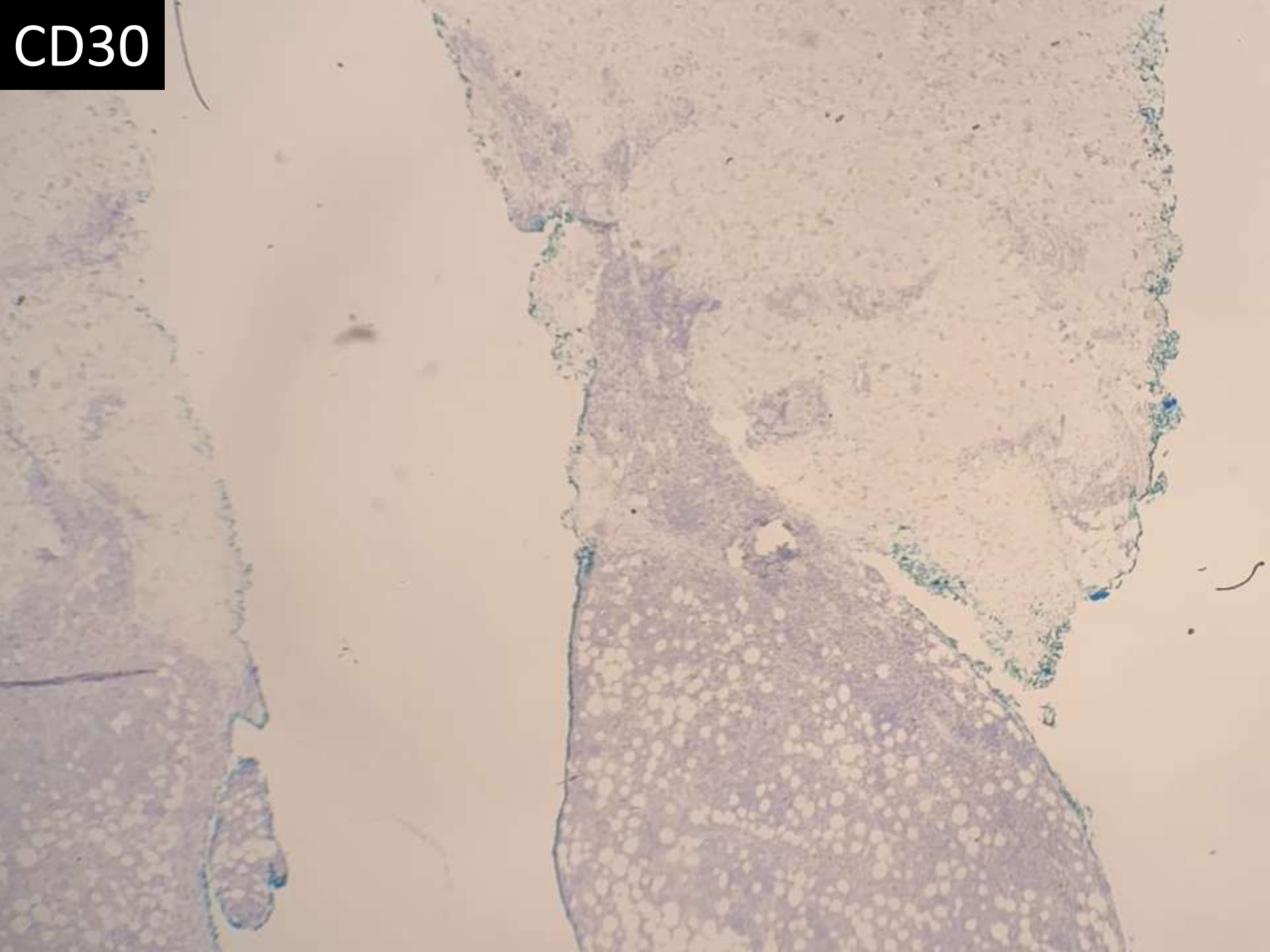

EBER ISH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