Disclosures
November 2, 2015

David Levin, MD has disclosed that he is a stockholder with Ekso Bionics. The activity planners have determined that this financial relationship is not relevant to the case being presented. The following planners and faculty have no financial relationships with commercial interests to disclose:

Presenters:

Christine Louie, MD
Teri Longacre, MD
Peyman Samghabadi, MD
Hannes Vogel, MD
Jarish Cohen, MD, PhD
Andrew Horvai, MD, PhD
Sarah Cherny, MD
Linlin Wang, MD
Kurt Schaberg, MD
Ankur Sangoi, MD

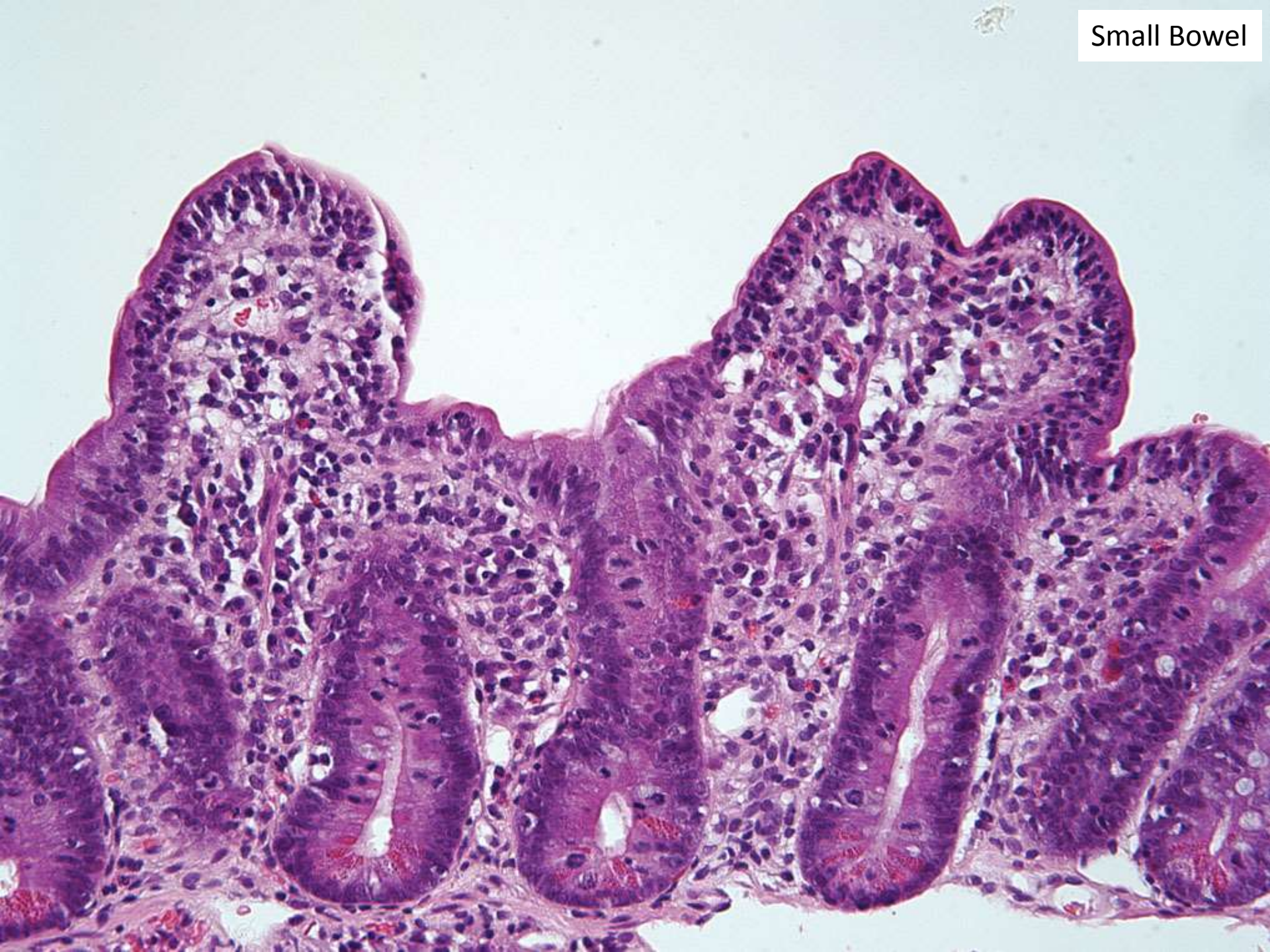
Activity Planners:

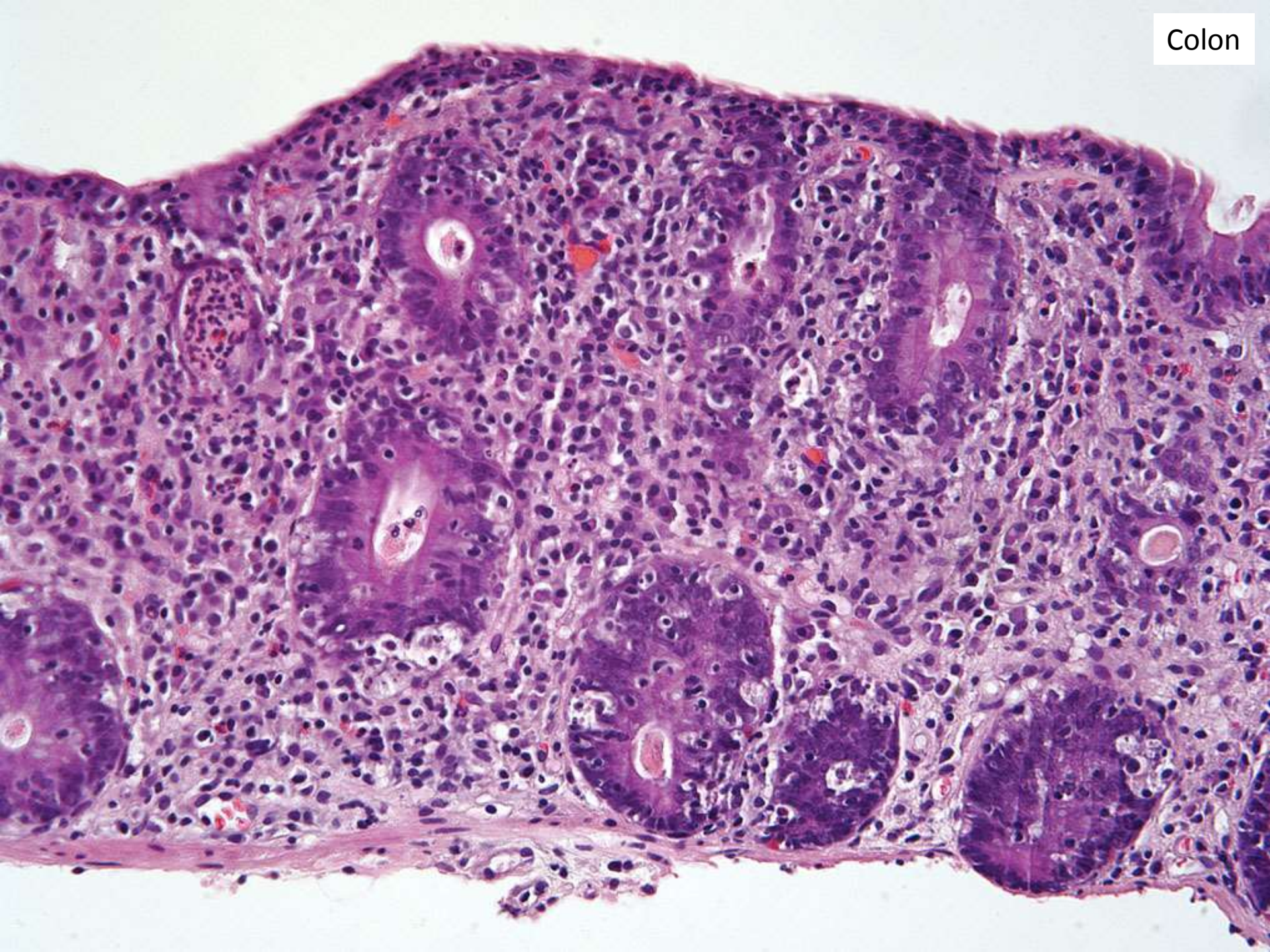
Kristin Jensen, MD
Ankur Sangoi, MD
William Rogers, MD

SB 5991

80-year-old man with CLL, now presenting with diarrhea. Small/large bowel biopsies.

Christine Louie/Teri Longacre; Stanford


Small Bowel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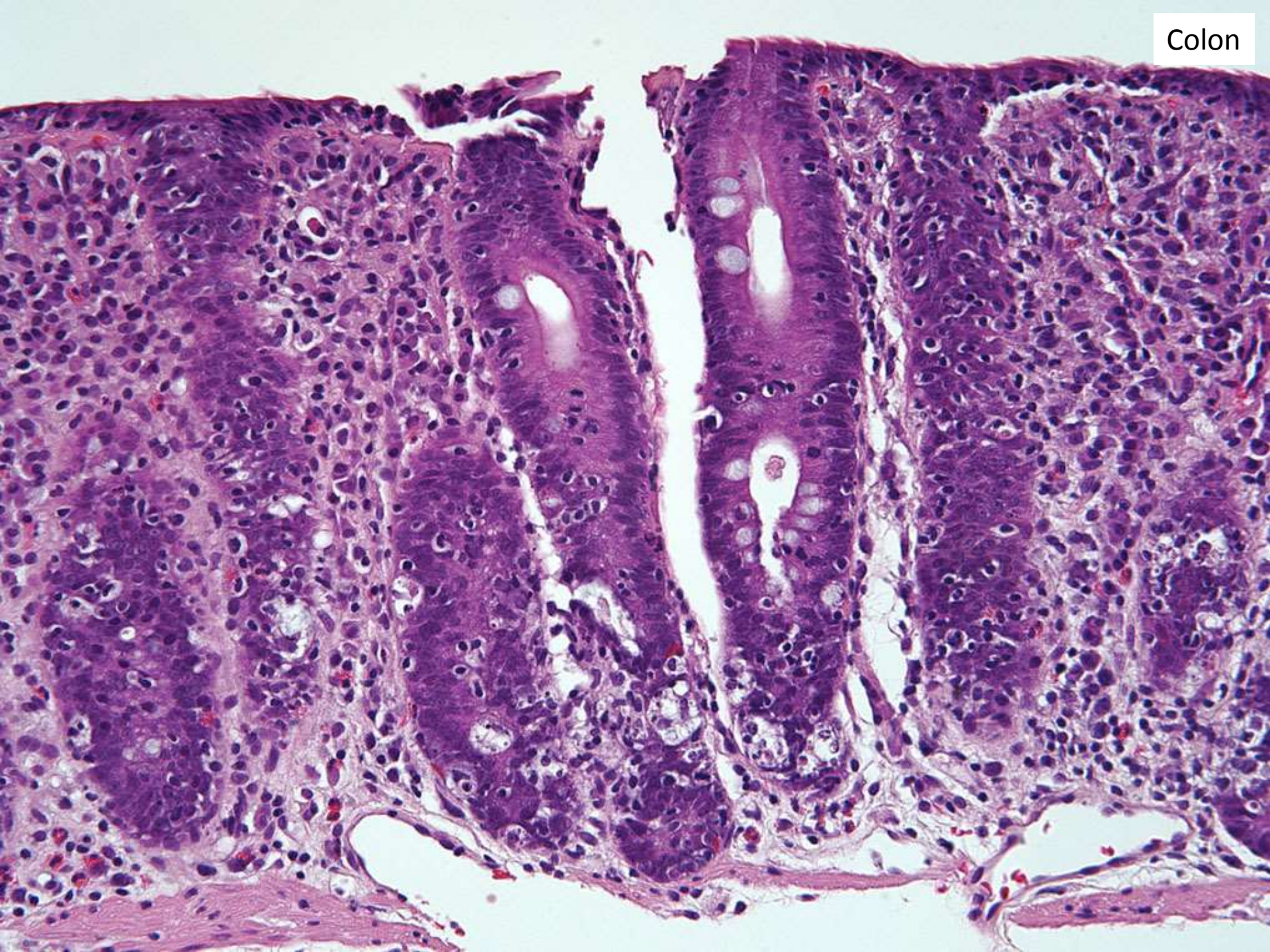
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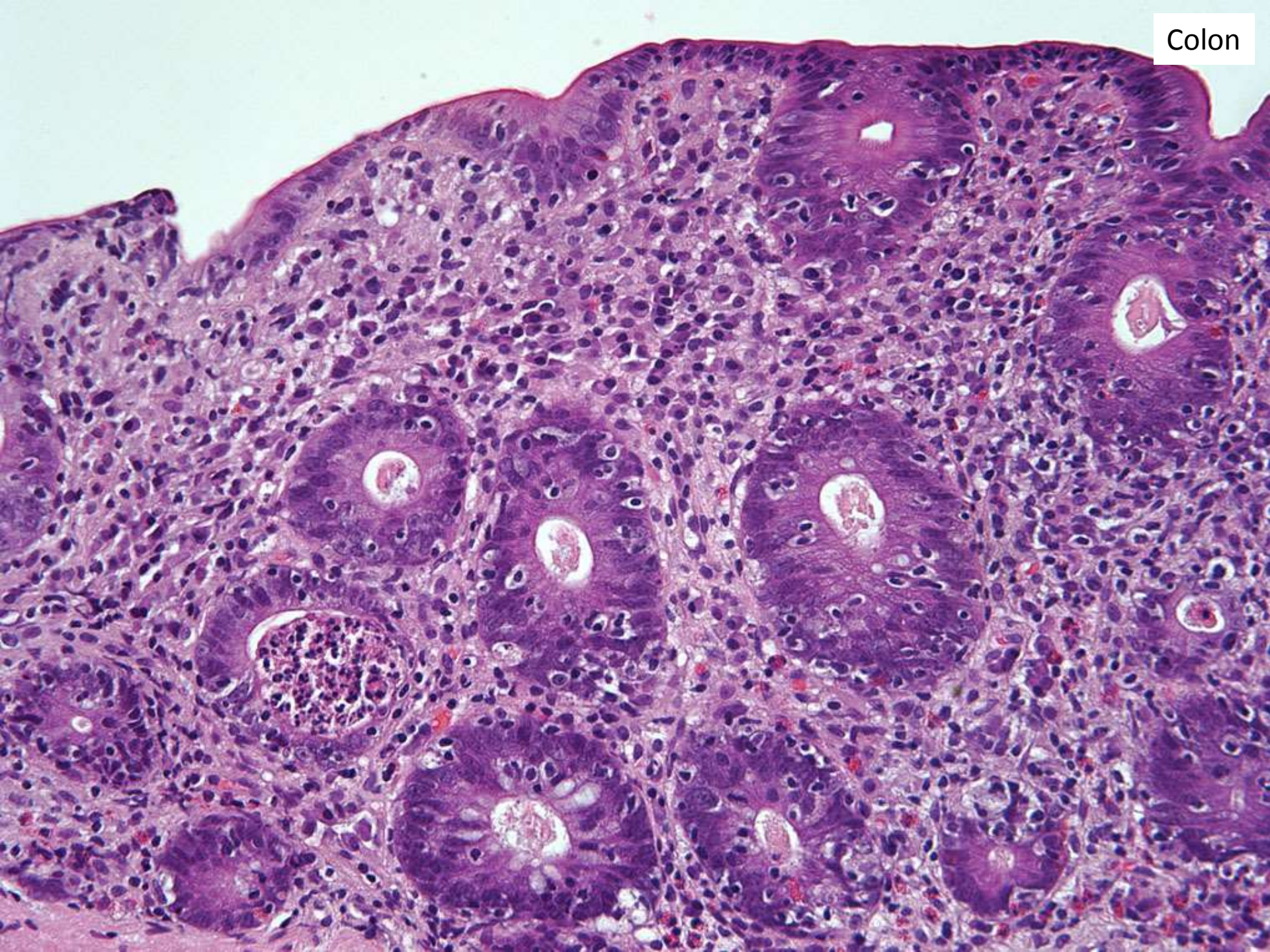
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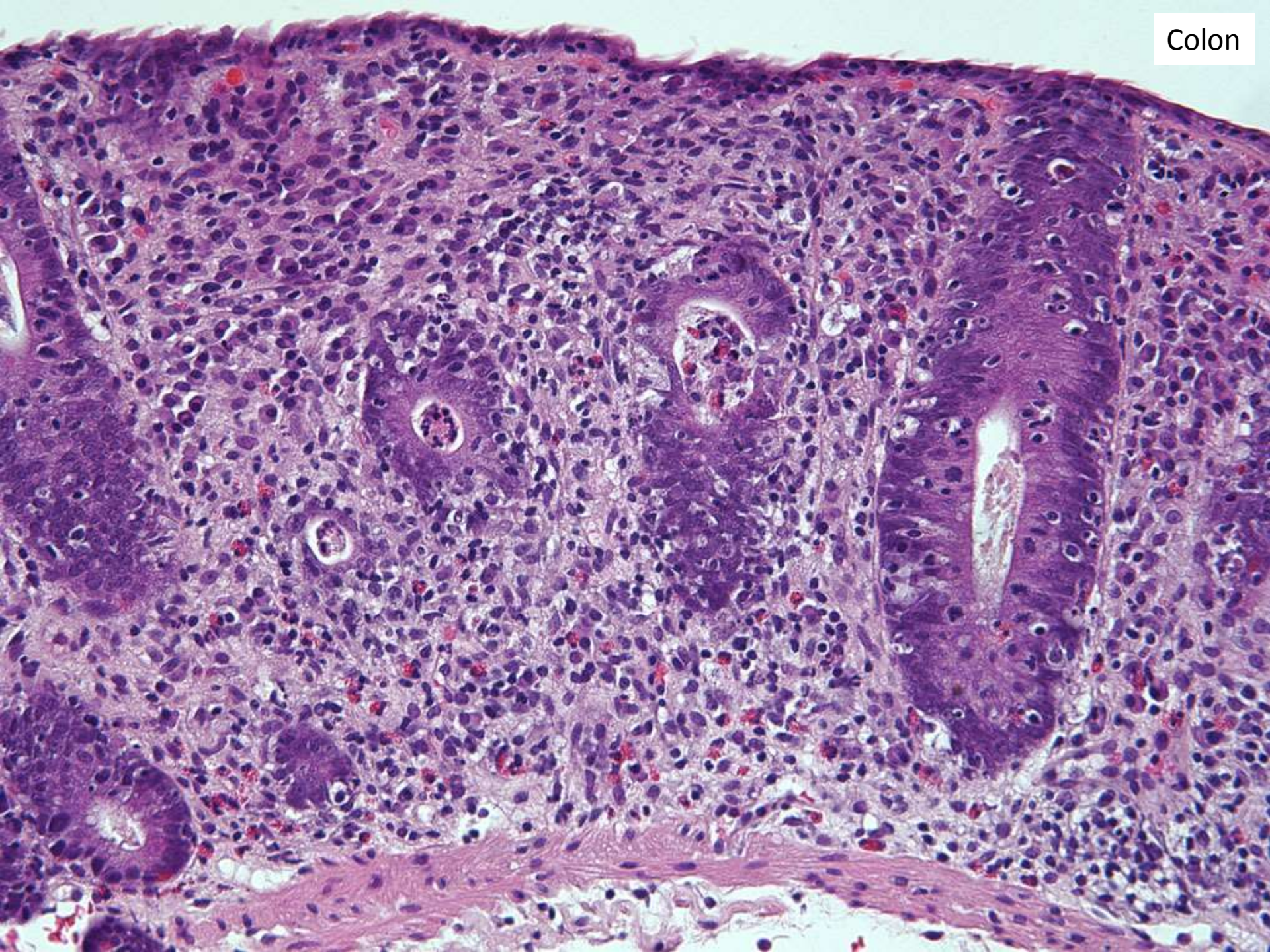

Colon

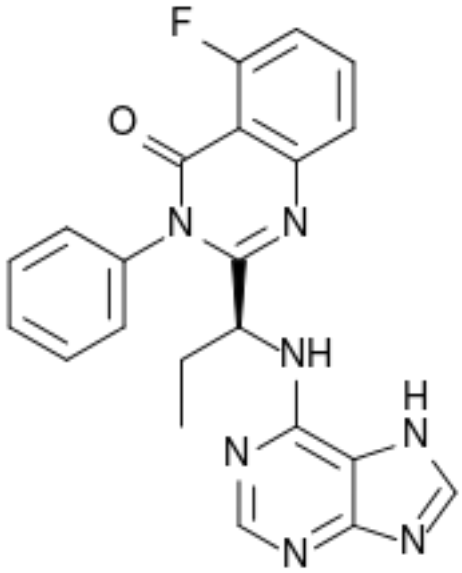
DIAGNOSIS?