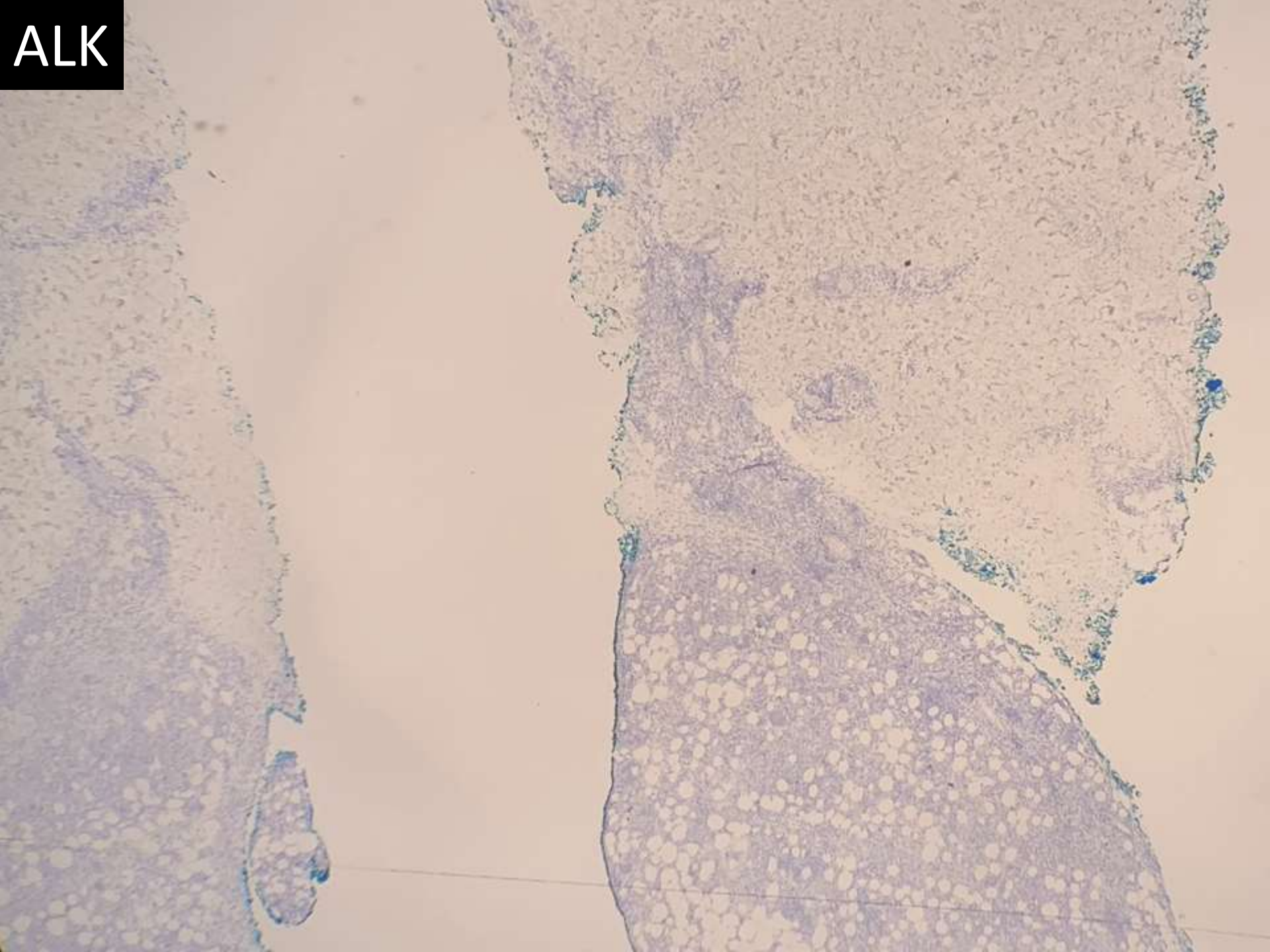
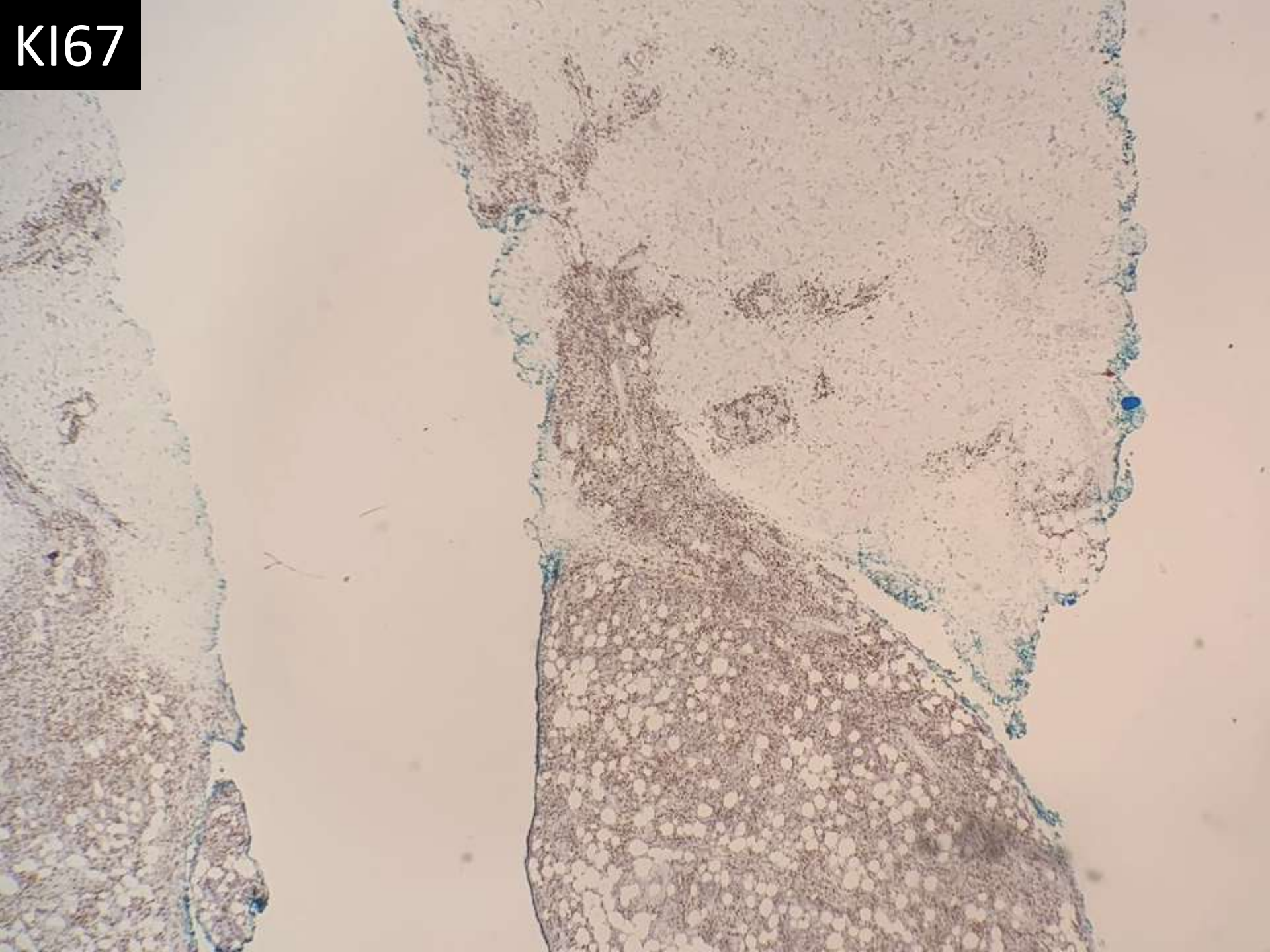