Idelalisib-associated Enterocolitis

Idelalisib

Approved by FDA last year for:

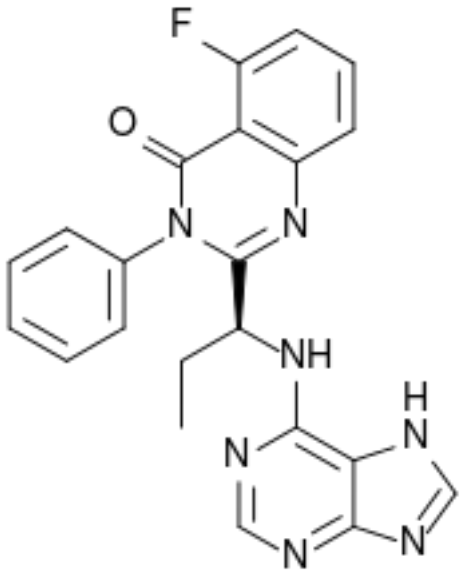
- Relapsed CLL
- Accelerated approval also granted for relapsed follicular lymphoma and relapsed SLL



Idelalisib

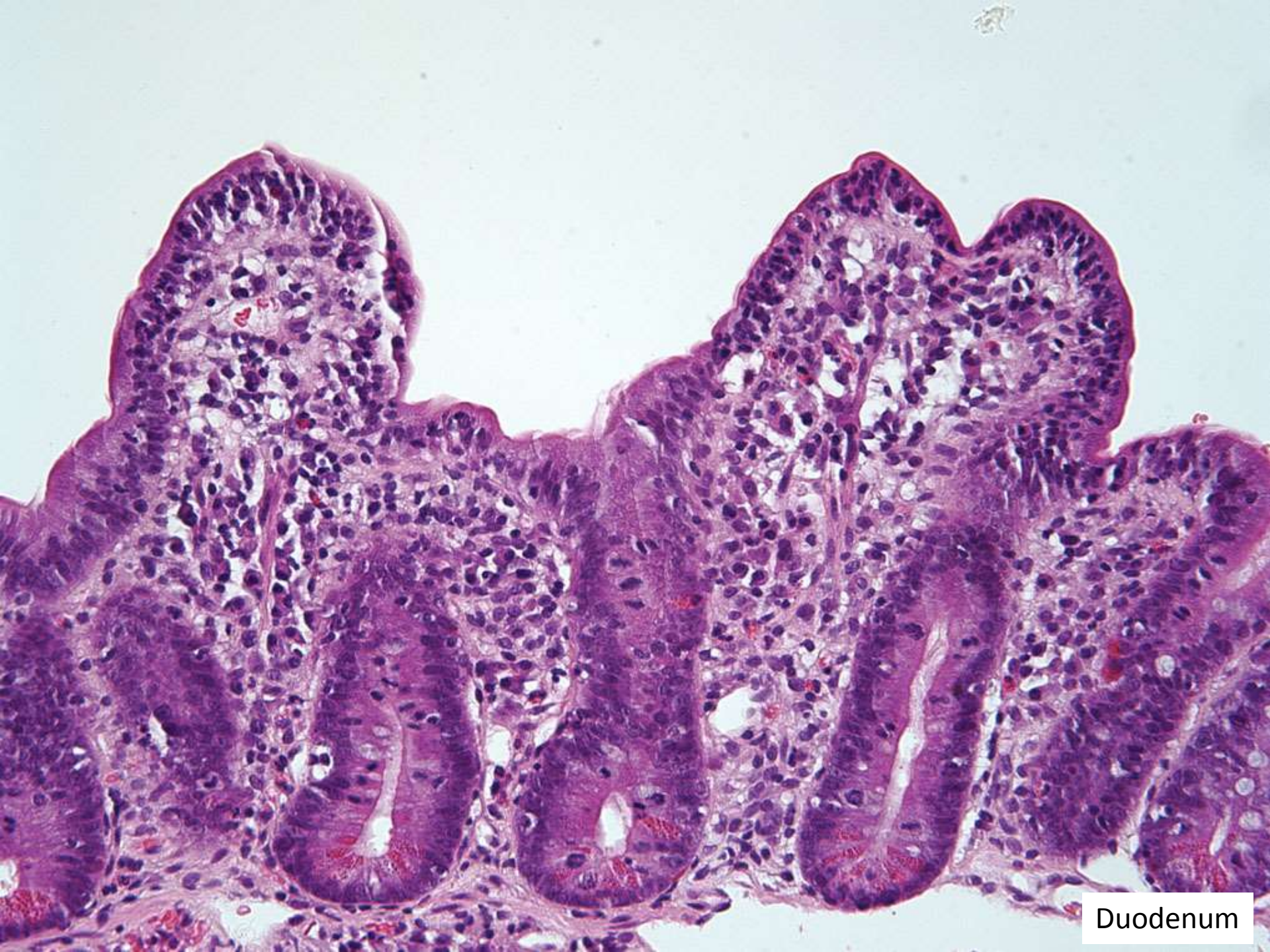
Adverse reactions include:

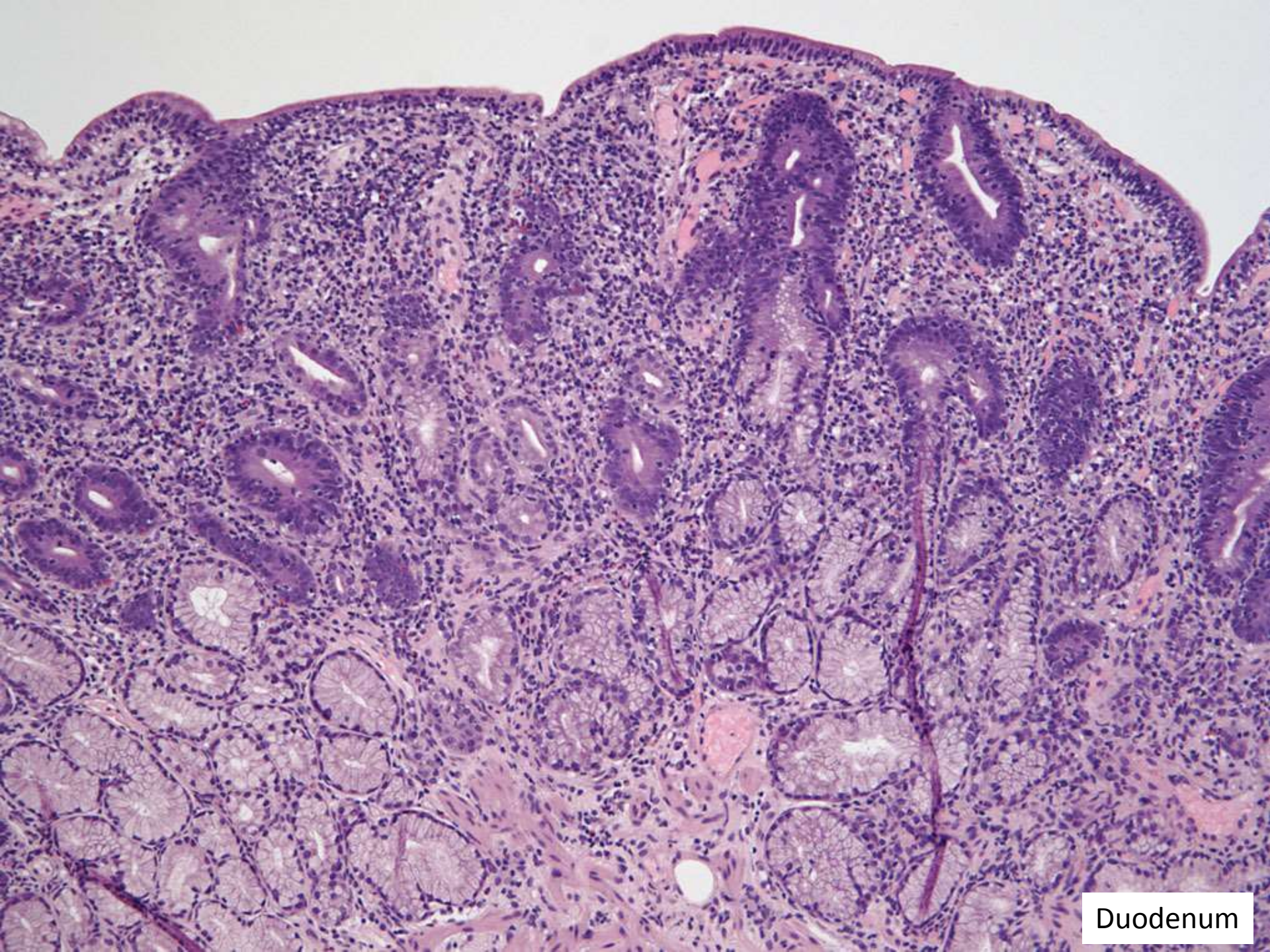
- Diarrhea
- Hepatotoxicity
- Pneumonitis
- Intestinal perforation



Small bowel histology

- Apoptosis present in all cases
- Intraepithelial lymphocytes and villous blunting also commonly seen
- Main diagnostic differential includes GVHD, celiac disease


Duodenum

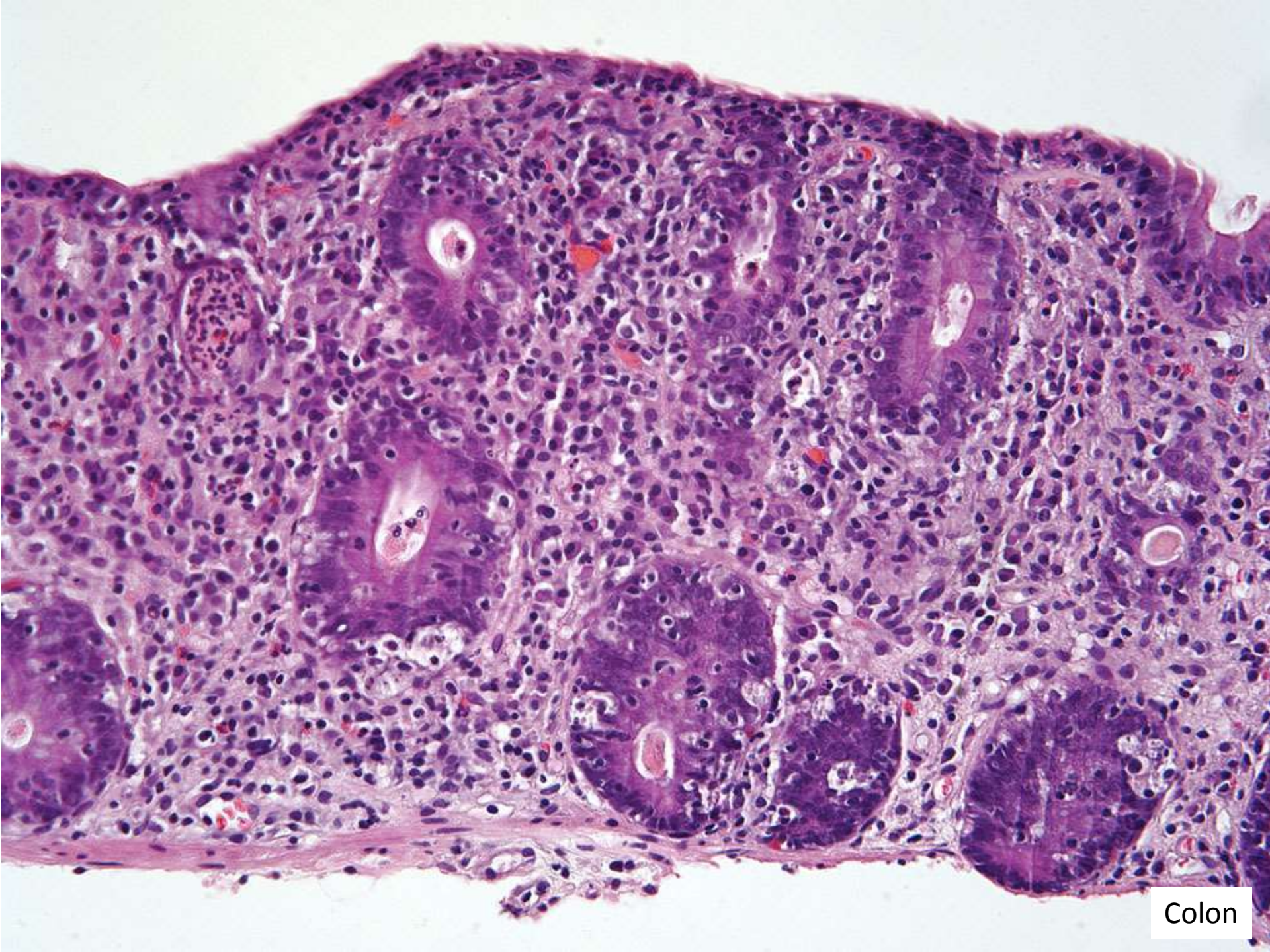

Duodenum

Colon – histologic features

Morphologic feature	N
Cryptitis	11/11
Neutrophilic crypt abscess	7/11
Increased crypt epithelial apoptosis	11/11
Exudate/erosion	1/11
Increased intraepithelial lymphocytes	8/11
Crypt architectural distortion	7/11 (mild)

Colon – histologic features

- Most cases resembled GVHD or IBD/infectious colitis
- A few cases showed prominent intraepithelial lymphocytes – resembling lymphocytic colitis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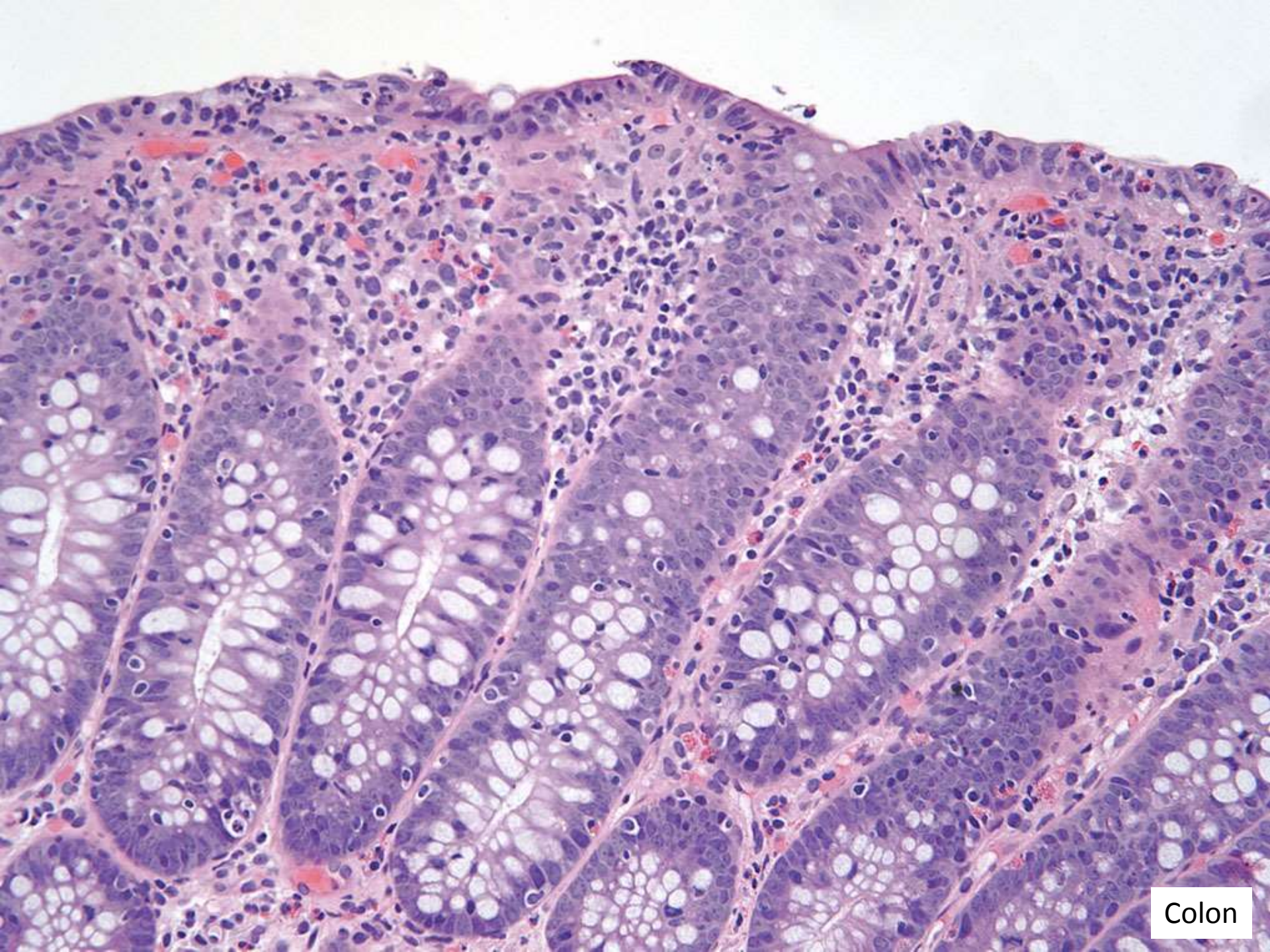
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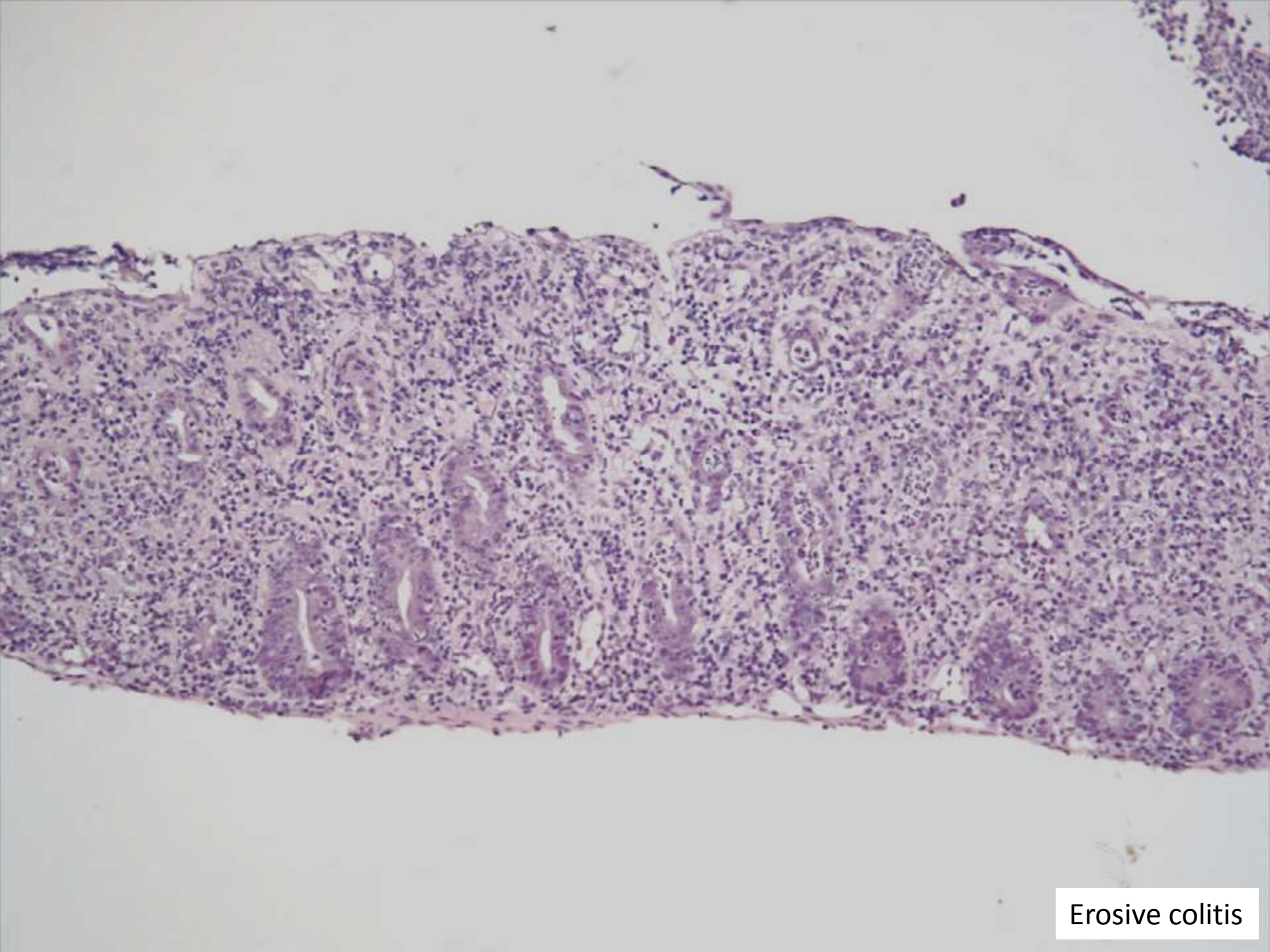


Erosive colitis

Take Home Points

- Apoptosis and cryptitis are the most common features
- Only mild architectural distortion in the colon
- Differential diagnosis/mimics may include GVHD, IBD, infection (CMV), and celiac disease

AJSP- Epub August 2015

Idelalisib-associated Enterocolitis

Clinicopathologic Features and Distinction From Other Enterocolitides

Christine Y. Louie, MD, Michael A. DiMaio, MD,* Karen E. Matsukuma, MD, PhD,†*
Steven E. Coutre, MD,‡ Gerald J. Berry, MD, and Teri A. Longacre, MD**

Idelalisib-associated Colitis

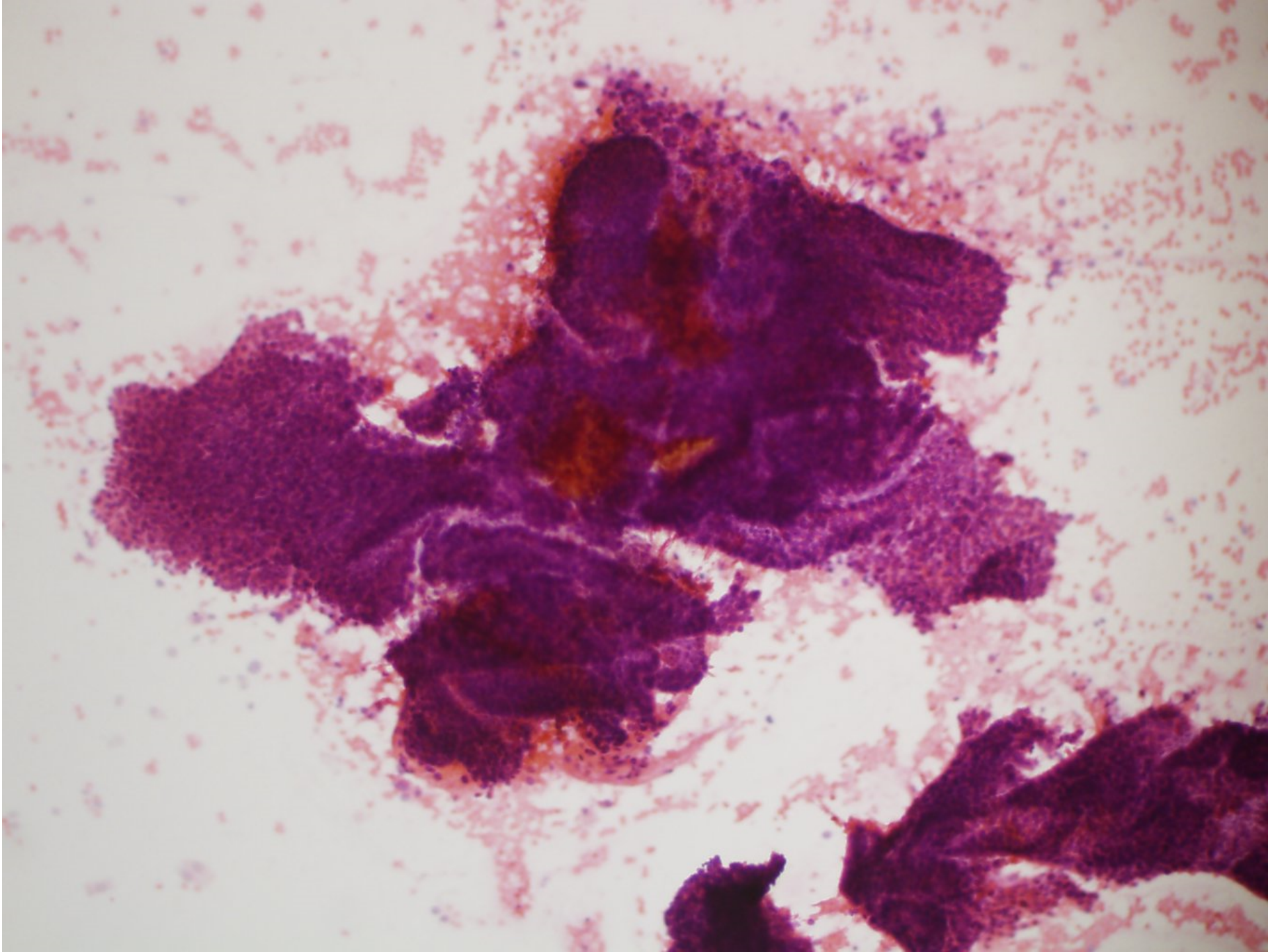
Histologic Findings in 14 Patients

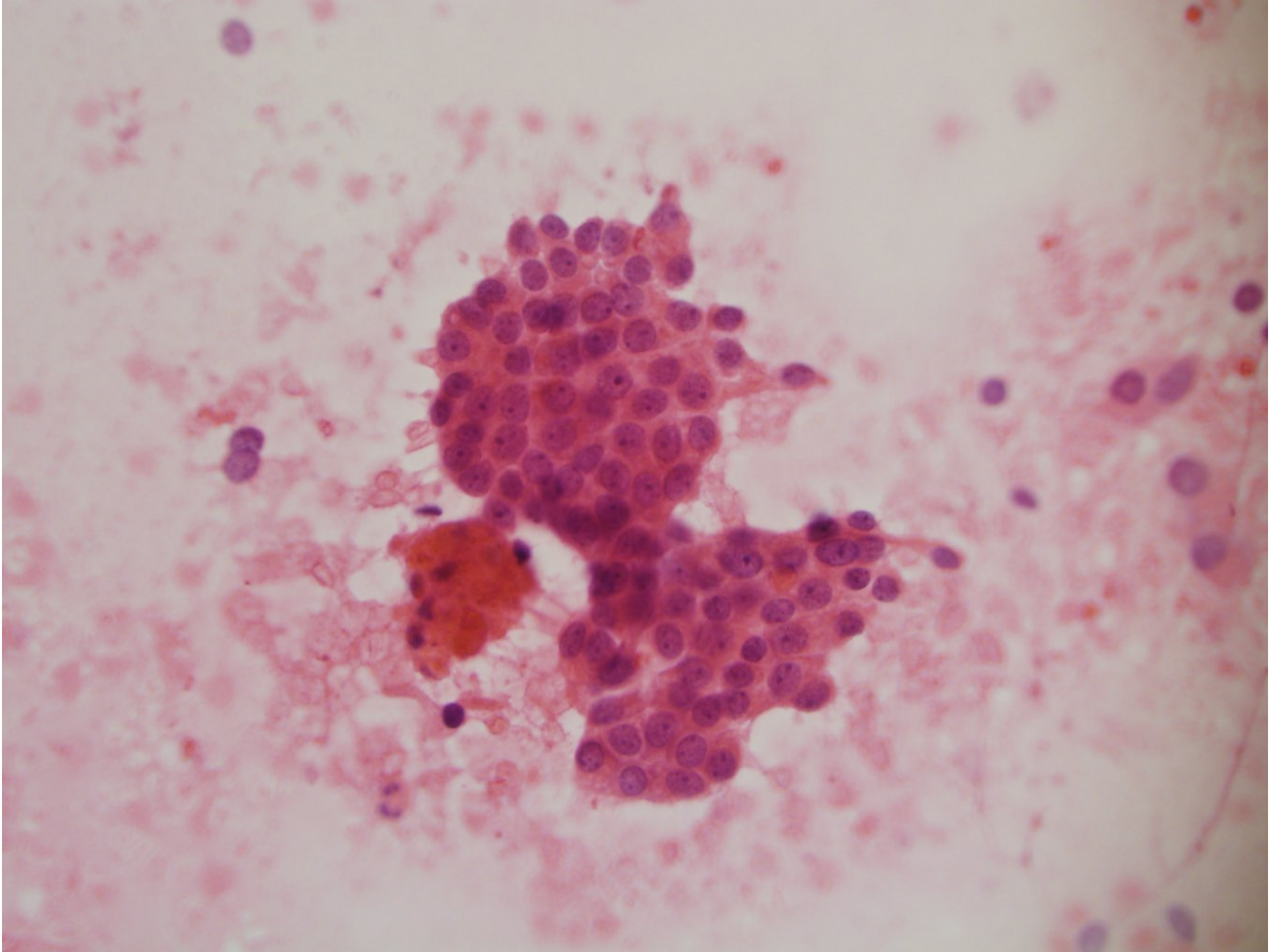
Anna-Sophie Weidner, MD, Nicole C. Panarelli, MD,* Julia T. Geyer, MD,**
*Erica B. Bhavsar, BS,† Richard R. Furman, MD,† John P. Leonard, MD,† Jose Jessurun, MD,**
*and Rhonda K. Yantiss, MD**

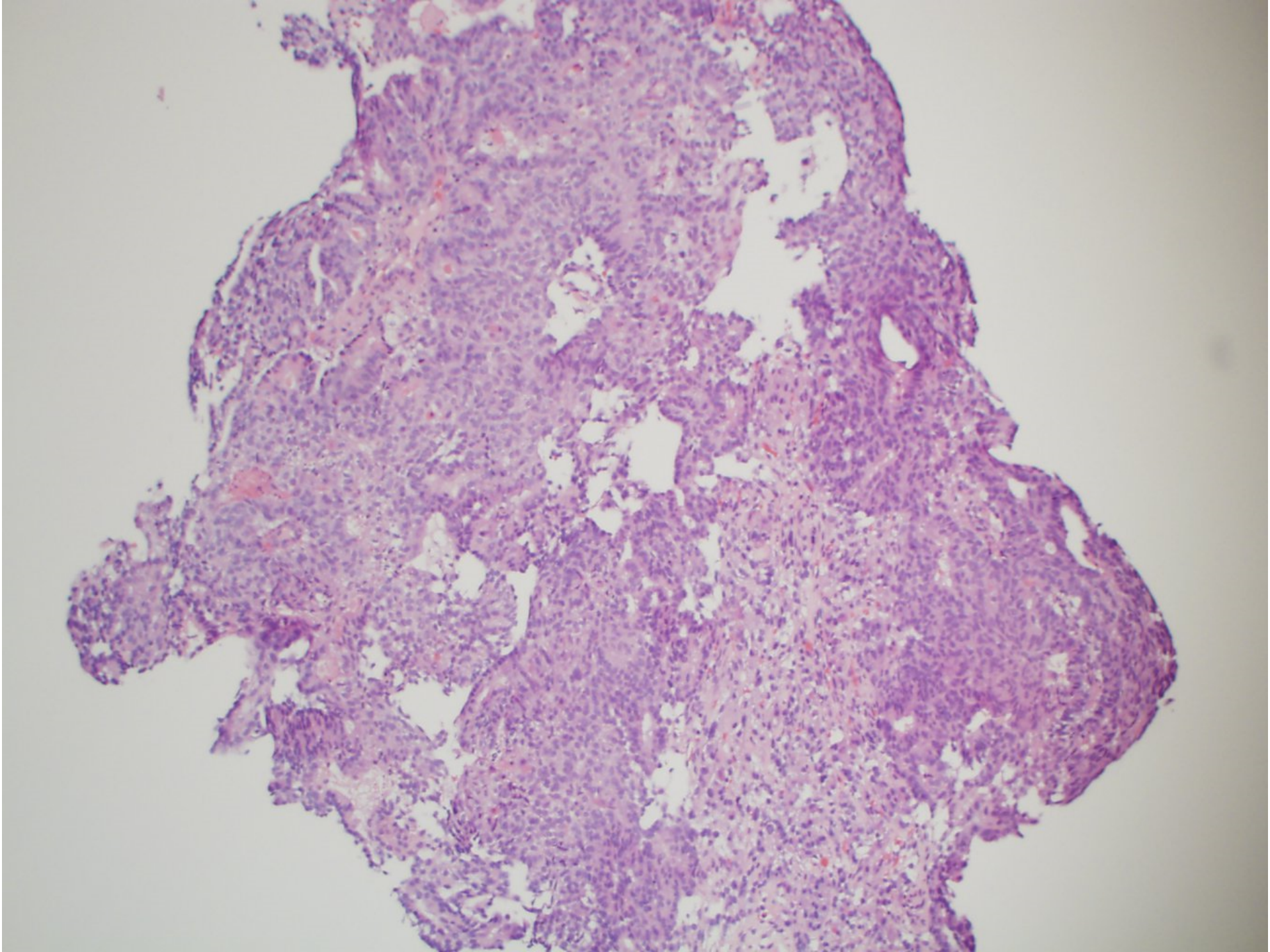
SB 5992

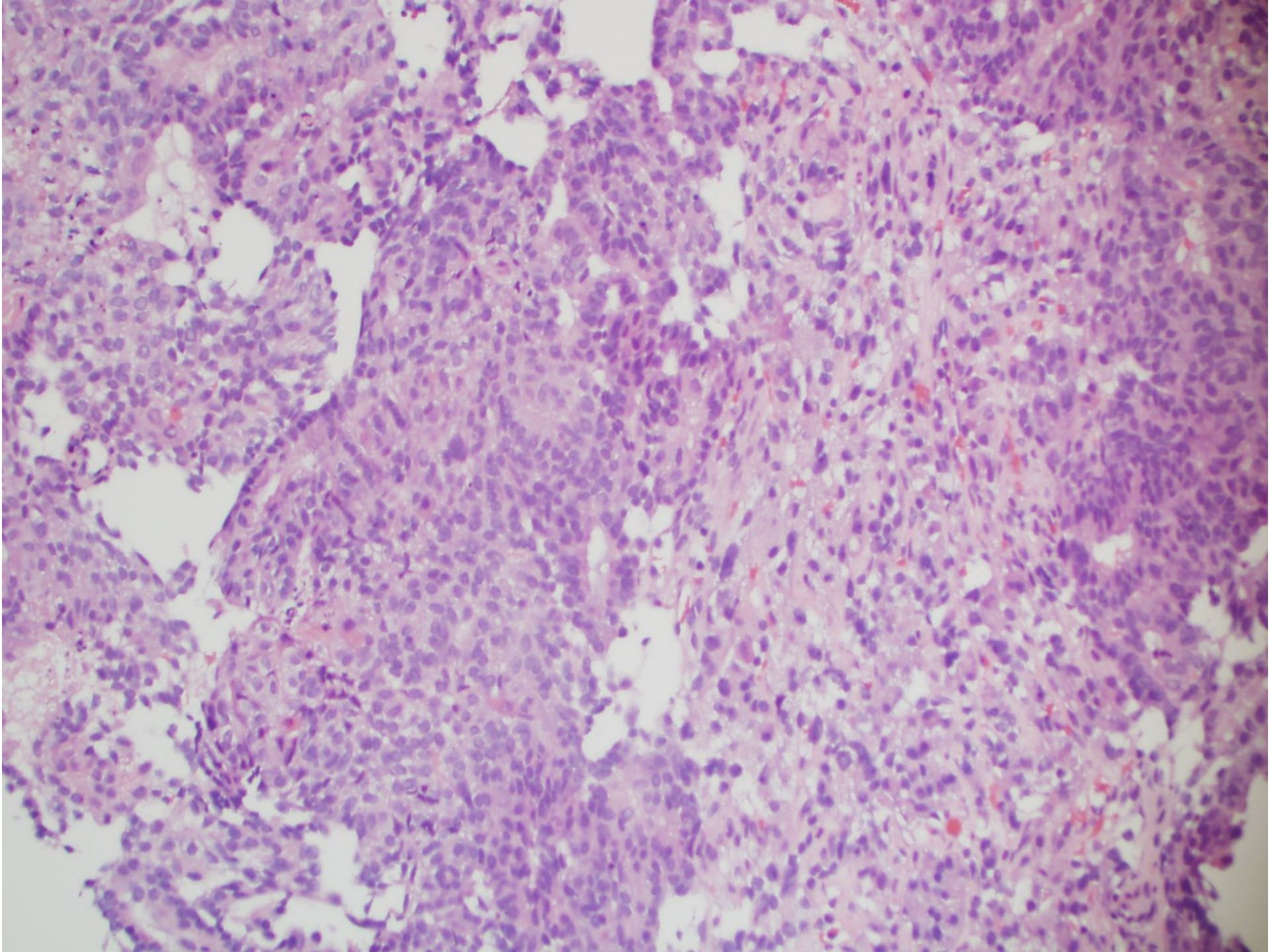
82-year-old man with a 2.1 cm sellar and suprasellar mass abutting the optic chiasm and contacting the left internal carotid artery with possible sinus infiltration. The radiologist's impression is that the lesion was most consistent with pituitary macroadenoma. Intraoperative diagnosis was adenoma by cytologic preparation. Initial immunohistochemical work up reveals a synaptophysin negative neoplasm.

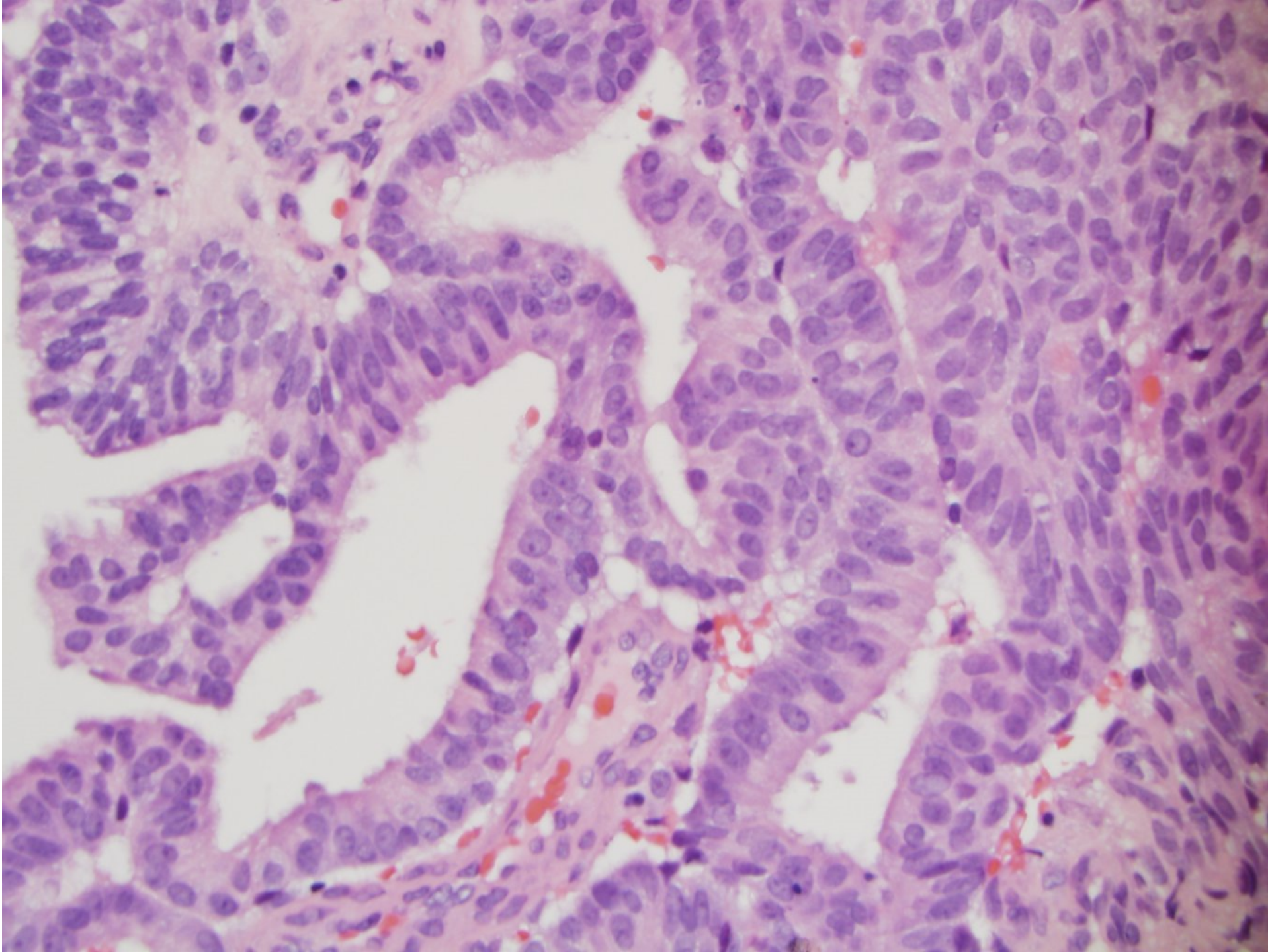
Peyman Samghabadi/Hannes Vogel/Donald Born; Stanford

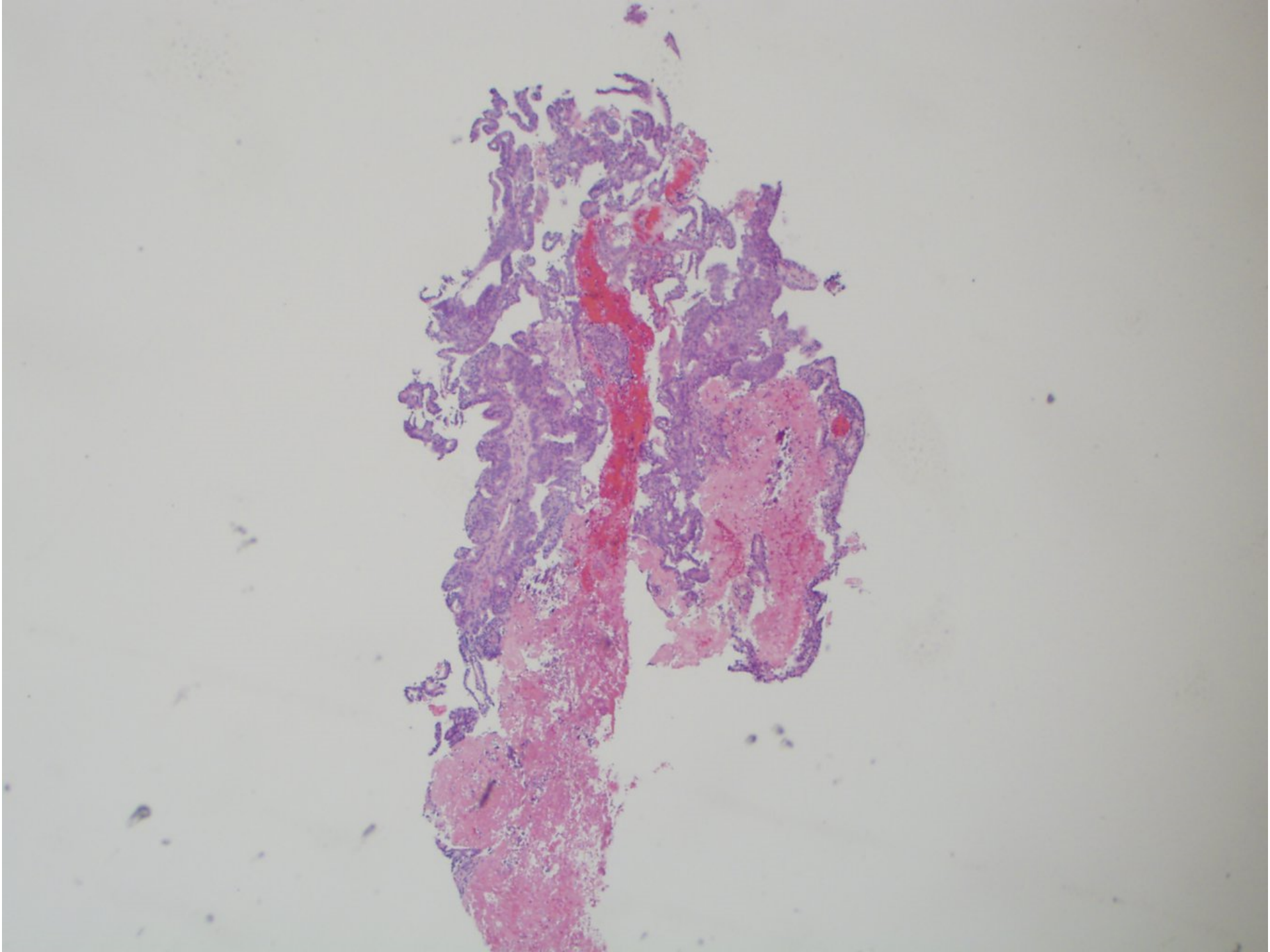


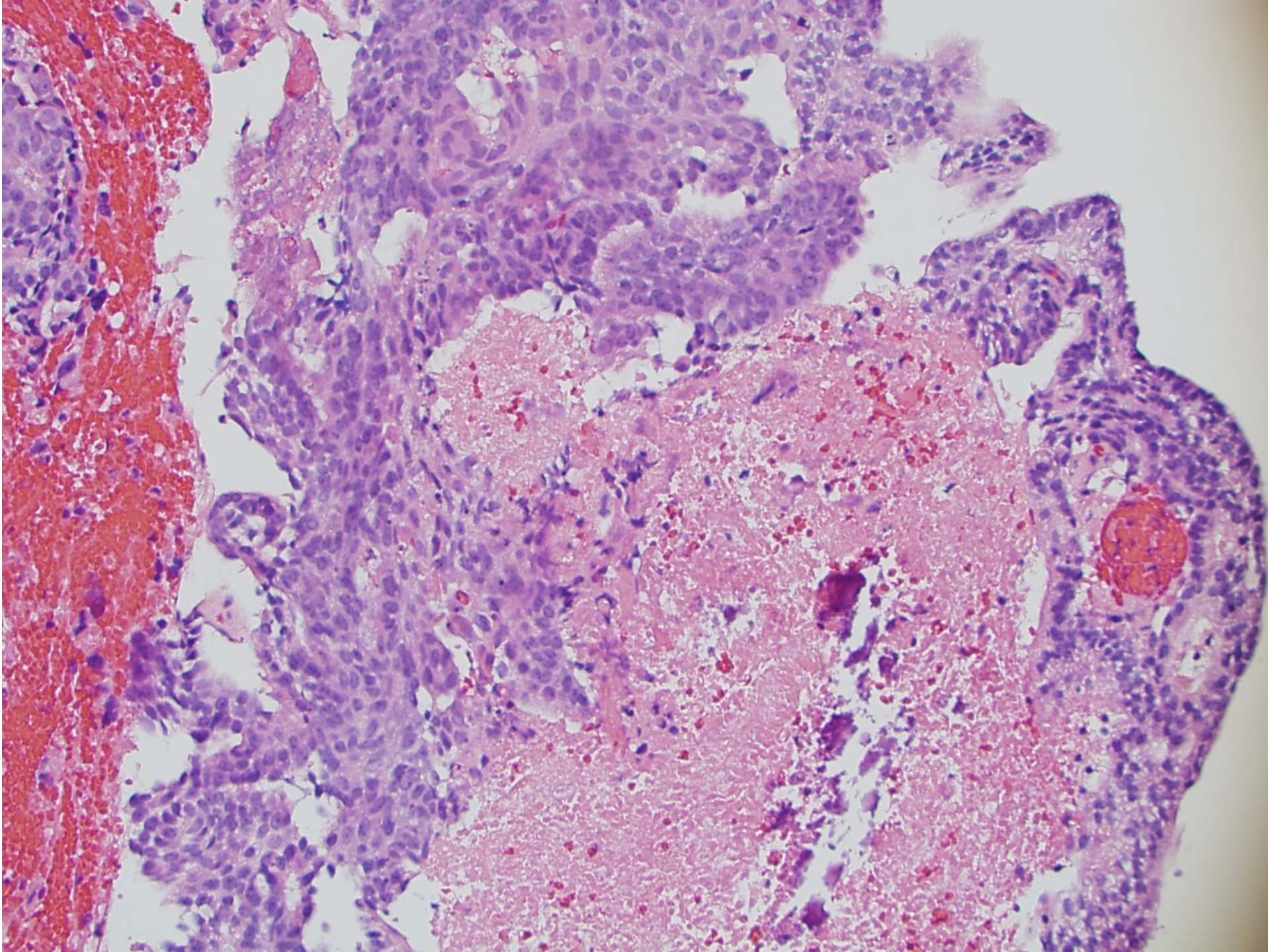


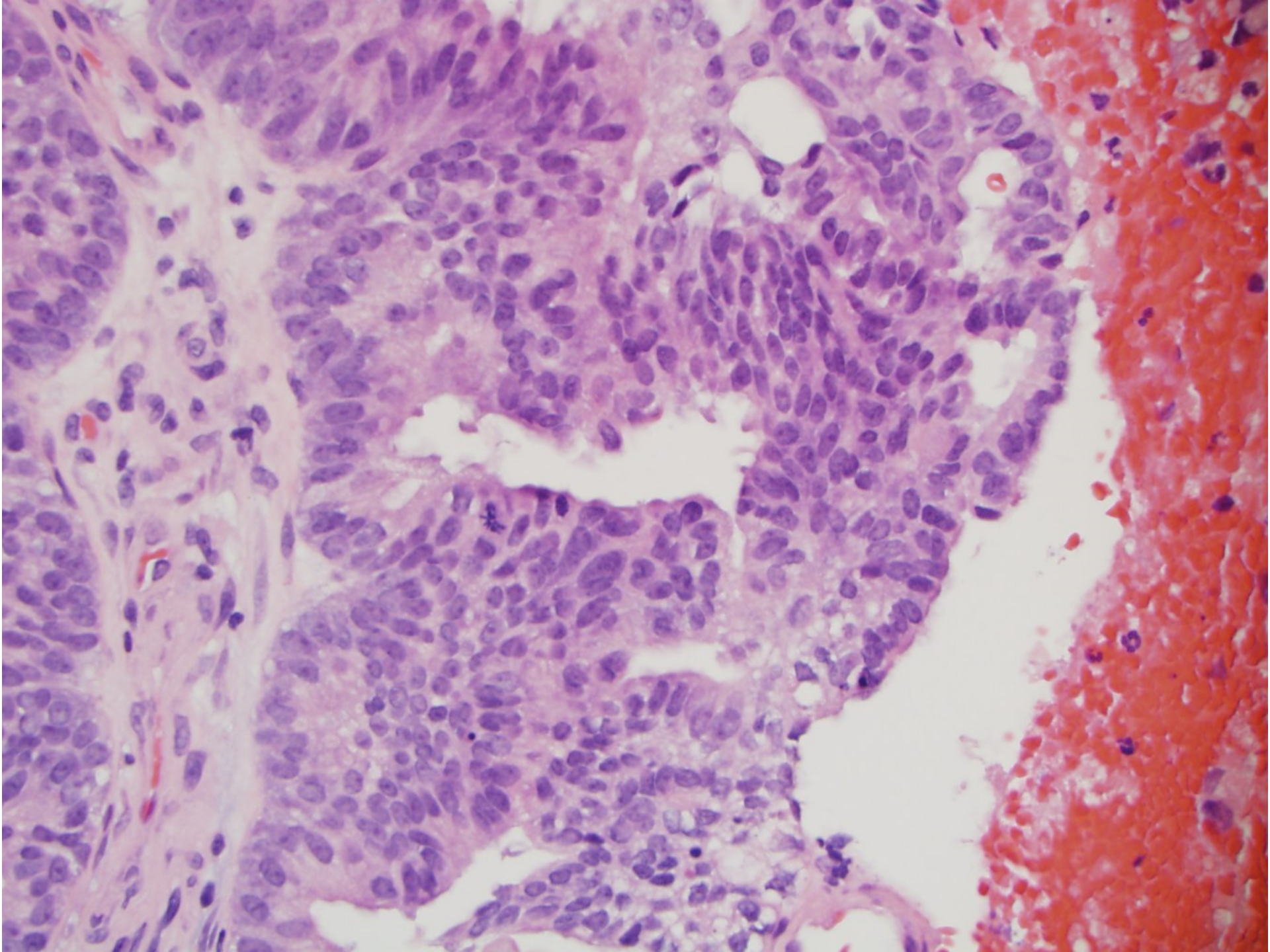












DIAGNOSIS?