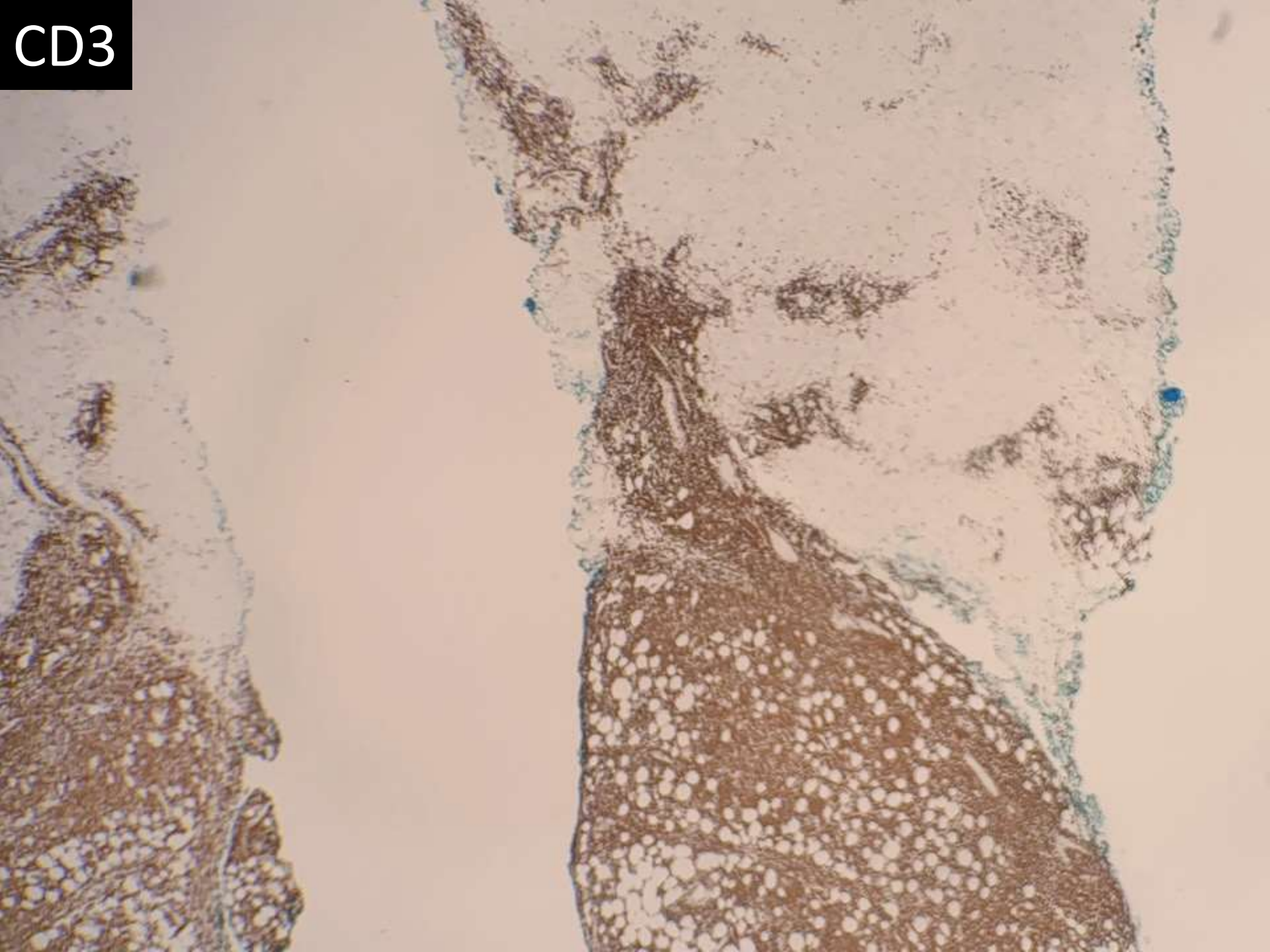
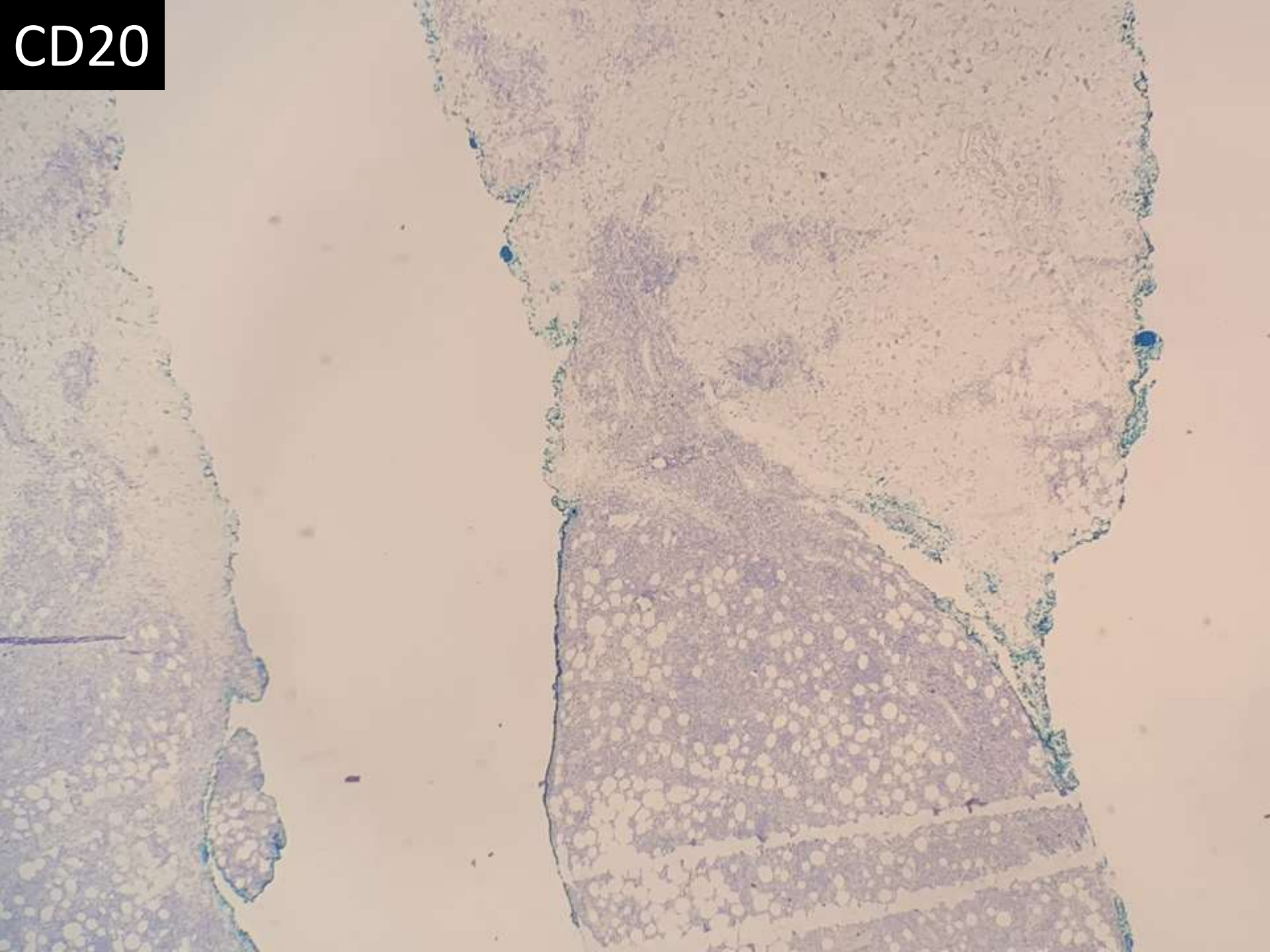