Clinical History

82 year old man with a multi week history of worsening double vision

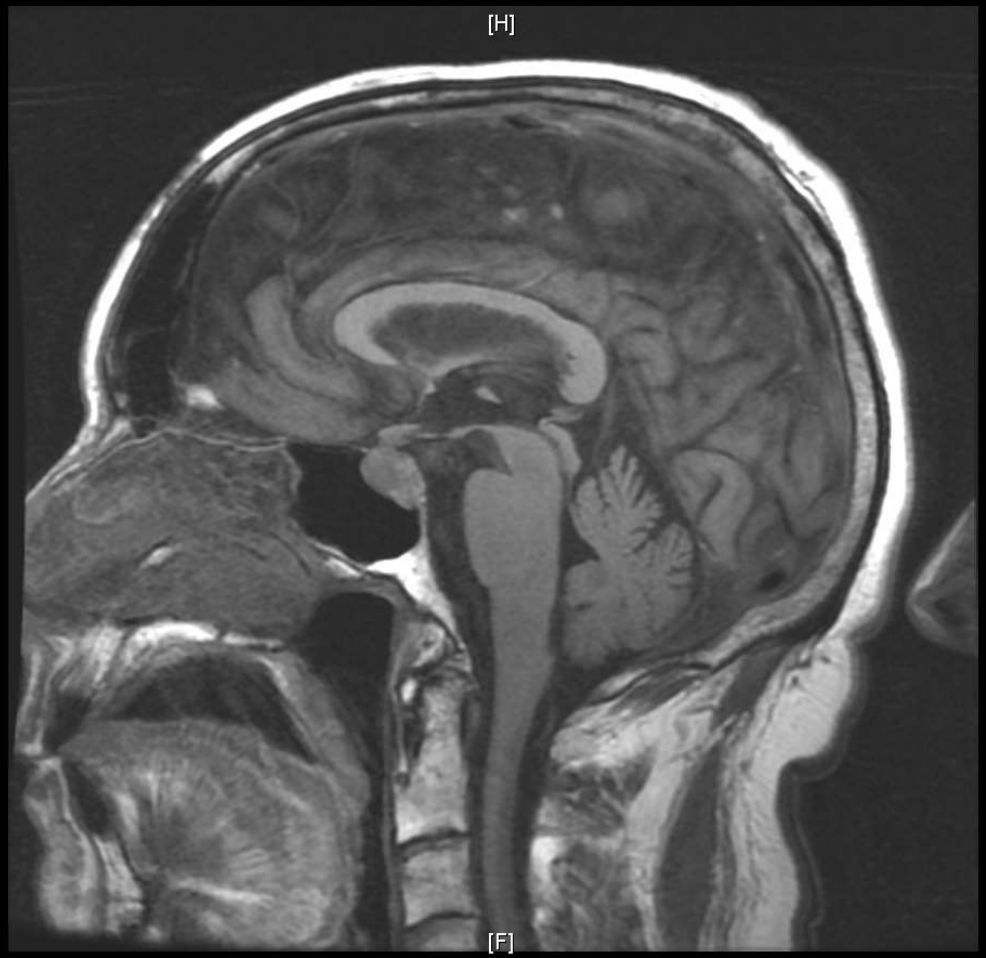
Left frontal headache and a left droopy eye.

Decrease energy level in the last several months.

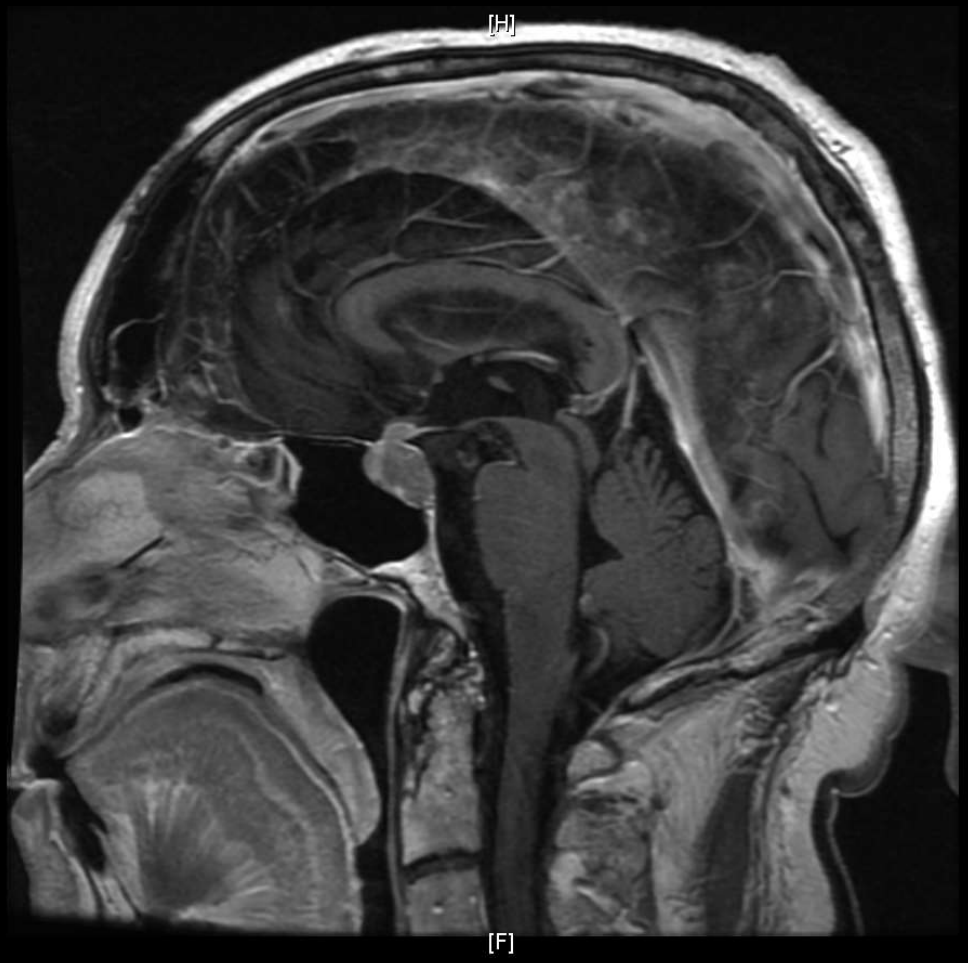
Low libido and sexual function for 25 years.