ALK


KI67

DIAGNOSIS?


CD3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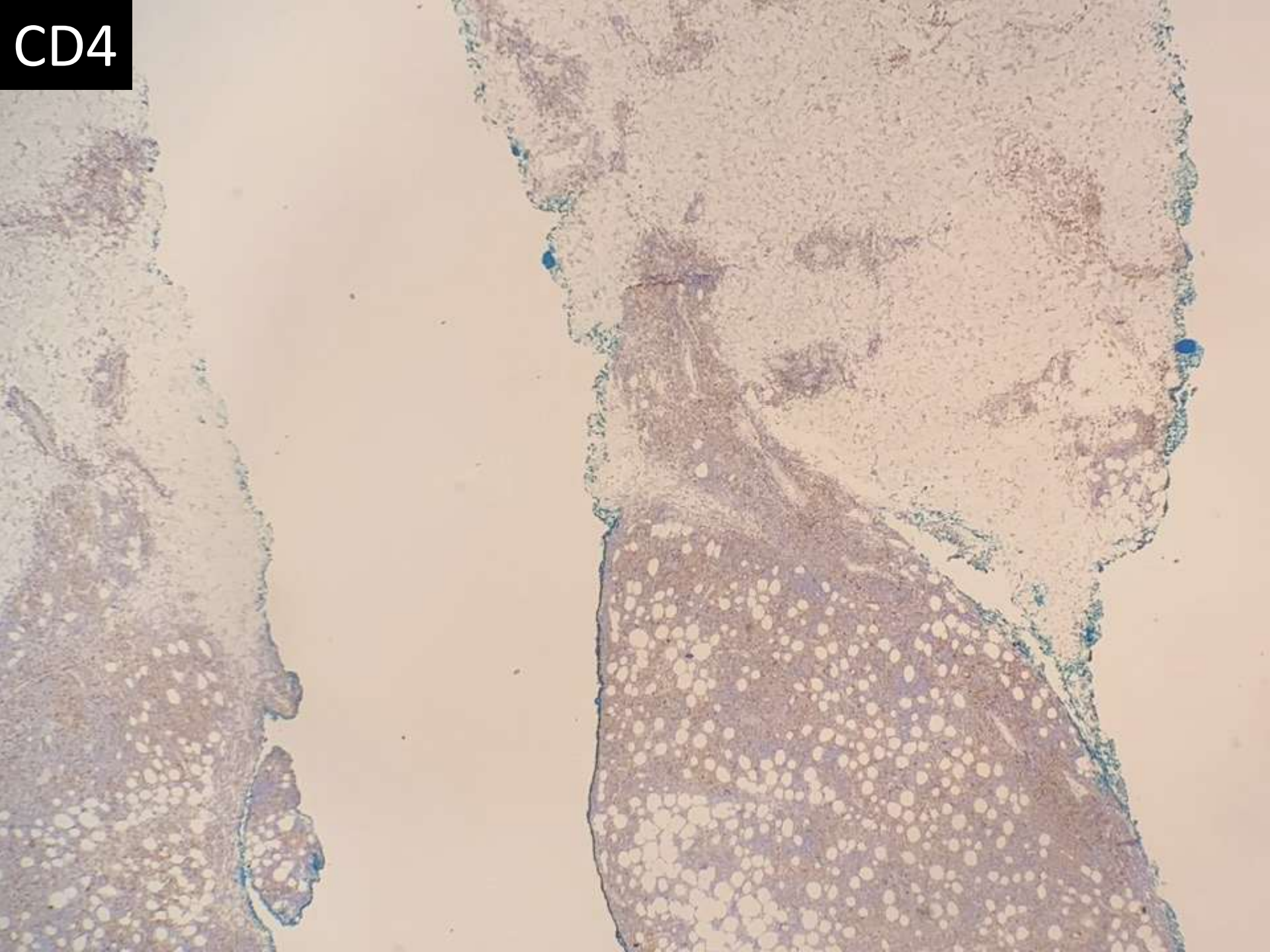
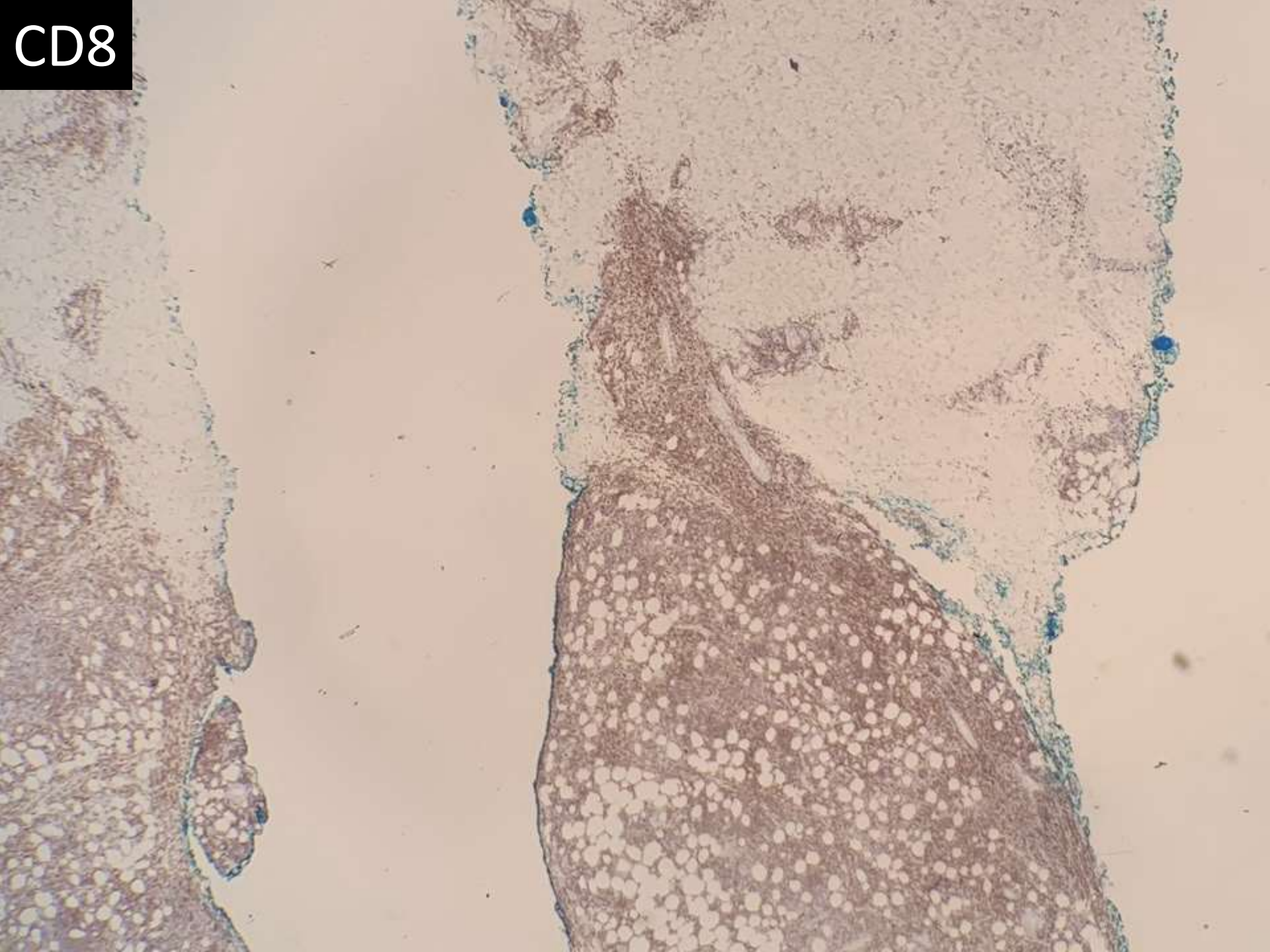
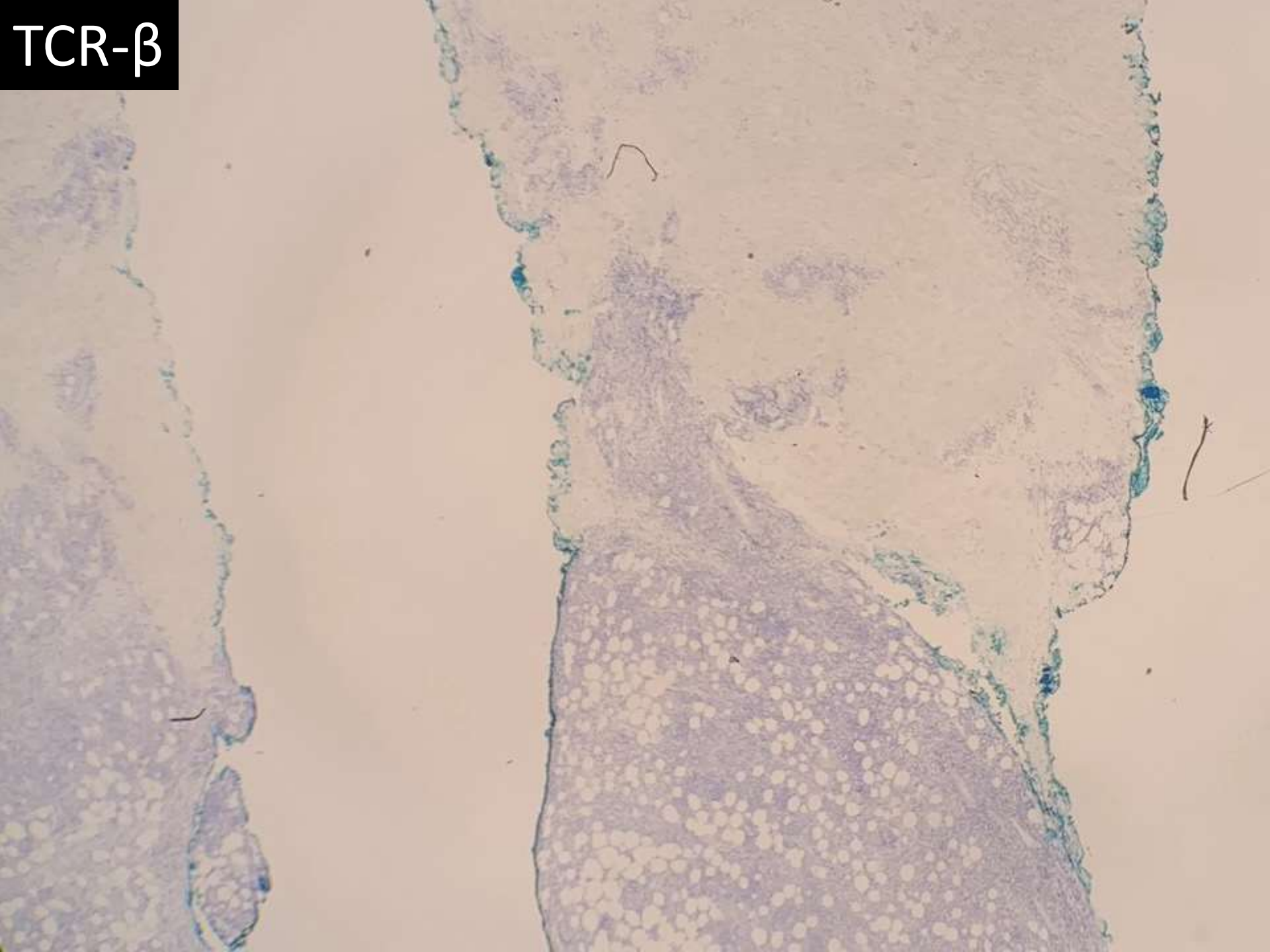
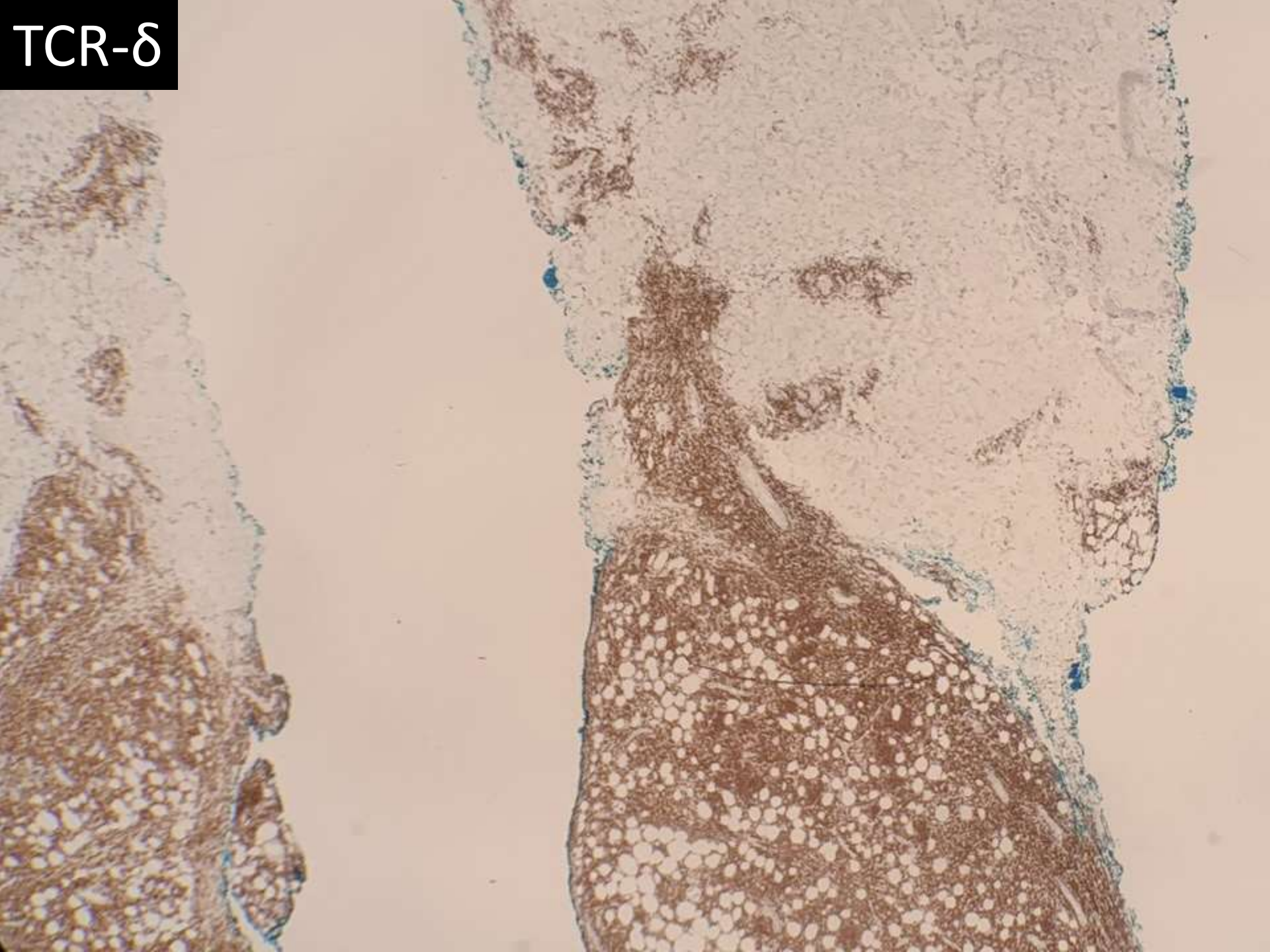
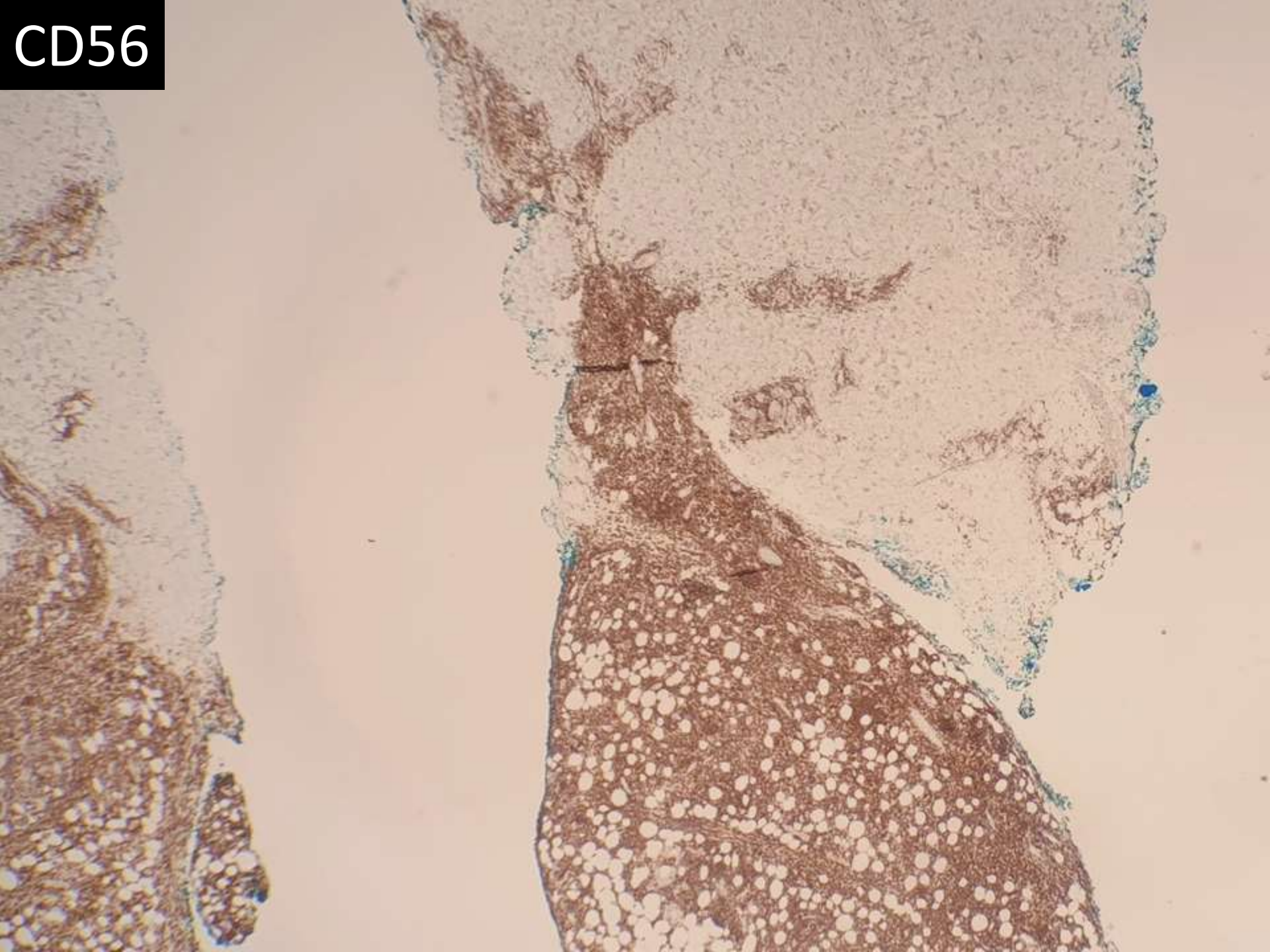