Denies heat/cold intolerance, weight loss/gain, change in shoe or hand size

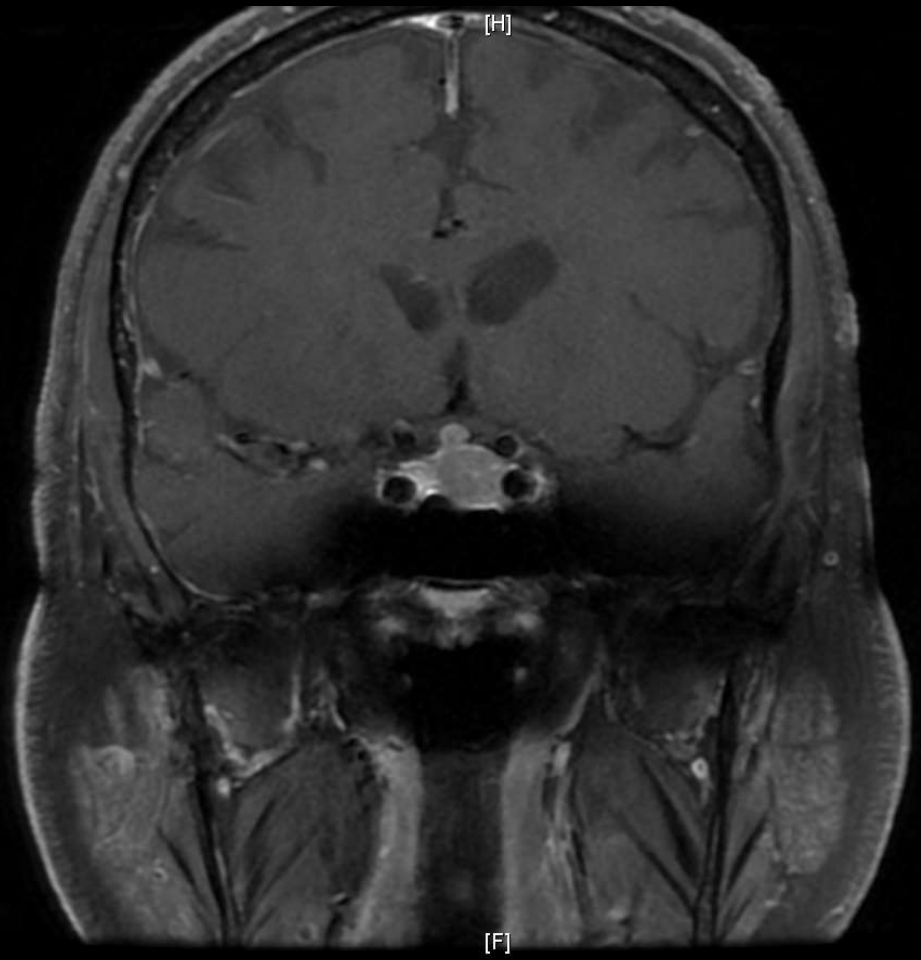
T1 FLAIR

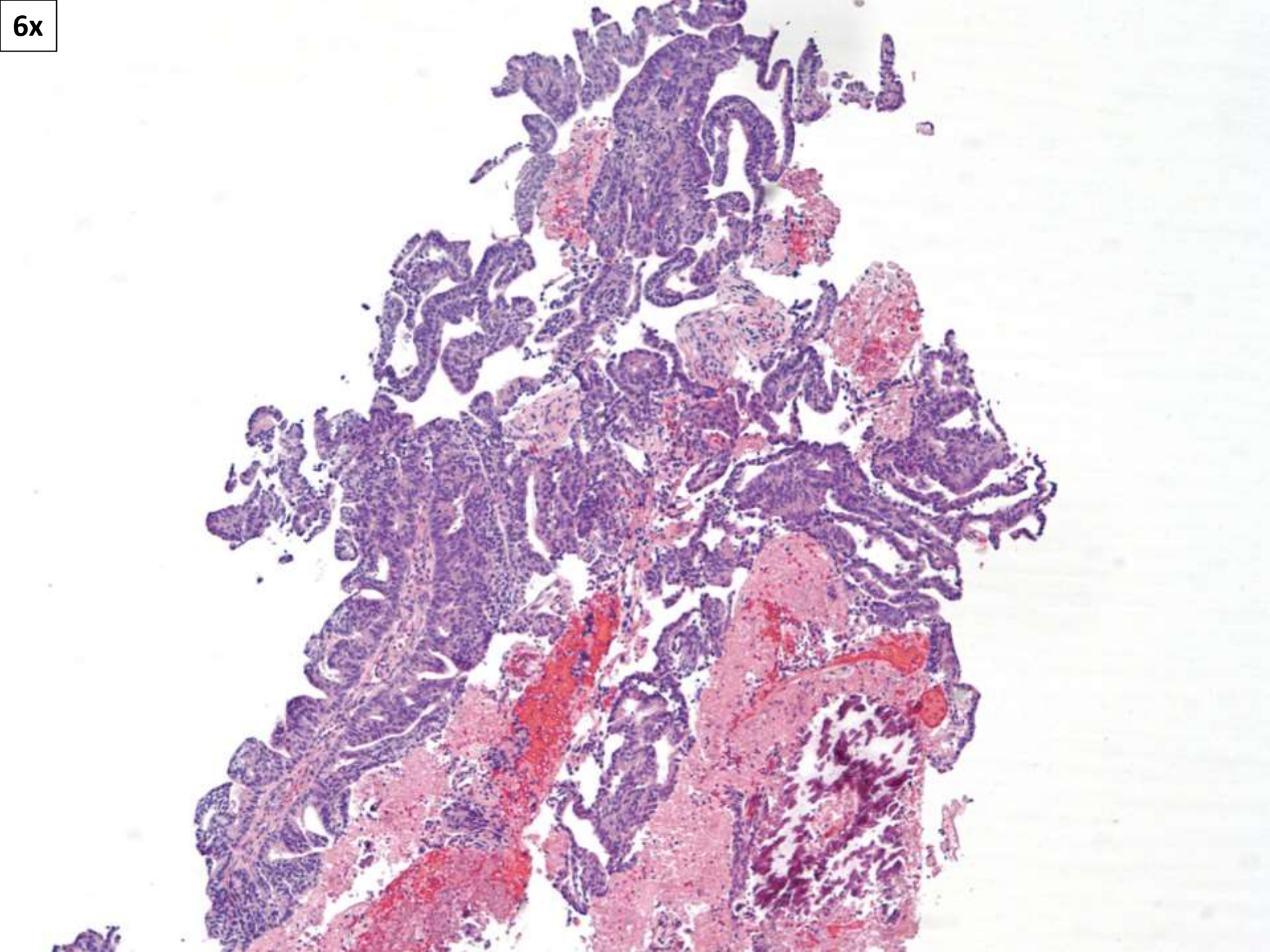


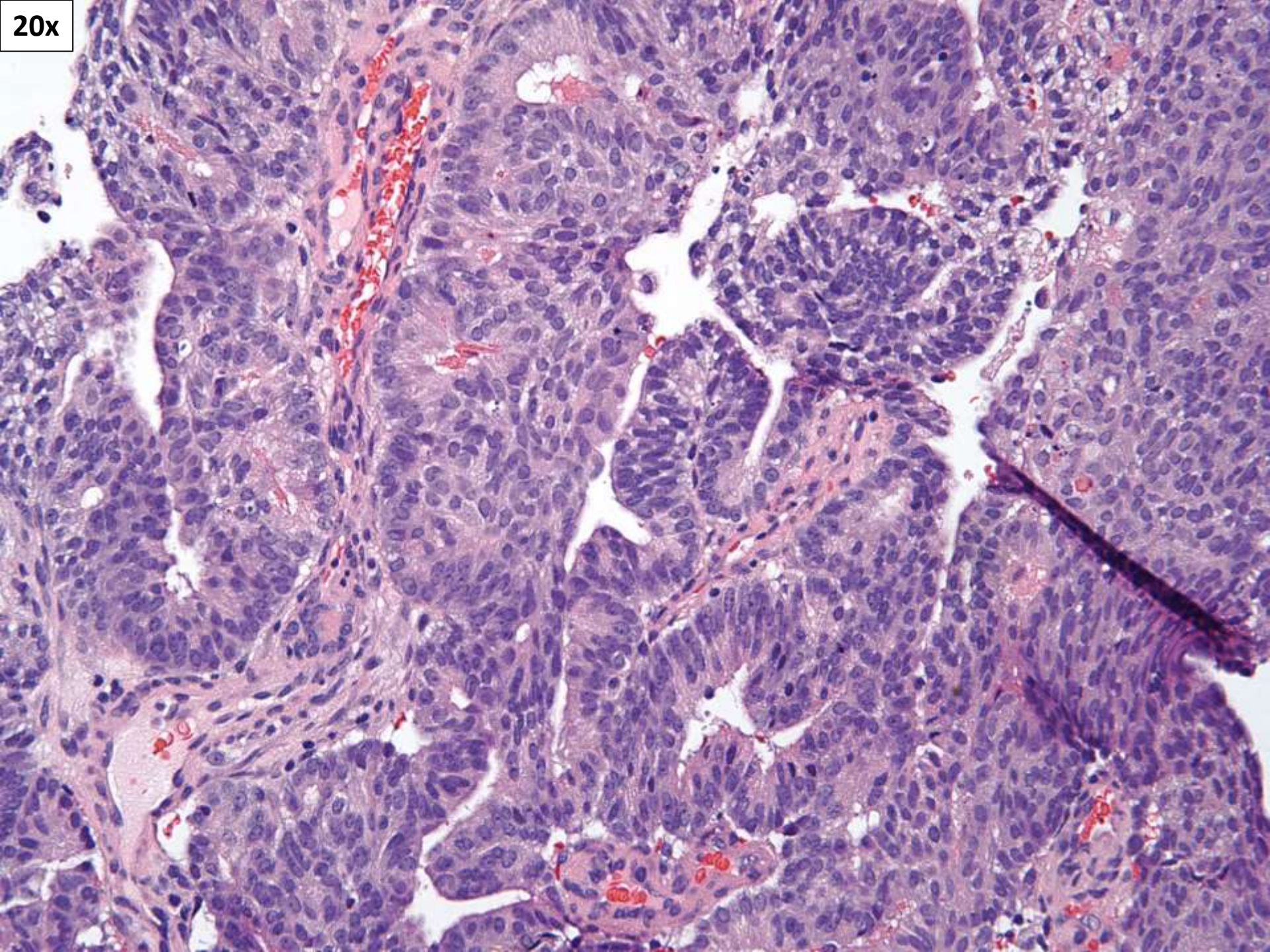
T1 with contrast

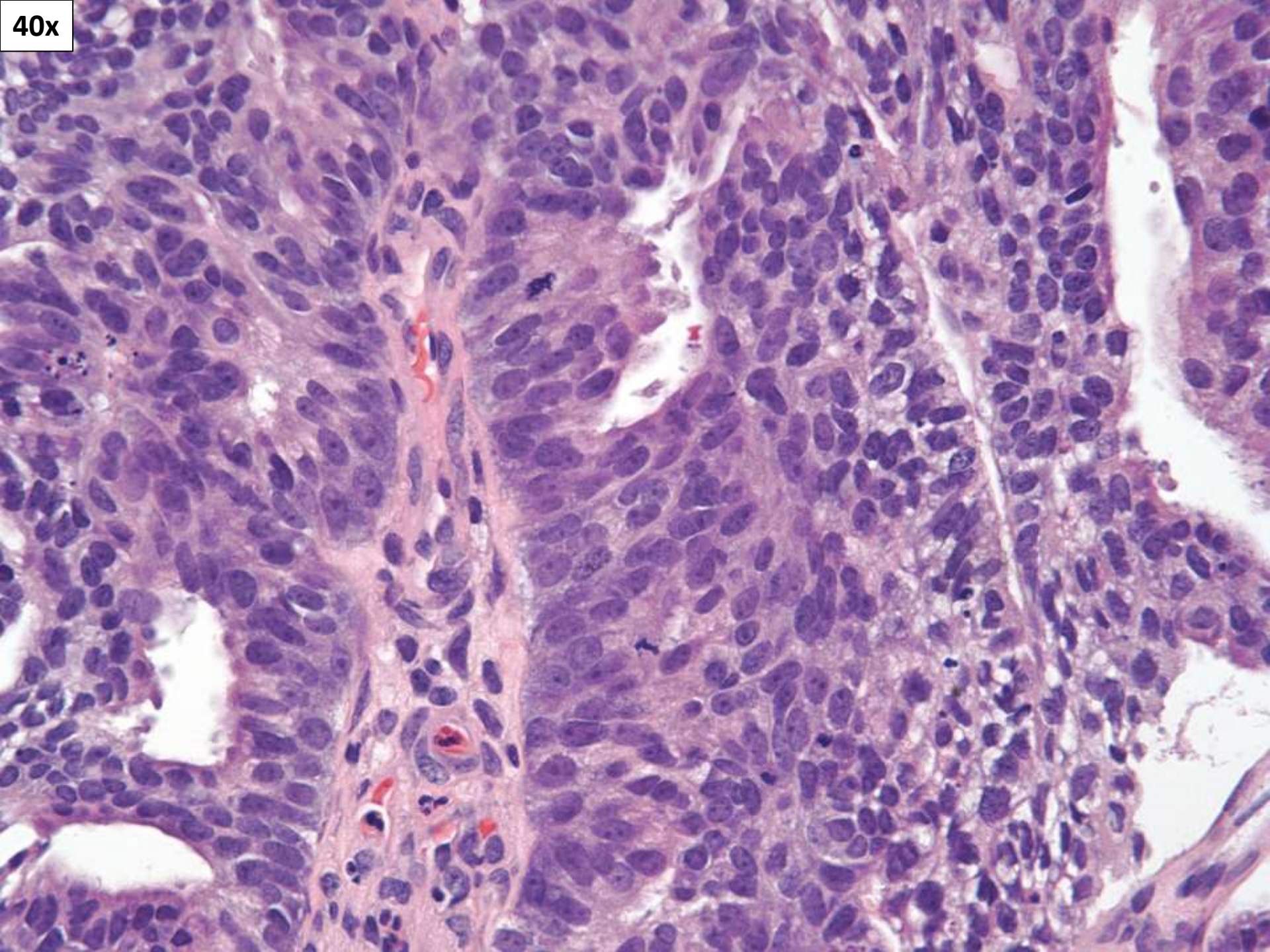


T1 with contrast




6x


20x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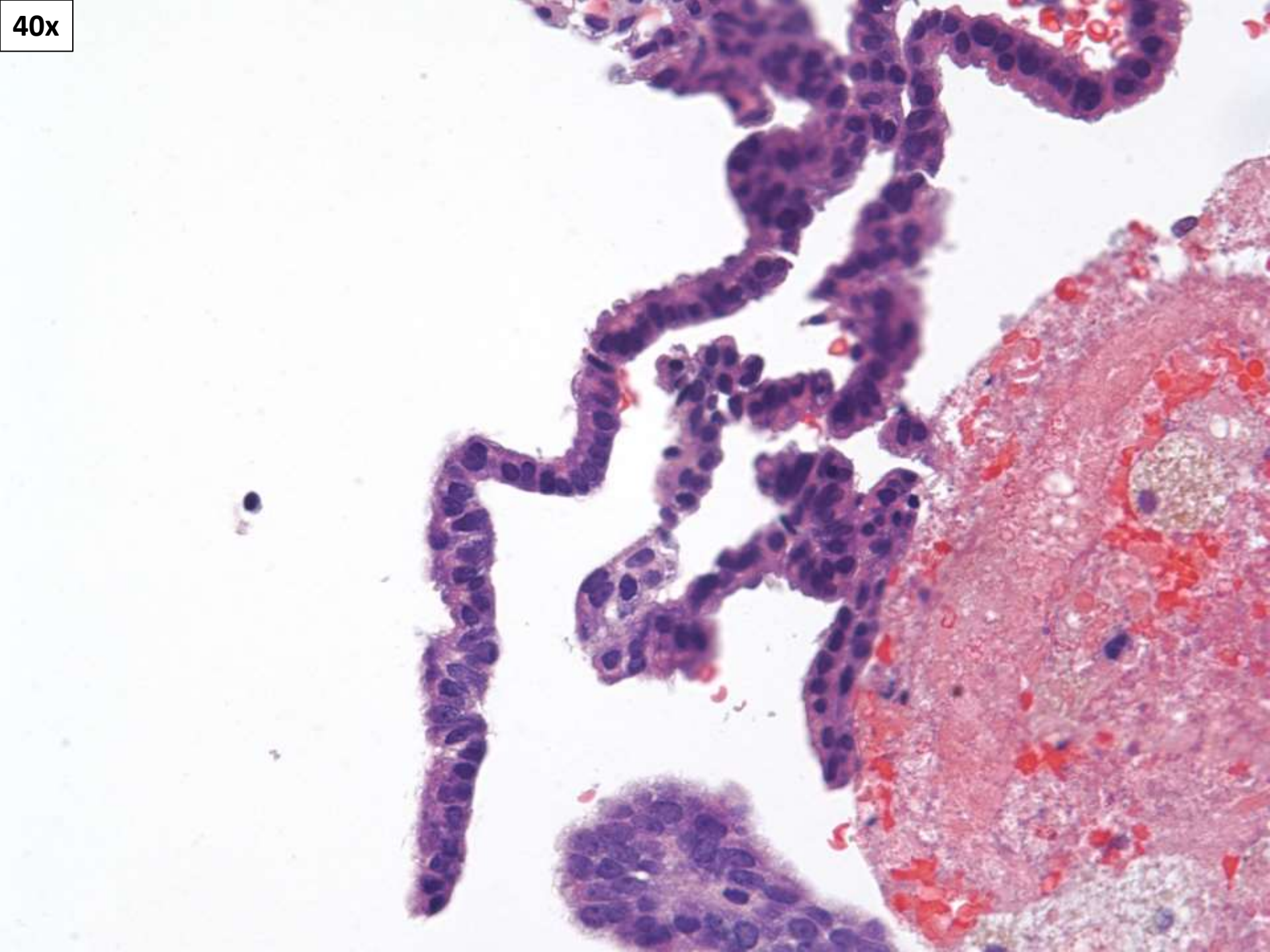
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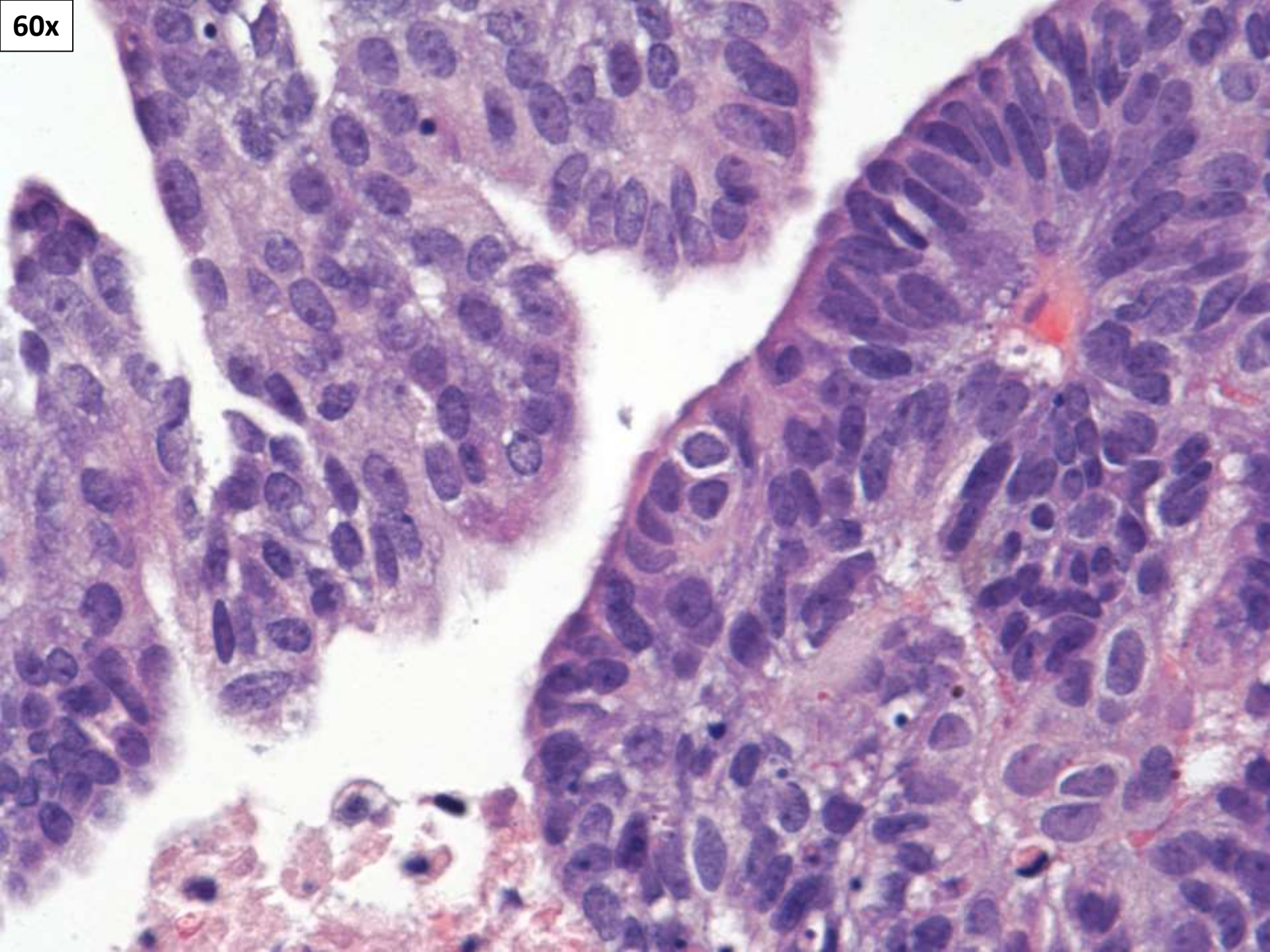
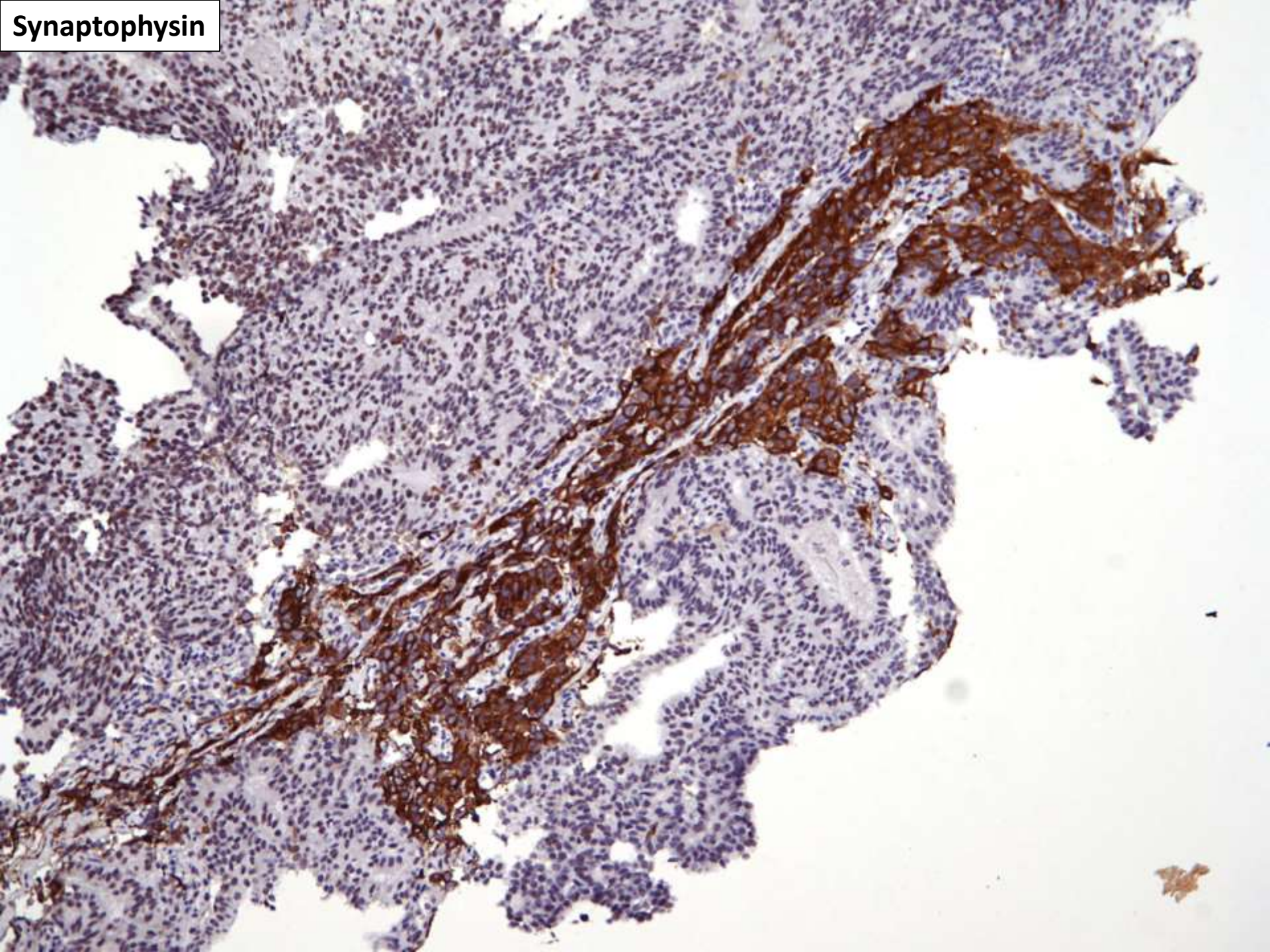
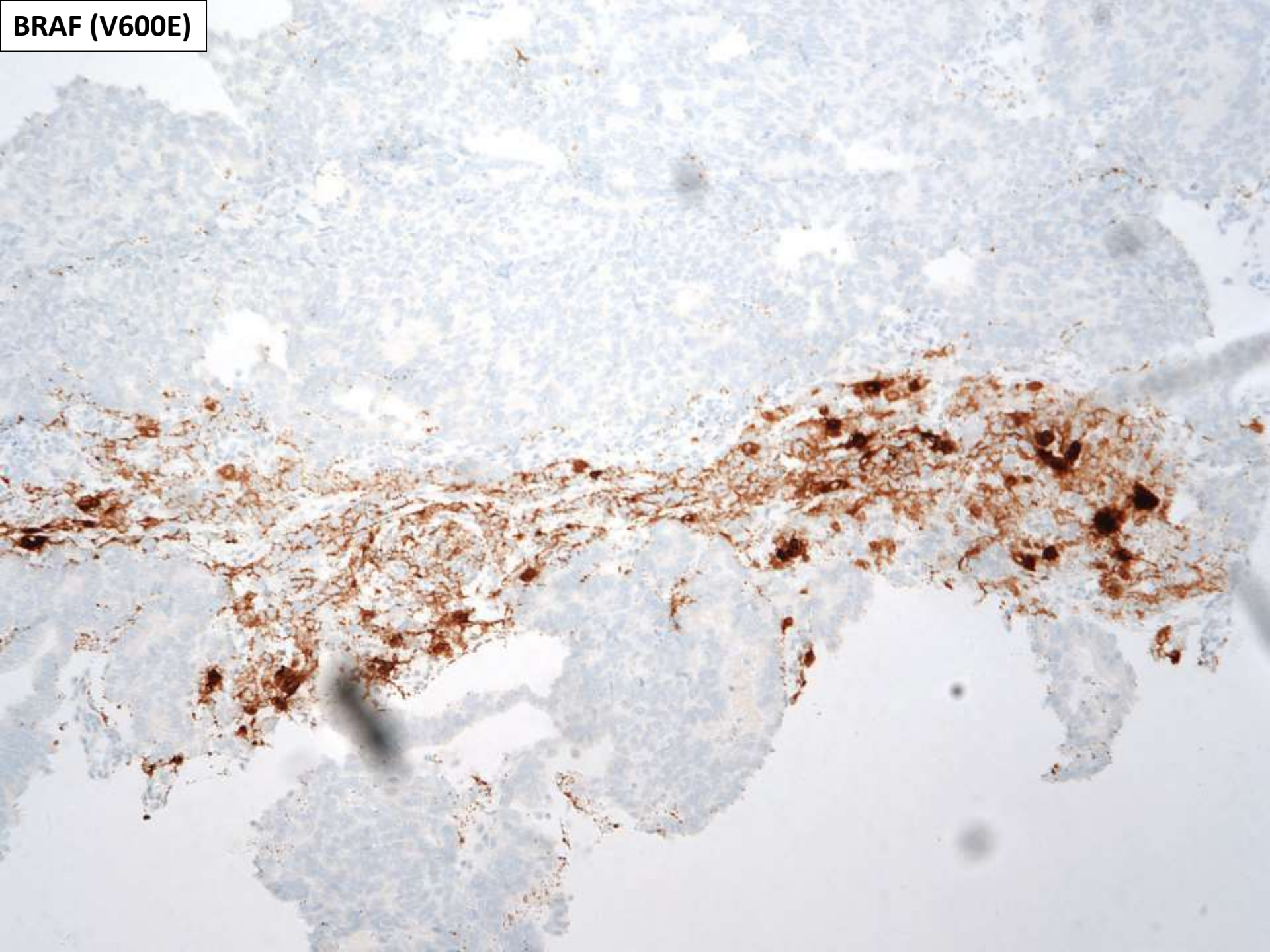
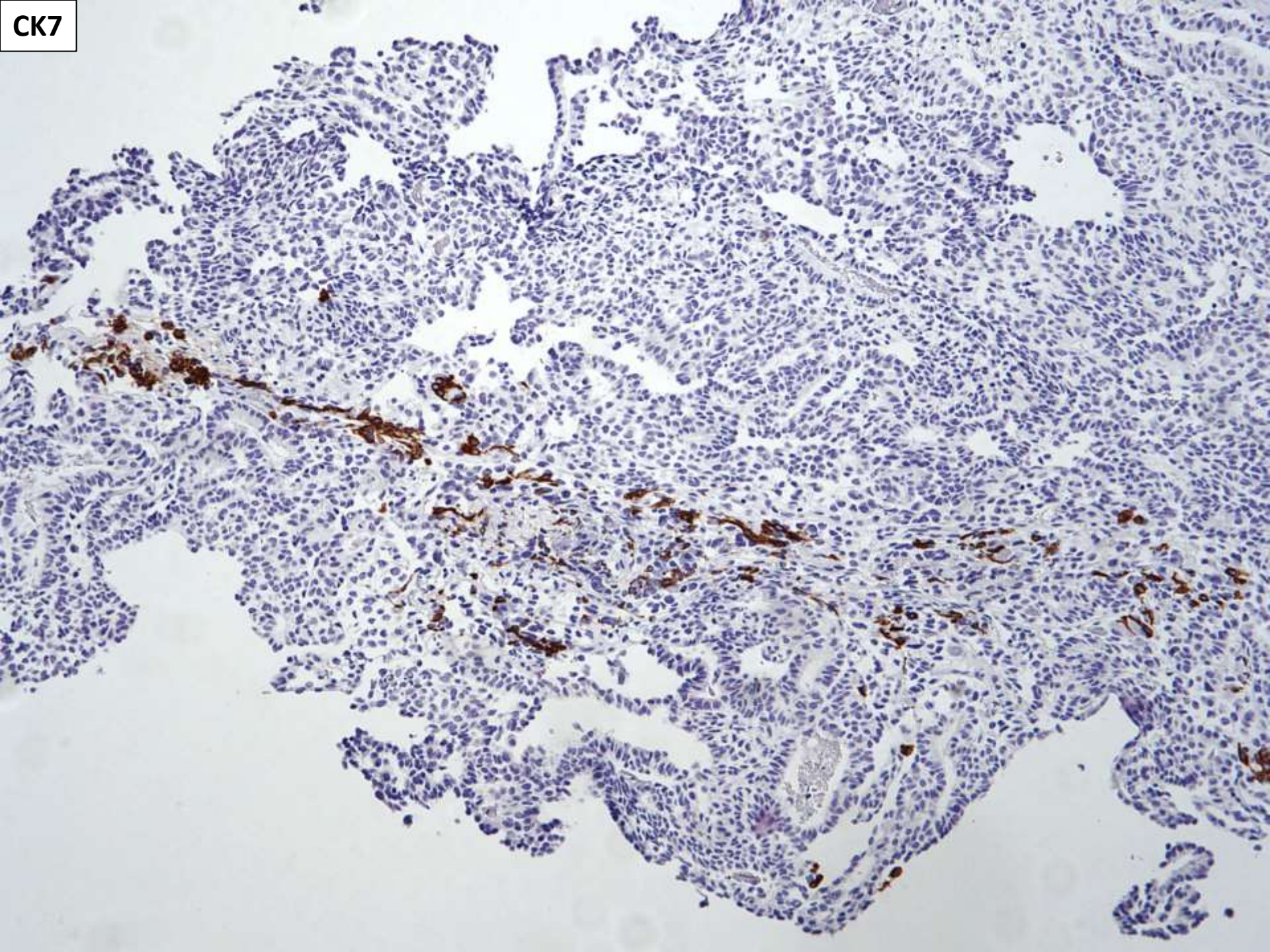
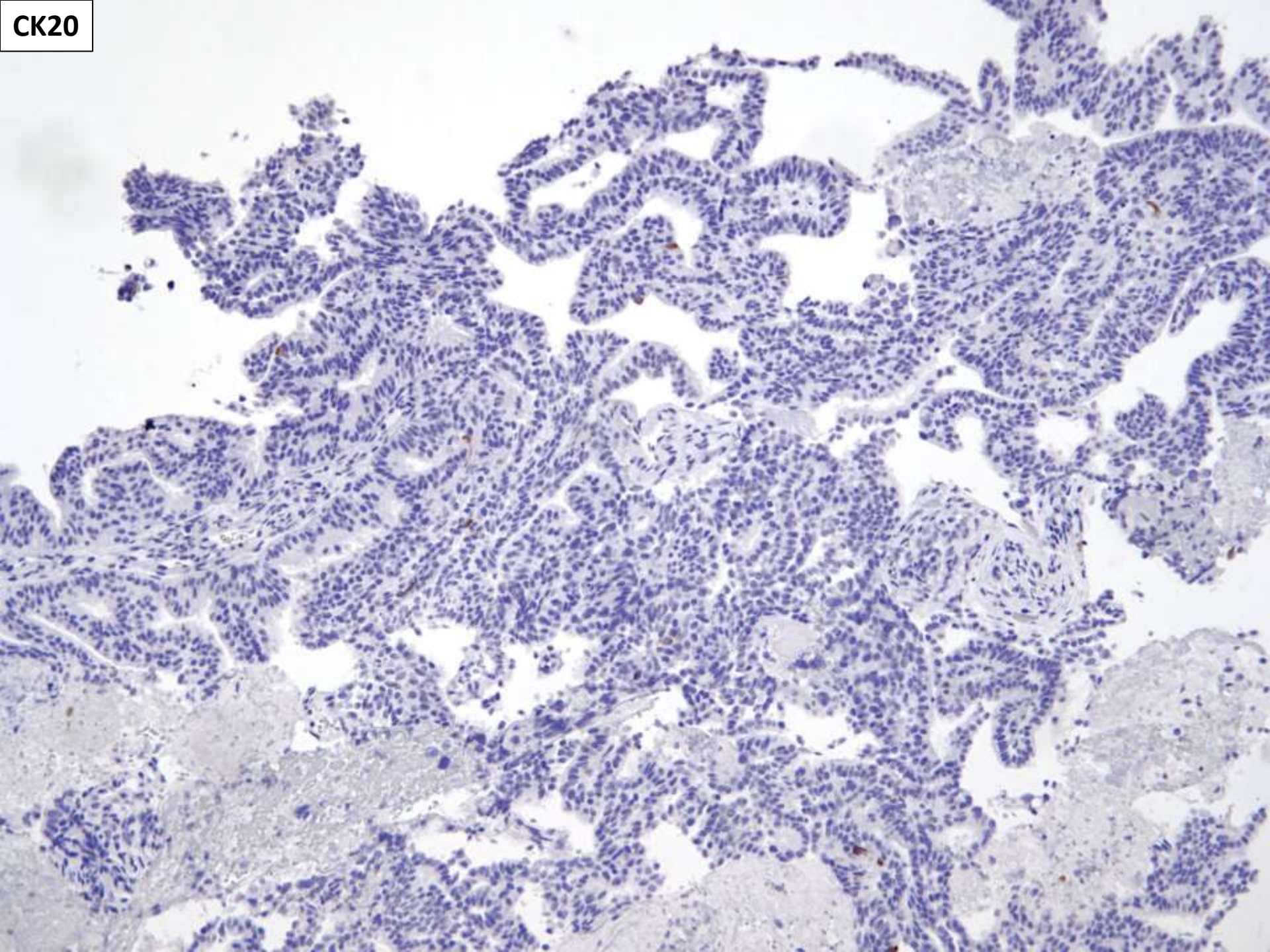
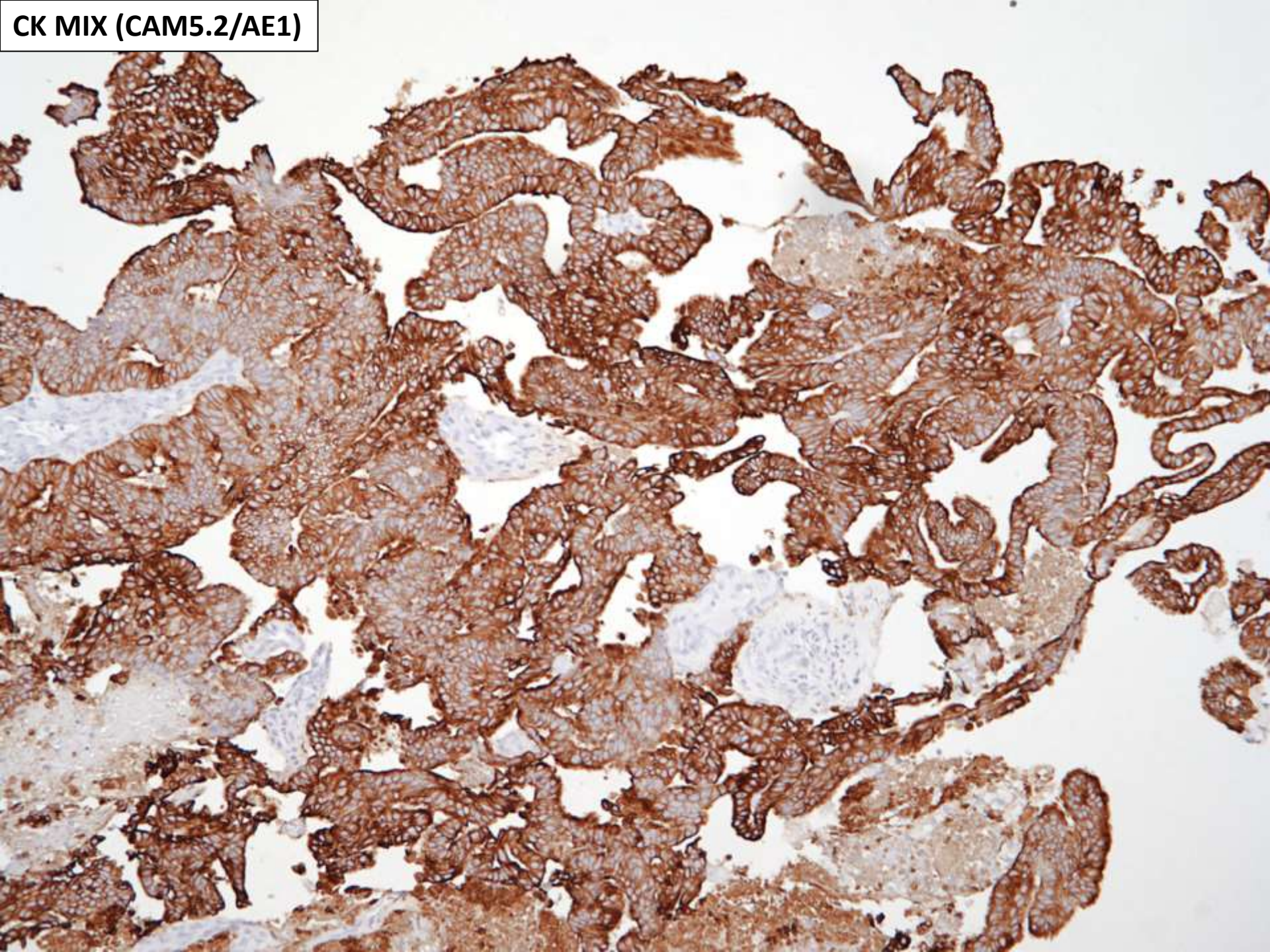