CD4


CD8


TCR-β


TCR-δ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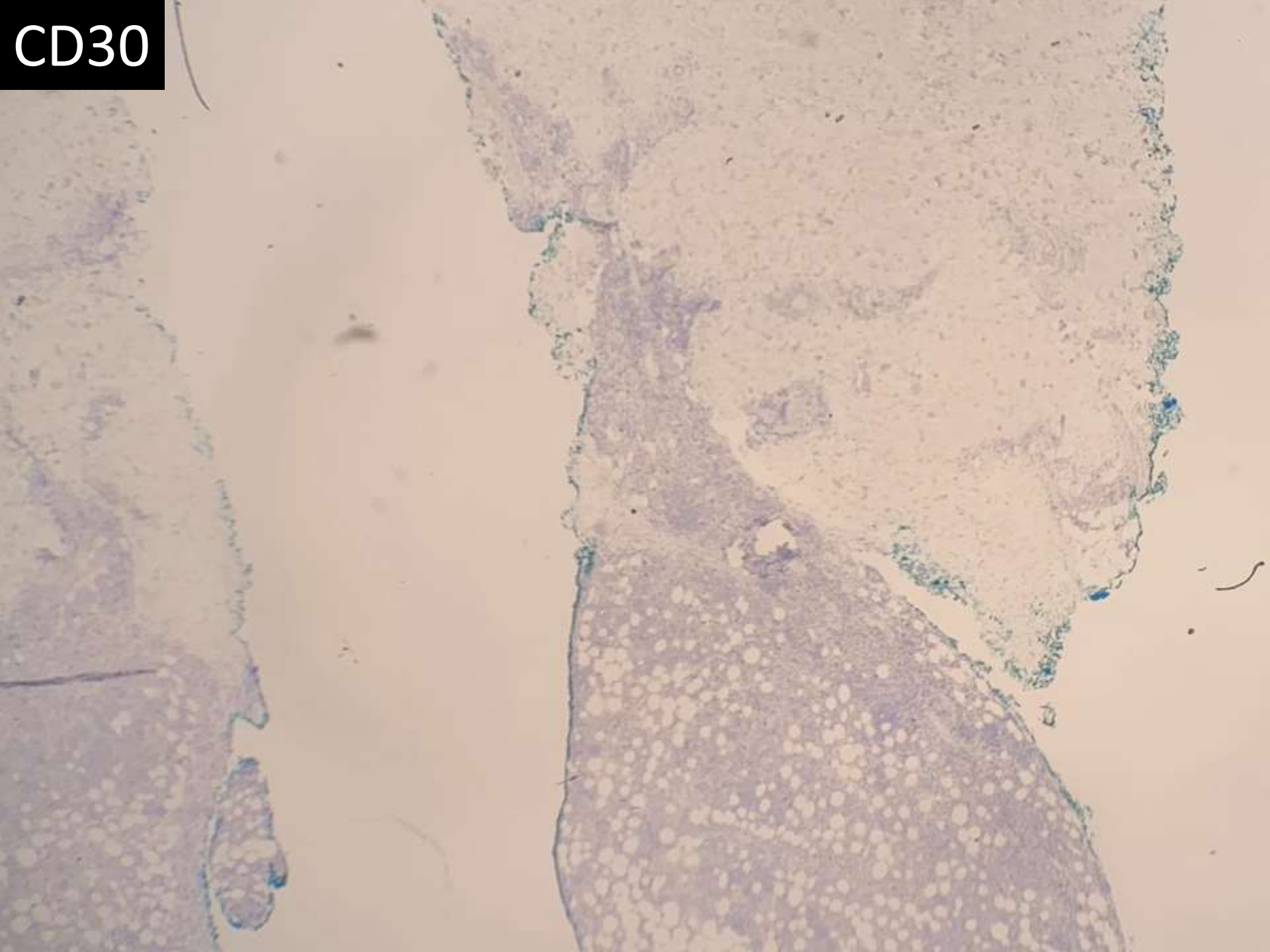
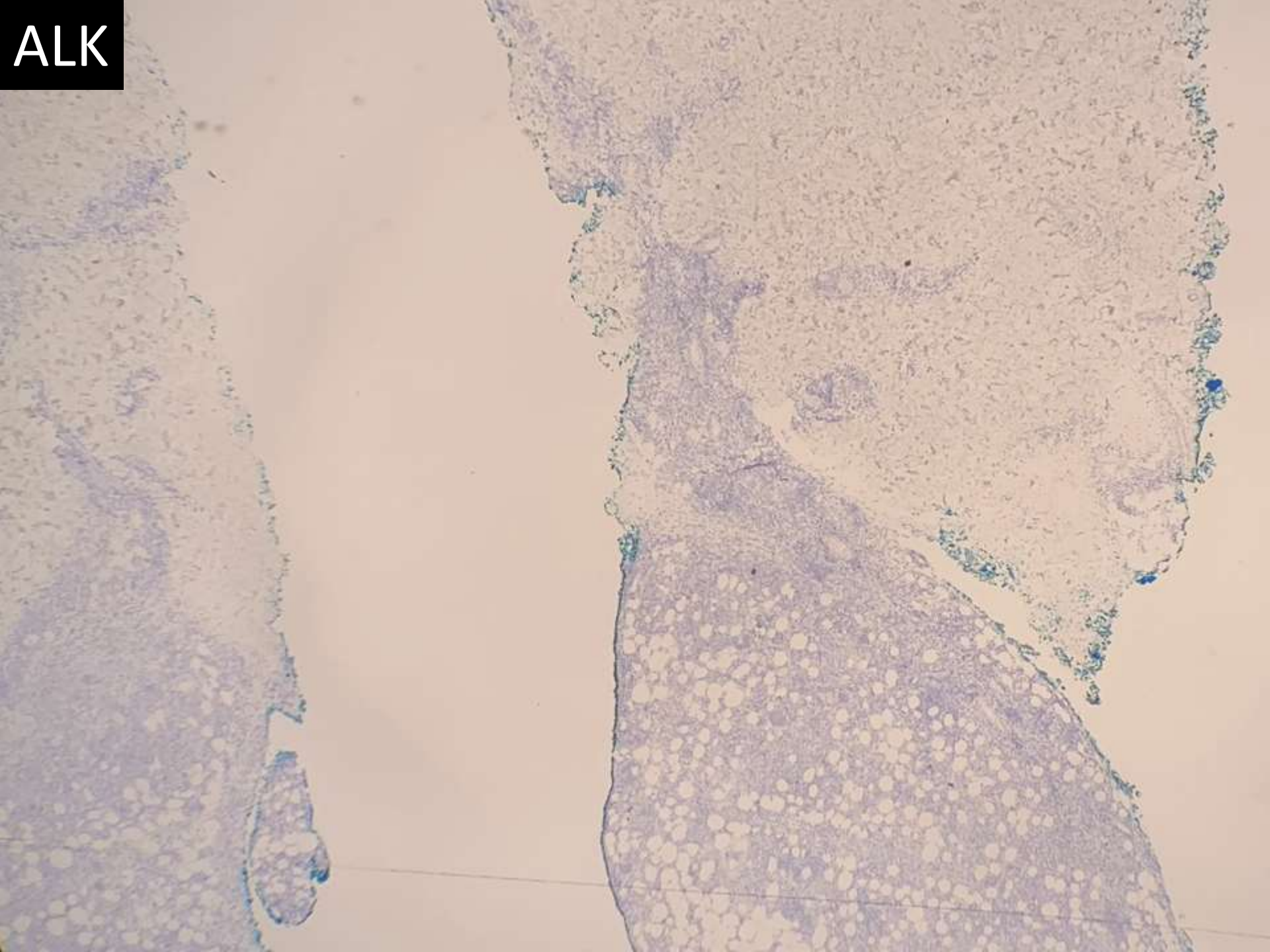