60x


Synaptophysin

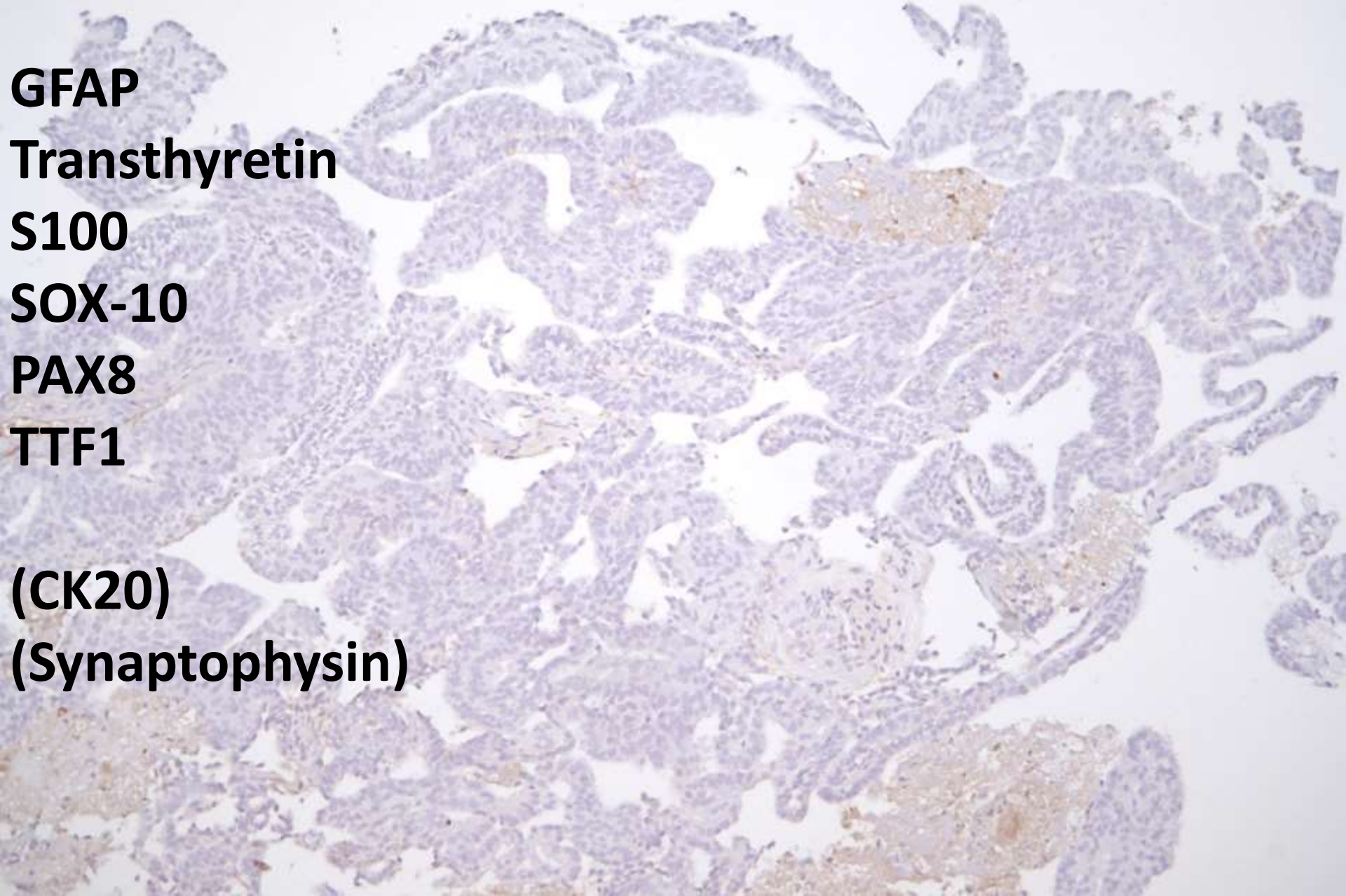

BRAF (V600E)


CK7


CK20

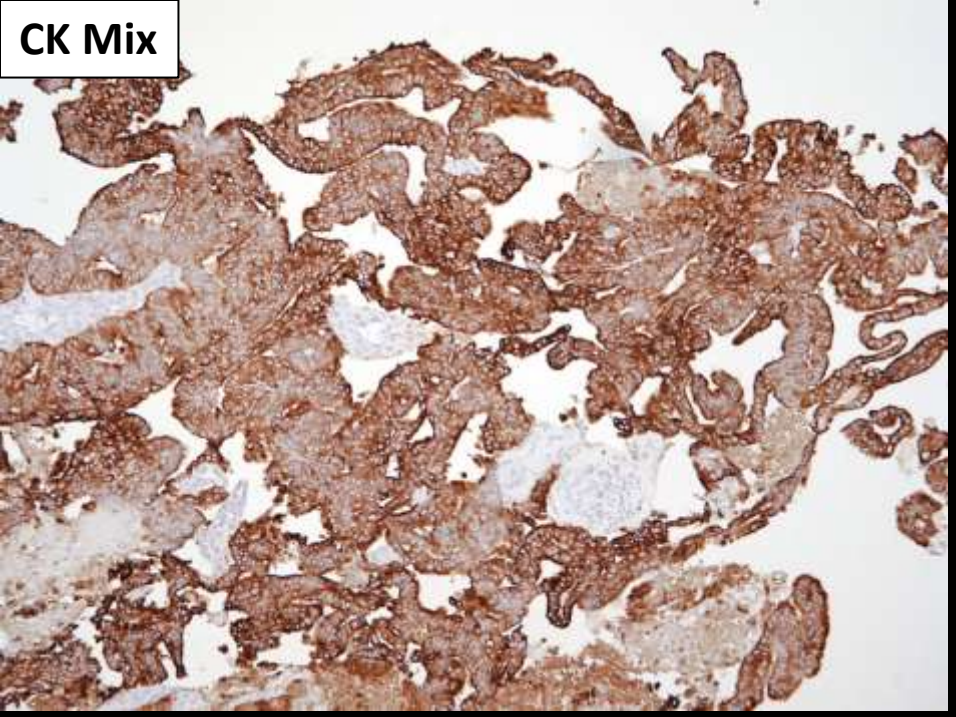

CK MIX (CAM5.2/AE1)

ADDITIONAL NEGATIVE STUDIES



GFAP
Transthyretin
S100
SOX-10
PAX8
TTF1

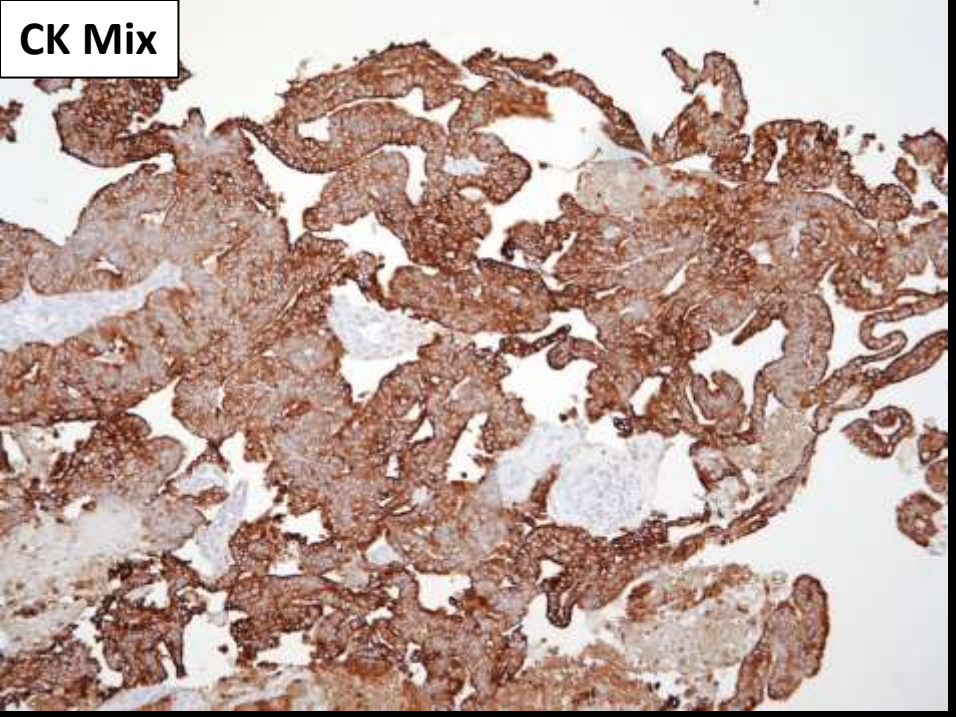
(CK20)
(Synaptophysin)


CK Mix

?

?

?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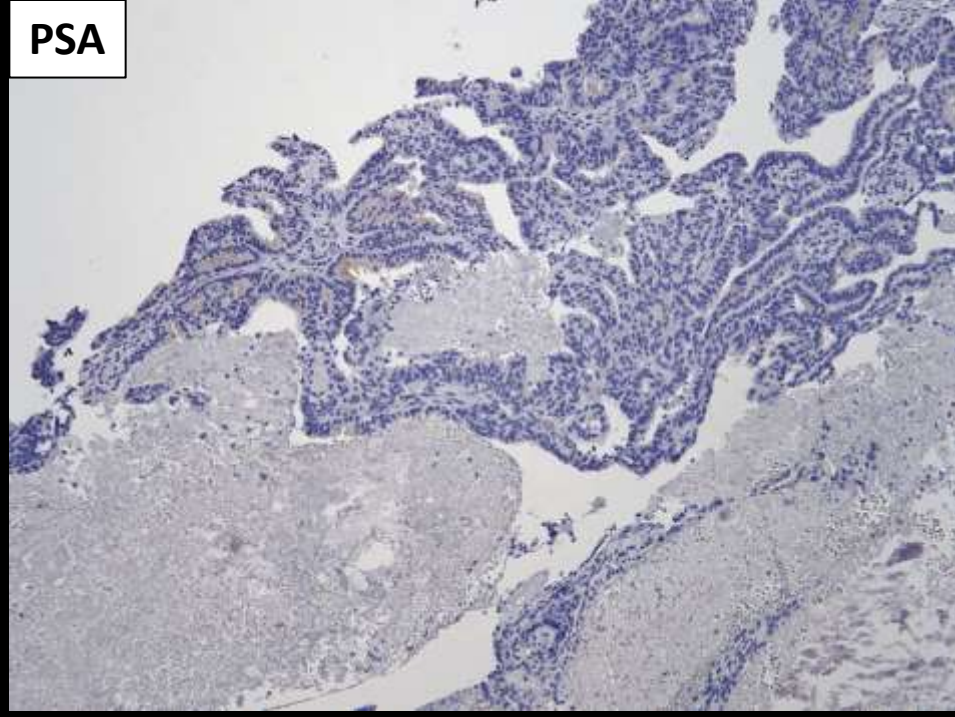
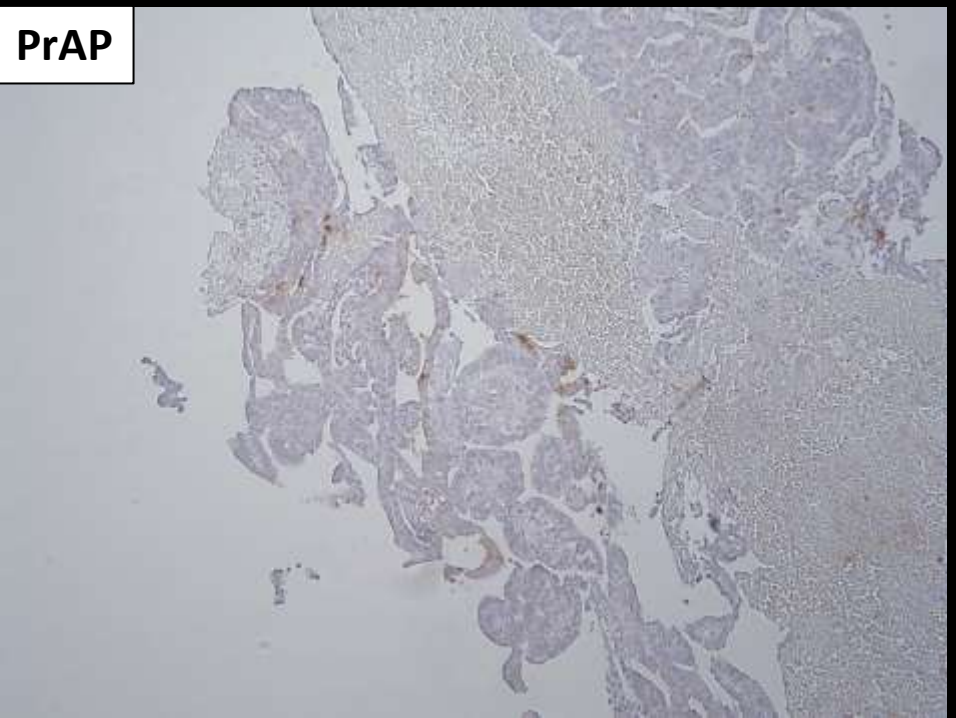
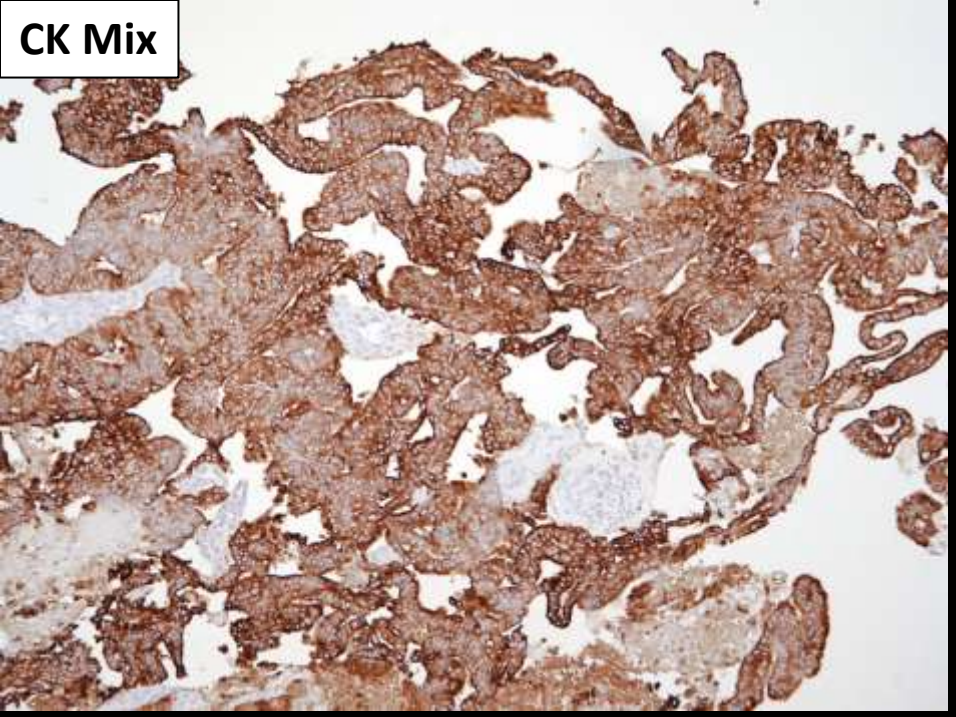
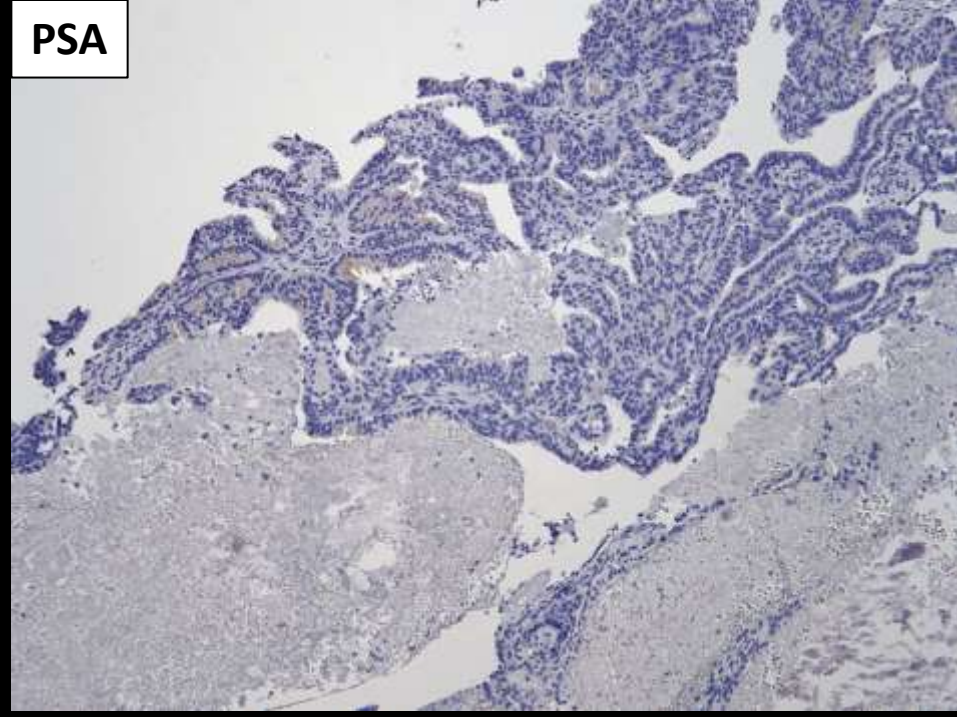

PSA


PrAP

?


CK Mix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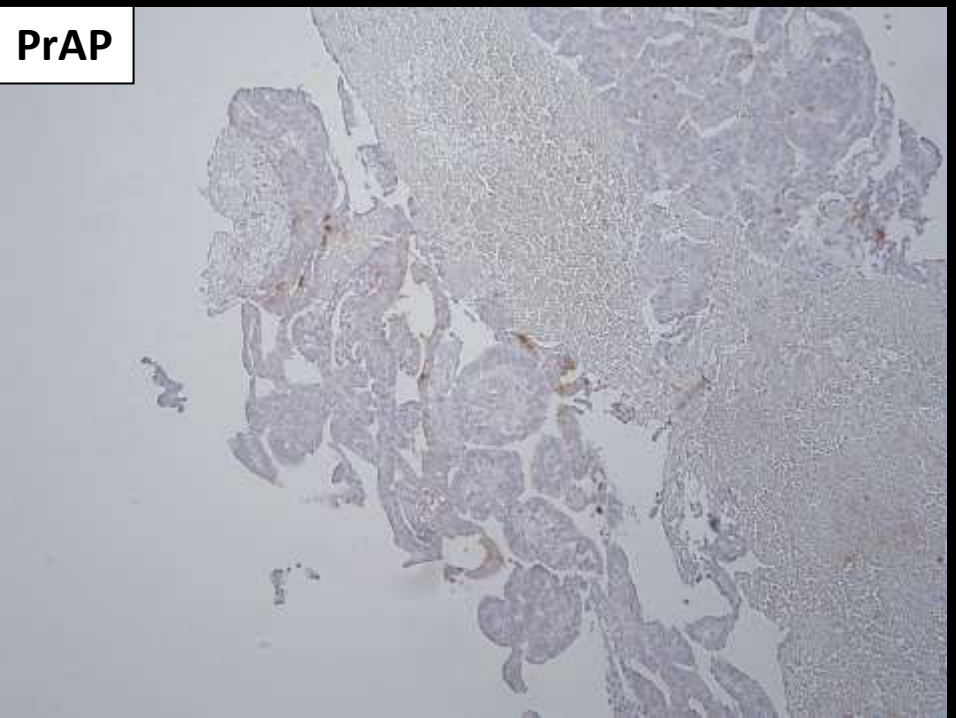
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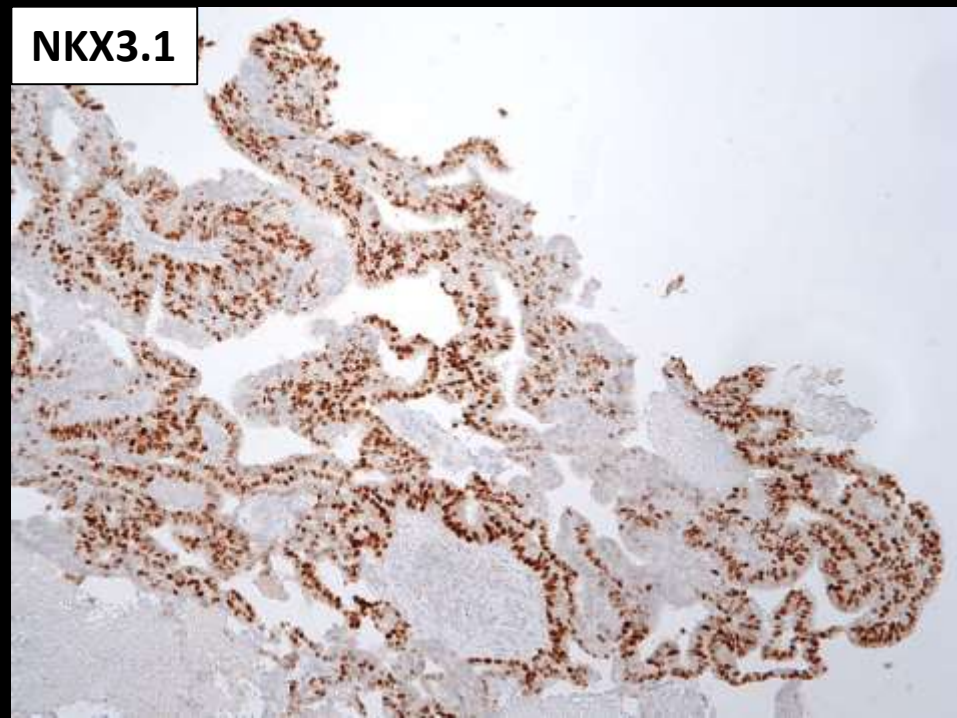
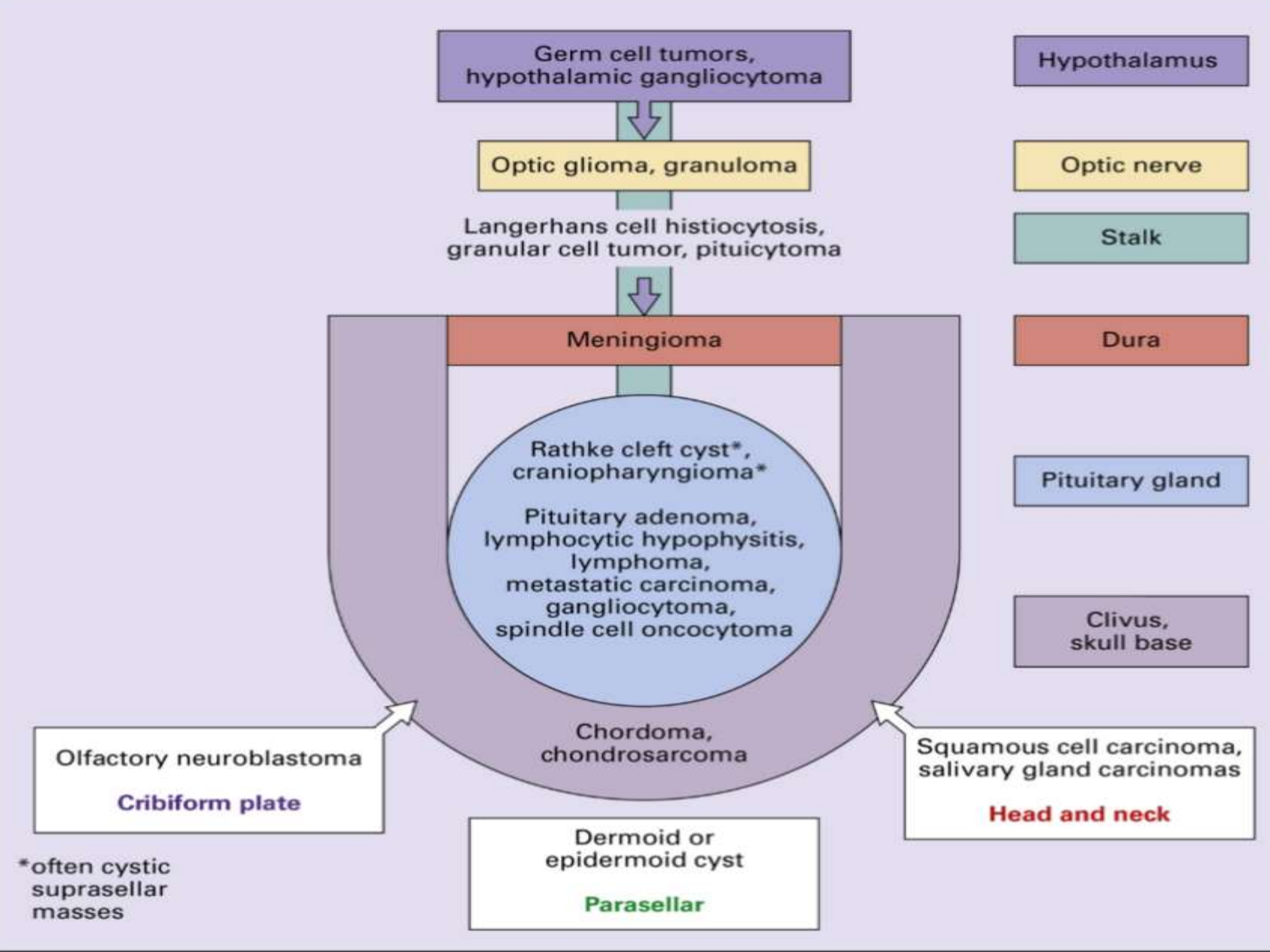

NKX3.1

DIAGNOSIS

PITUITARY, SELLAR TUMOR, RESECTION

-- METASTATIC PROSTATE ADENOCARCINOMA


Germ cell tumors, hypothalamic gangliocytoma
Hypothalamus
Optic glioma, granuloma
Optic nerve
Langerhans cell histiocytosis, granular cell tumor, pituicytoma
Stalk
Meningioma
Dura
Rathke cleft cyst*, craniopharyngioma*
Pituitary adenoma, lymphocytic hypophysitis, lymphoma, metastatic carcinoma, gangliocytoma, spindle cell oncocytoma
Pituitary gland
Clivus, skull base
Chordoma, chondrosarcoma
Olfactory neuroblastoma
Cribiform plate
Squamous cell carcinoma, salivary gland carcinomas
Head and neck
Dermoid or epidermoid cyst
Parasellar
*often cystic suprasellar masses

Pituitary Metastases

Usually present at late stage disease, e.g. known primary diagnosis

~1% of all intracranial metastases

Primary sites:

- Breast (37.2%)
- Lung (24.2%)
- Prostate (5.2%)
- Kidney (4.9%)

Table 1 425 reported cases of primary malignancies metastatic to pituitary gland

Primary site	N	Percentage	Primary site	N	Percentage
Breast	158	37.2	Multiple myeloma	3	0.7
Lung	103	24.2	Paranasal sinus	3	0.7
Prostate	22	5.2	Oral cavity	3	0.7
Renal	21	4.9	Lymphoma	2	0.5
Melanoma/Skin	13	3.1	Larynx	2	0.5
Thyroid	13	3.1	Germ cell tumor	2	0.5
Colon	12	2.8	Ovary	2	0.5
Unknown	12	2.8	Ileum	1	0.2
Stomach	9	2.1	Retroperitoneum	1	0.2
Pancreas	7	1.6	Bile duct	1	0.2
Liver	6	1.4	Lymphosarcoma	1	0.2
Pharynx	5	1.2	Penis	1	0.2
Endometrium	5	1.2	Thymus	1	0.2
Leukemia	5	1.2	Nasal cavities	1	0.2
Urinary/bladder	4	0.9	Salivary glands	1	0.2
Uterine/cervix	4	0.9	Merkel cell carcinoma	1	0.2

References from [6, 17, 26, 29, 41, 46, 47, 48–63]

He W, Chen F, Dalm B,. Kirby P,. Greenlee J. Metastatic involvement of the pituitary gland: a systematic review with pooled individual patient data analysis. Pituitary (2015) 18:159–168

Clinical Presentation Of Pituitary Metastases

Diabetes Insipidus (most common and specific)

Anterior Pituitary Insufficiency

Cranial Nerve Palsy

Headaches

Visual Disturbances

He W, Chen F, Dalm B,. Kirby P,. Greenlee J. Metastatic involvement of the pituitary gland: a systematic review with pooled individual patient data analysis. Pituitary (2015) 18:159–168

Imaging-Pituitary Metastases

Neurohypophysis

(Breast has an affinity for the **adenohypophysis**)

Invasion of the cavernous sinus

Sclerosis in the surround sella turcica

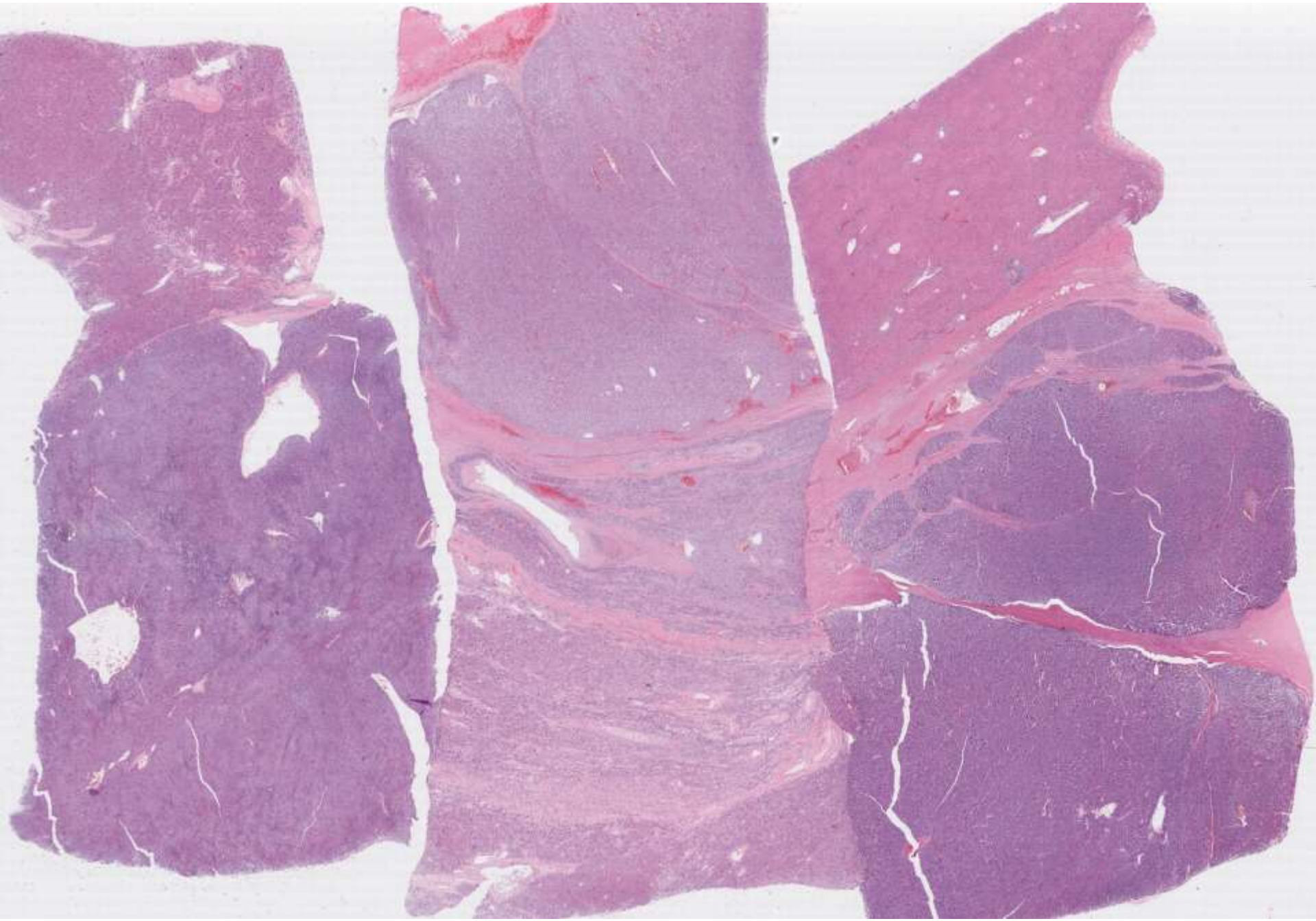
Thickening of the pituitary stalk

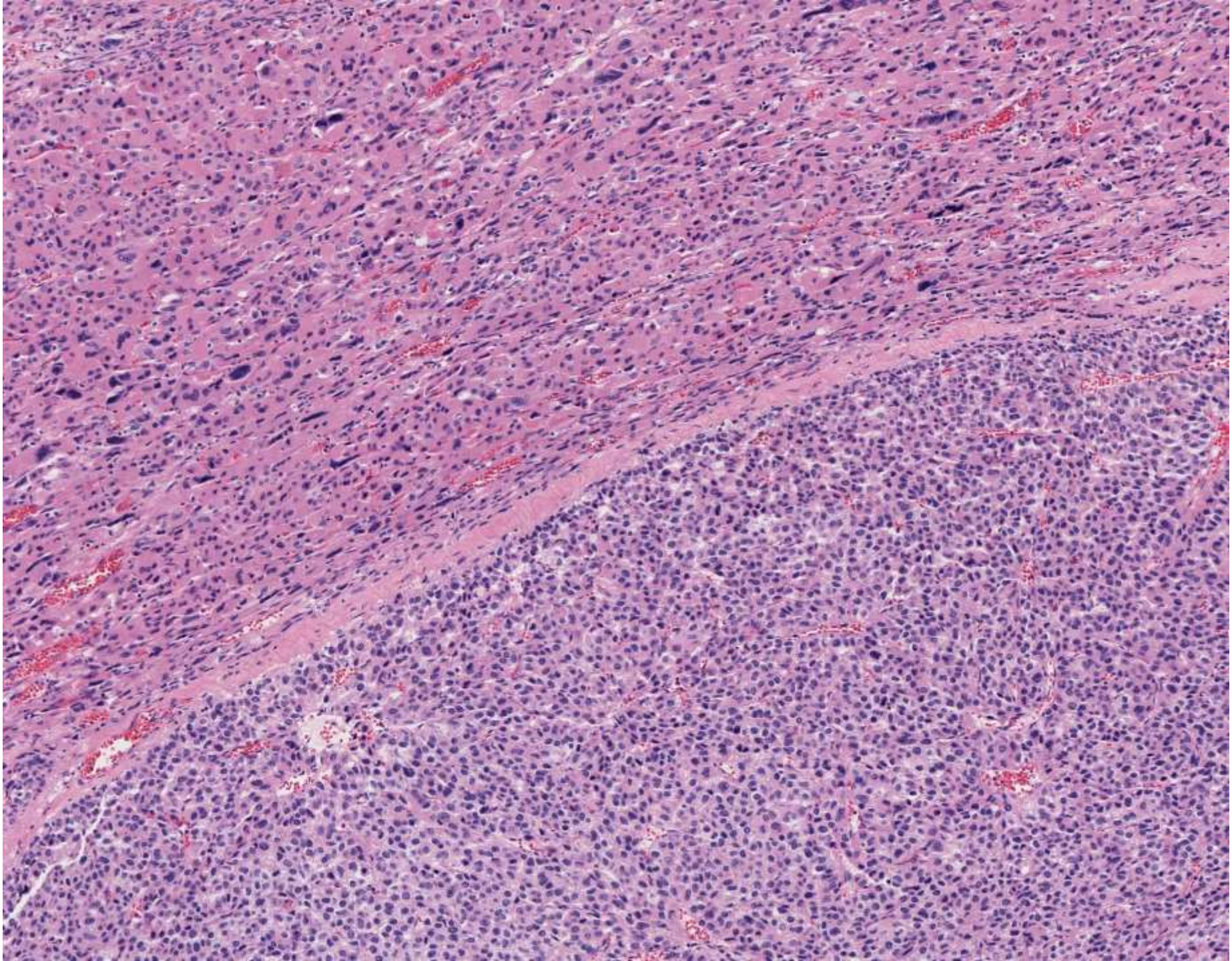
Fassett DR, Cauldwell WT. Metastases to the pituitary gland. Neurosurg Focus. 2004 Apr 15;16(4):E8.

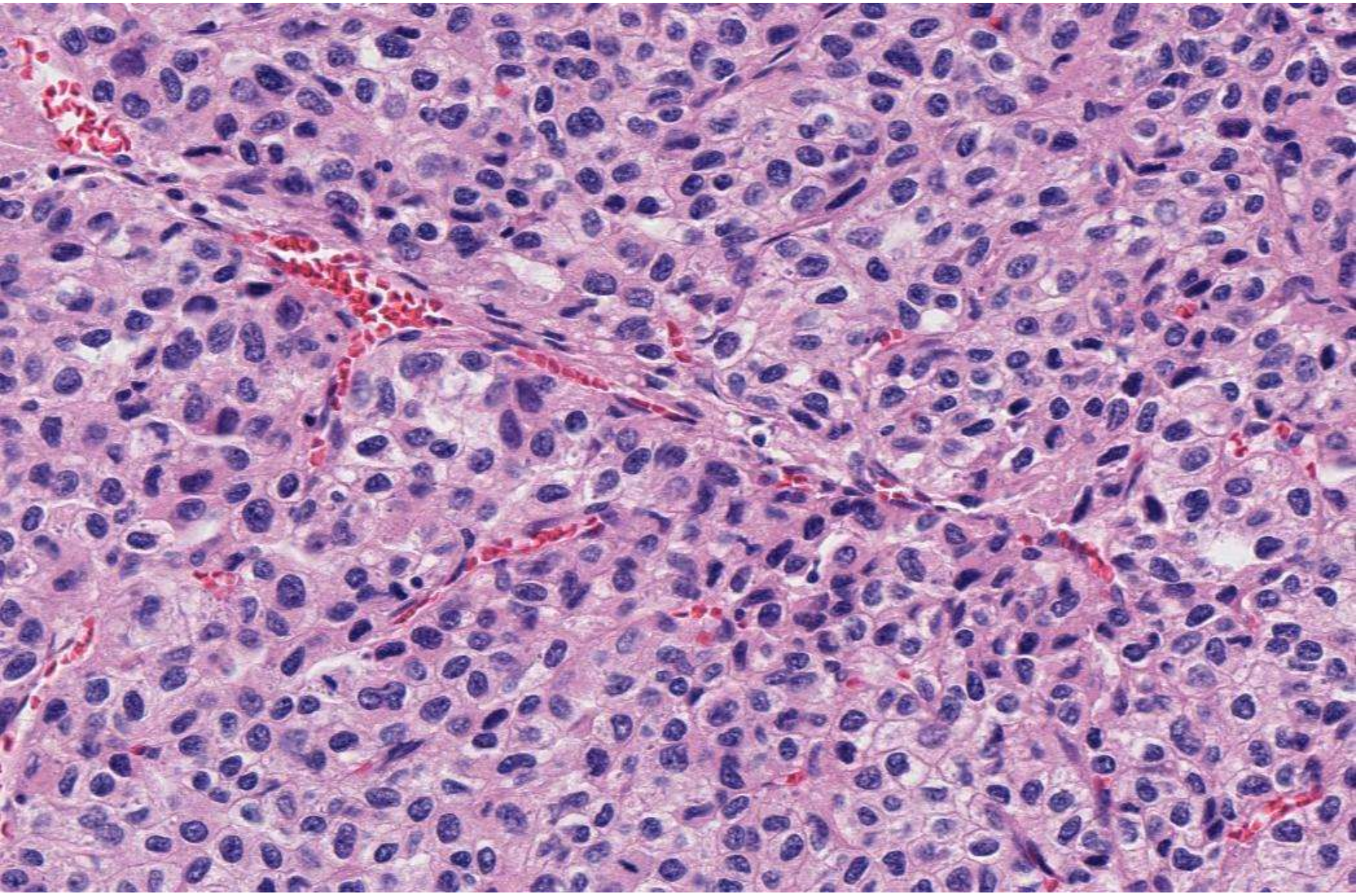
SB 5993

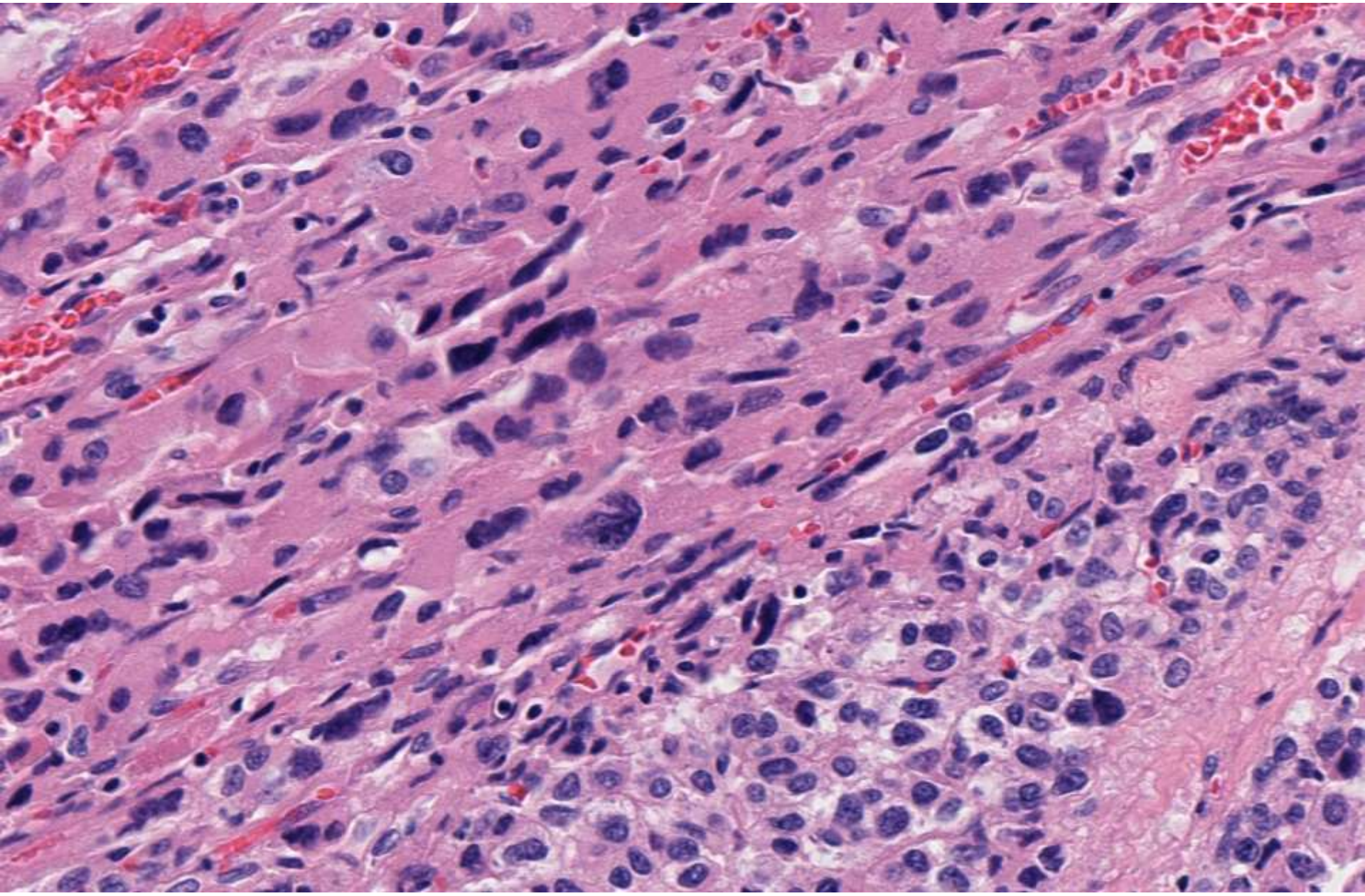
59-year-old man with a history of thin melanoma and a feeling of fullness as his presenting symptom. Imaging showed a circumscribed 24 cm solid, centrally necrotic mass in the right retroperitoneum. He underwent resection of the mass. Grossly the tumor was a 23.5 cm largely solid, multinodular, tan/orange, hemorrhagic, and necrotic mass.