CD30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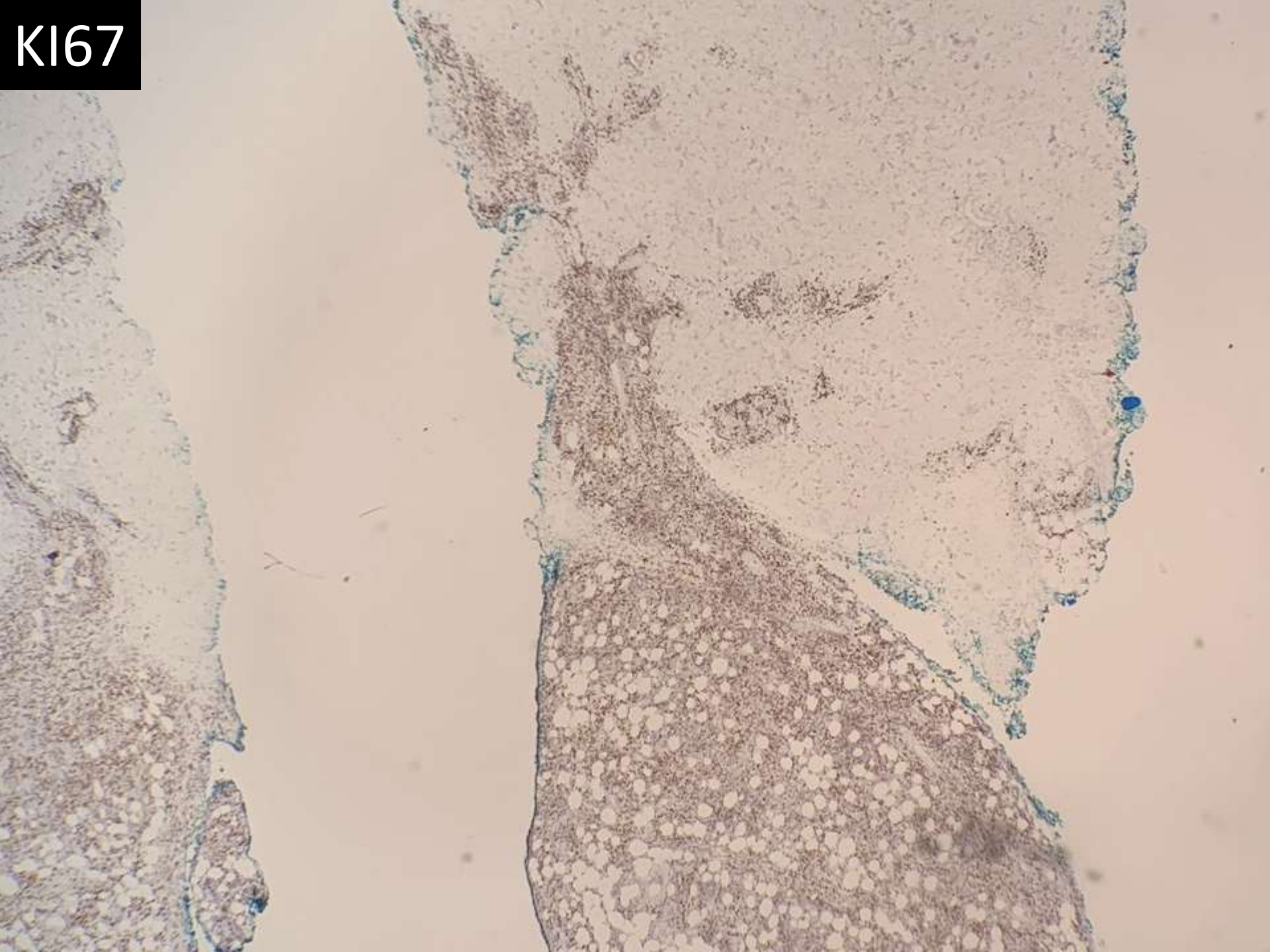
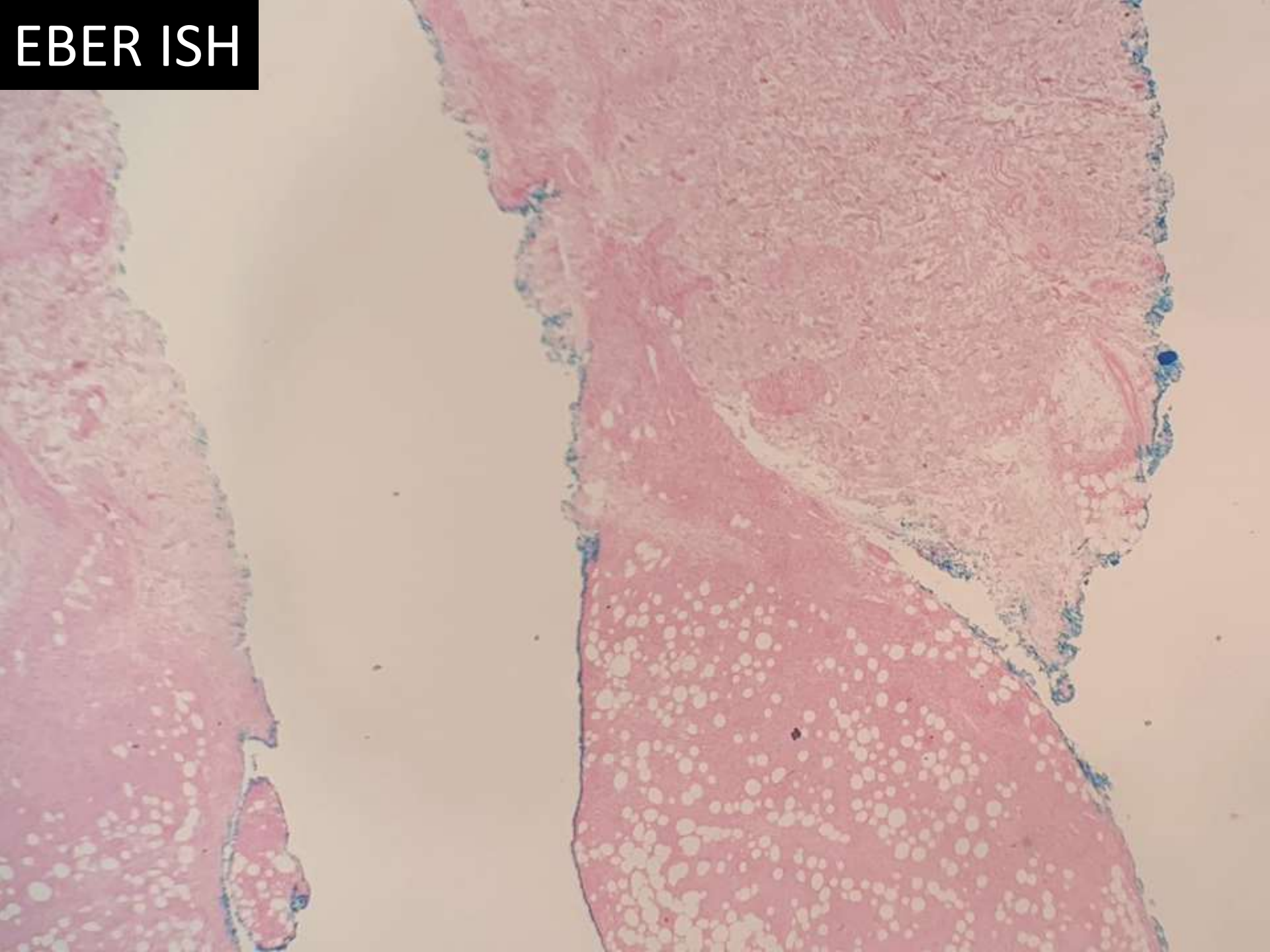

KI67


EBER ISH

DIAGNOSIS

- Primary cutaneous γδ T-cell lymphoma

Primary cutaneous γδ T-cell lymphoma

- Epidemiology
  - ~1% of all primary cutaneous T-cell lymphomas
  - No known sex predilection
- Presentation
  - Necrotizing plaques and tumors
  - Rarely: chronic scaly plaques similar to those of mycosis fungoides
  - +/-: associated hemophagocytic syndrome
  - B symptoms: fever, night sweats, weight loss

Primary cutaneous γδ T-cell lymphoma

- Histopathology
  - Medium-to-large lymphoid cells with coarsely clumped chromatin
  - Apoptosis and necrosis are common
  - Angioinvasion may be present
  - Can involve subcutis +/- dermis +/- epidermis
  - May show adipocyte rimming and epidermotropism
- Immunophenotype
  - +: TCR-δ, CD3, CD56, TIA1, granzyme, perforin
  - -/+: CD8, CD30 (not diffuse)
  - -: TCR-β, CD4, EBER ISH

Primary cutaneous γδ T-cell lymphoma

- Differential diagnosis
  - Subcutaneous panniculitis-like T-cell lymphoma
    - Typically spares dermis and epidermis
    - TCR-β-expressing, CD56-negative
  - Lupus panniculitis
    - Lacks significant cytomorphologic atypia
    - Aggregates of B-cells, plasma cells, and plasmacytoid dendritic cells frequently present
    - Hyaline lipomembranous change may be present
    - Ki67 labeling index is typically low

Primary cutaneous γδ T-cell lymphoma

- Differential diagnosis
  - Mycosis fungoides (rarely may express TCR-γδ)
    - Slow progression (years to decades): patches→plaques→tumors
  - Lymphomatoid papulosis, Type D (CD30+, CD8+, epidermotropic)
    - Many relapsing-remitting papular, papulonecrotic, or nodular skin lesions in various stages
    - CD30-positive (diffuse, strong)

Primary cutaneous γδ T-cell lymphoma

- Differential diagnosis
  - Anaplastic large cell lymphoma
    - Typically solitary or localized nodules/tumors with frequent ulceration
    - CD30-positive (diffuse, strong)
  - Primary cutaneous CD8+ aggressive epidermotropic cytotoxic T-cell lymphoma
    - TCR-β-expressing, commonly CD30-negative

Primary cutaneous γδ T-cell lymphoma

- Prognosis
  - Poor prognosis: median survival ~15 months
  - Usually resistant to multi-agent chemotherapy and/or radiation
  - Subcutaneous involvement portends a poorer prognosis than cases limited to the dermis and/or epidermis