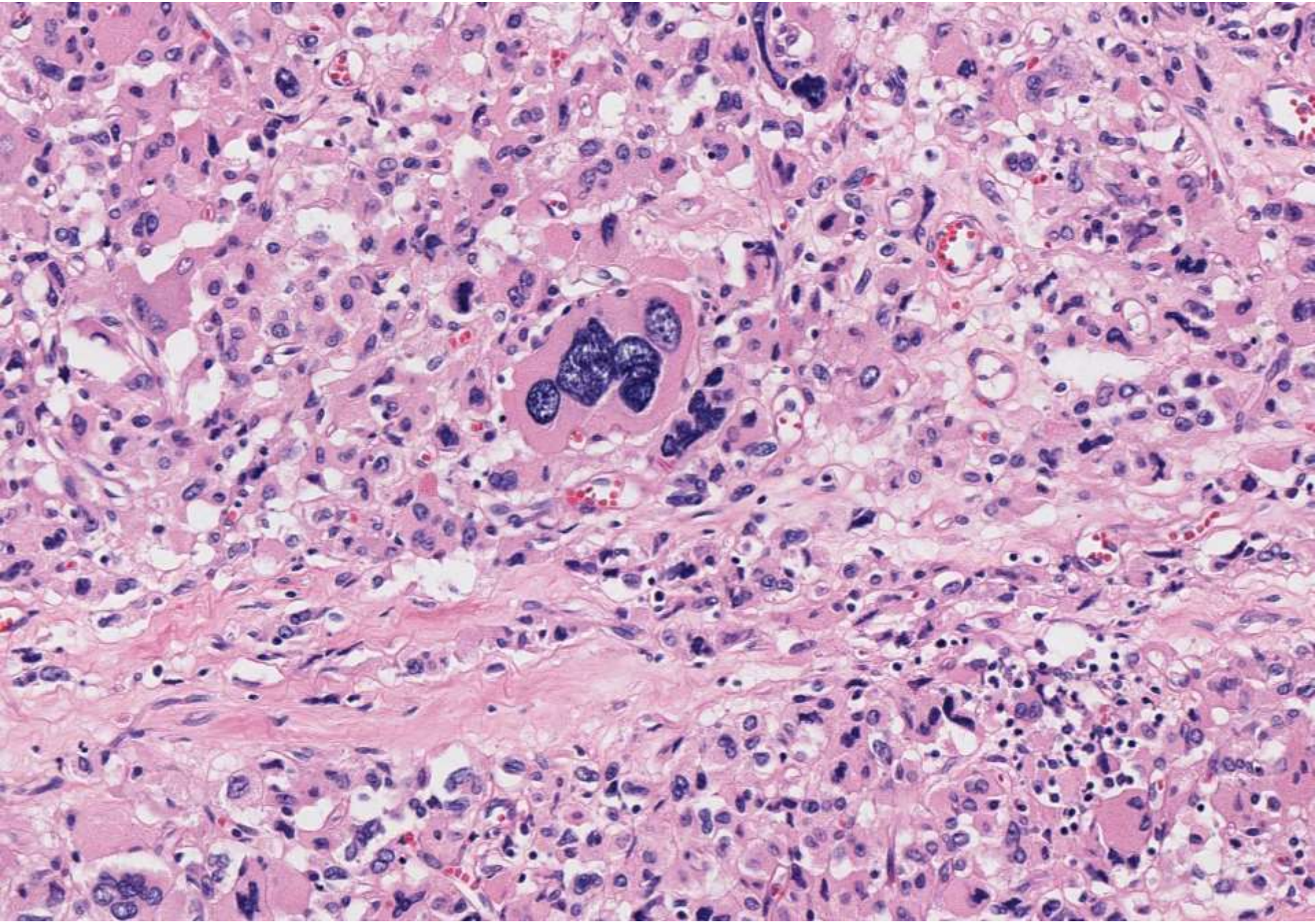
Jarish Cohen/Andrew Horvai; UCSF

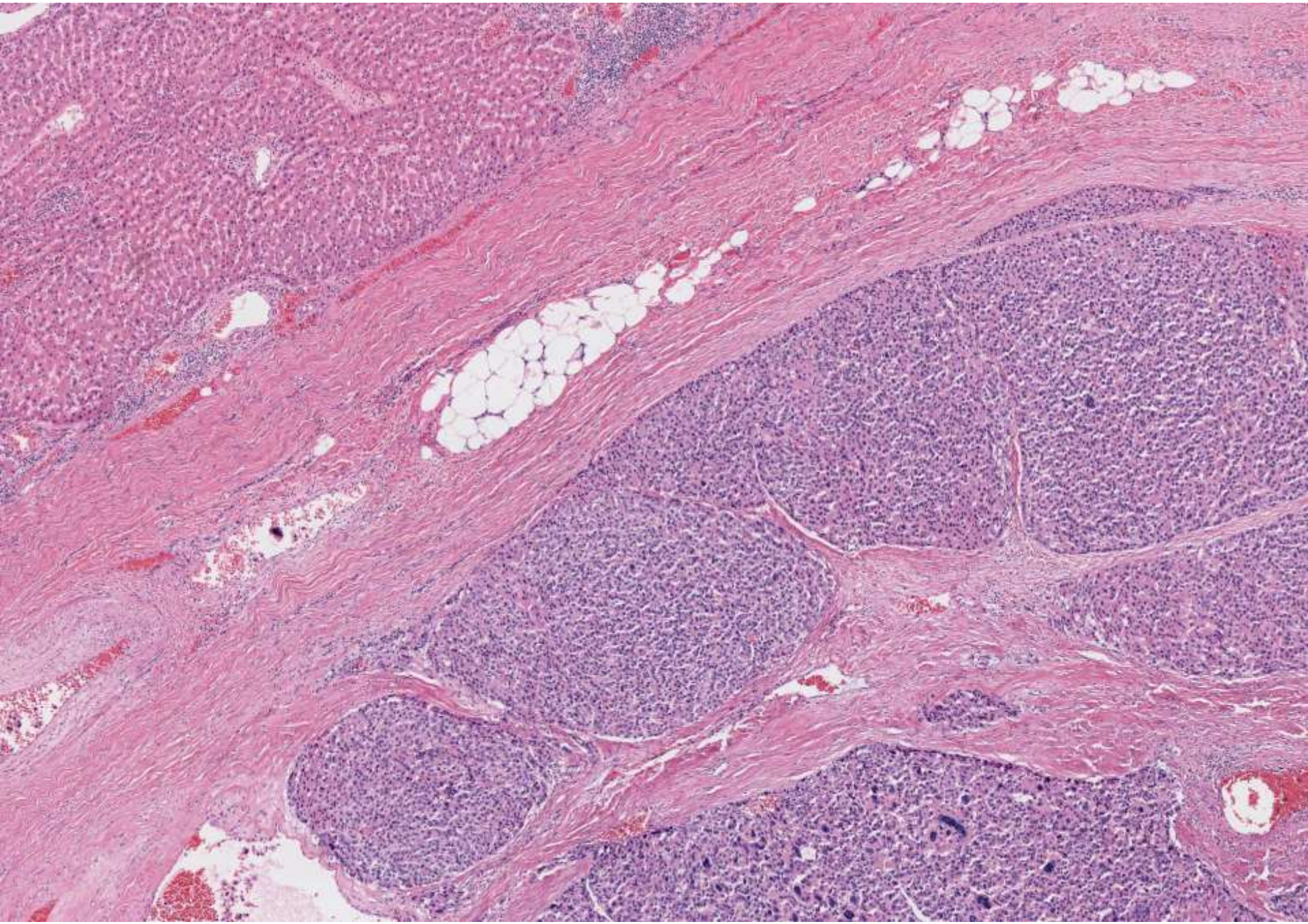


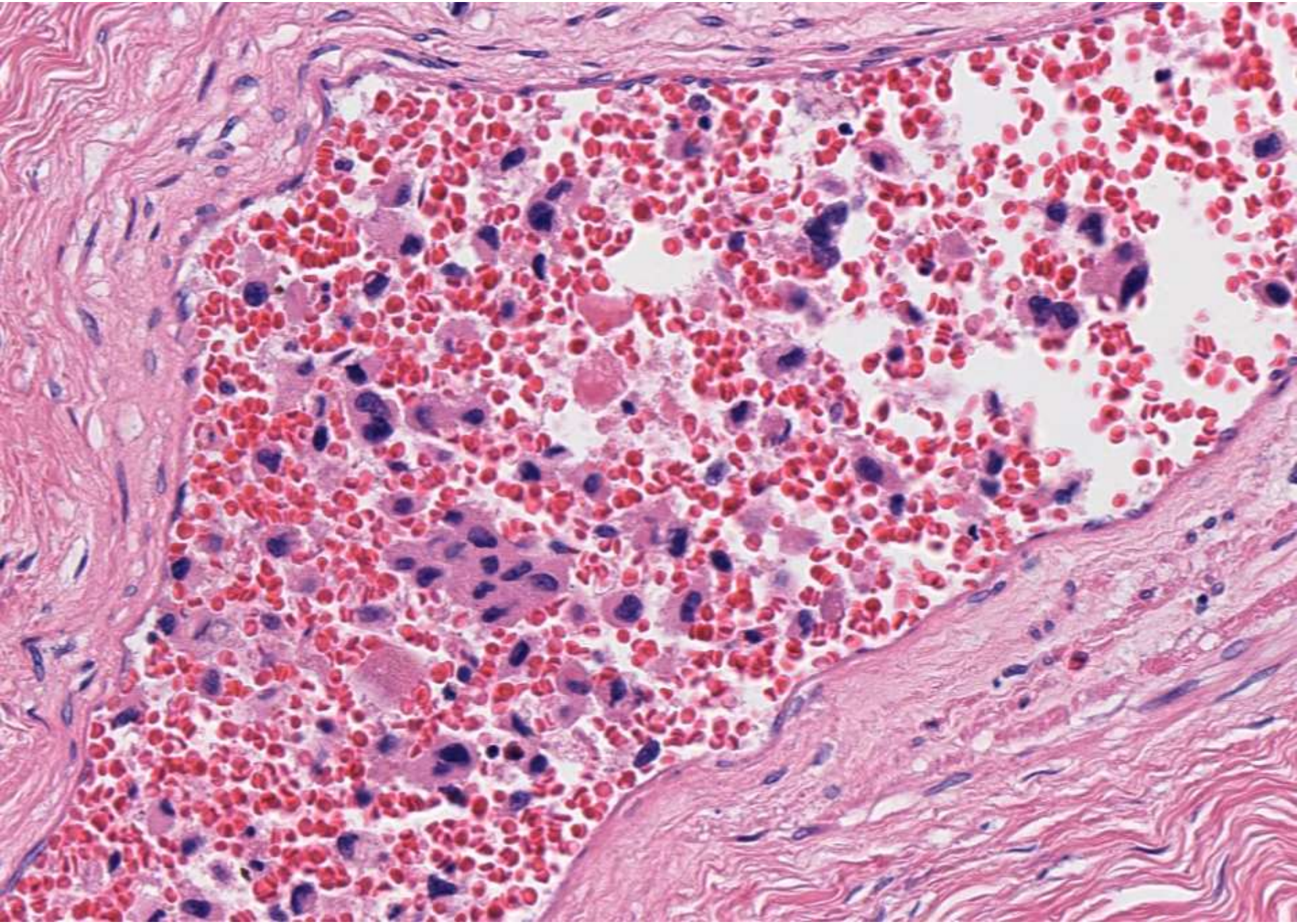






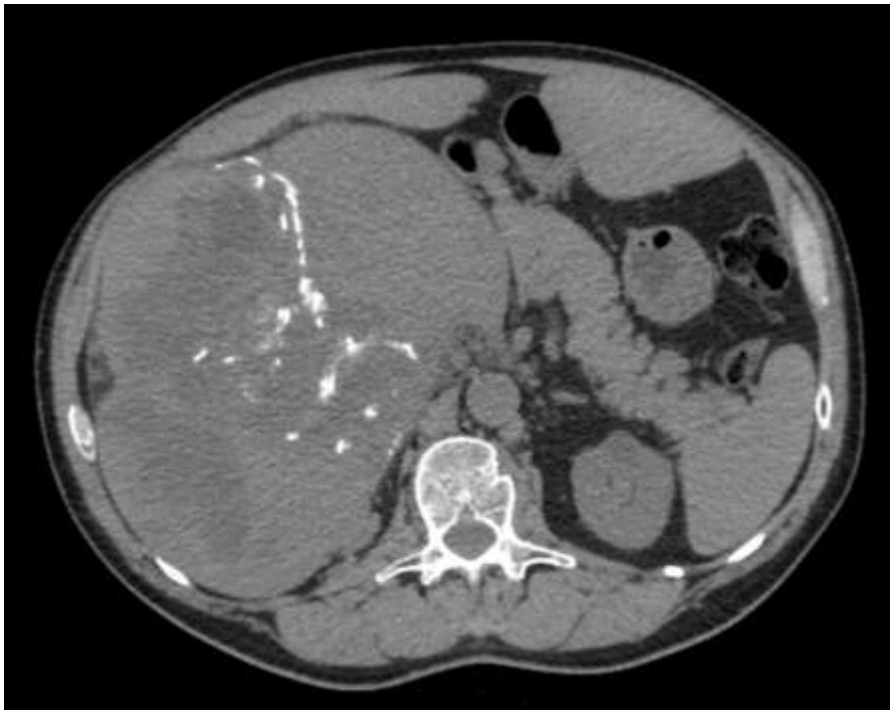




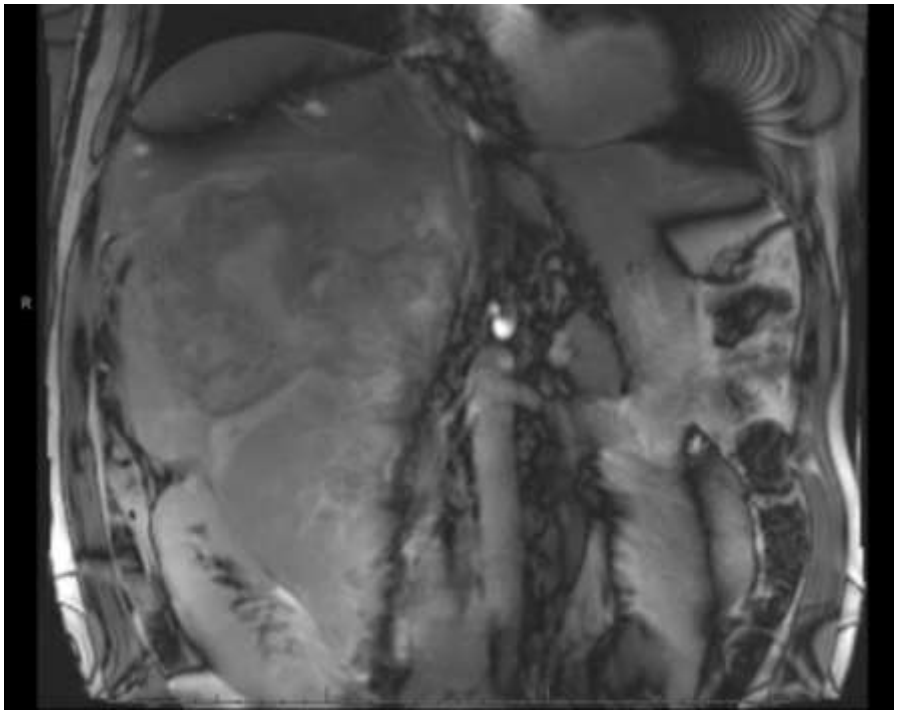


DIAGNOSIS?

Imaging

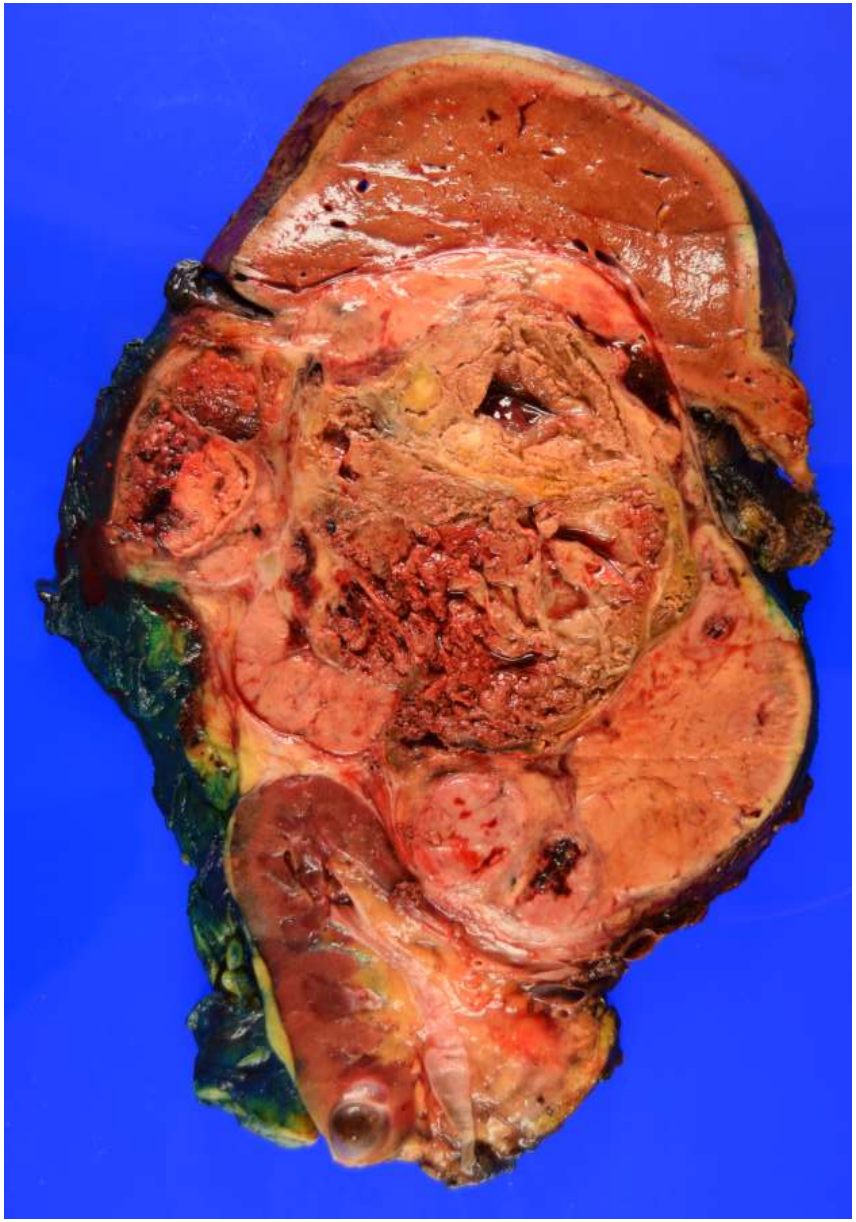


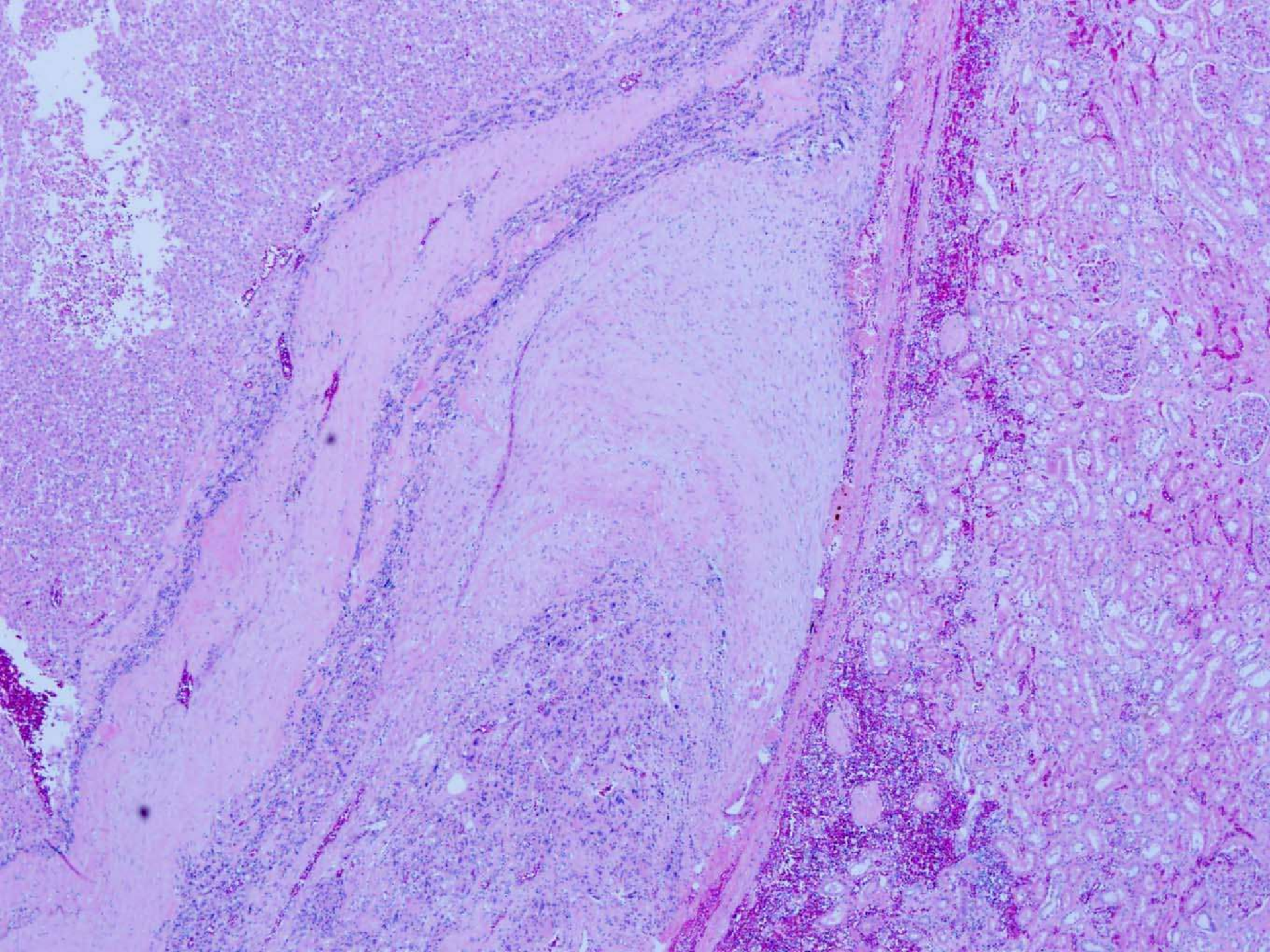
Axial CT

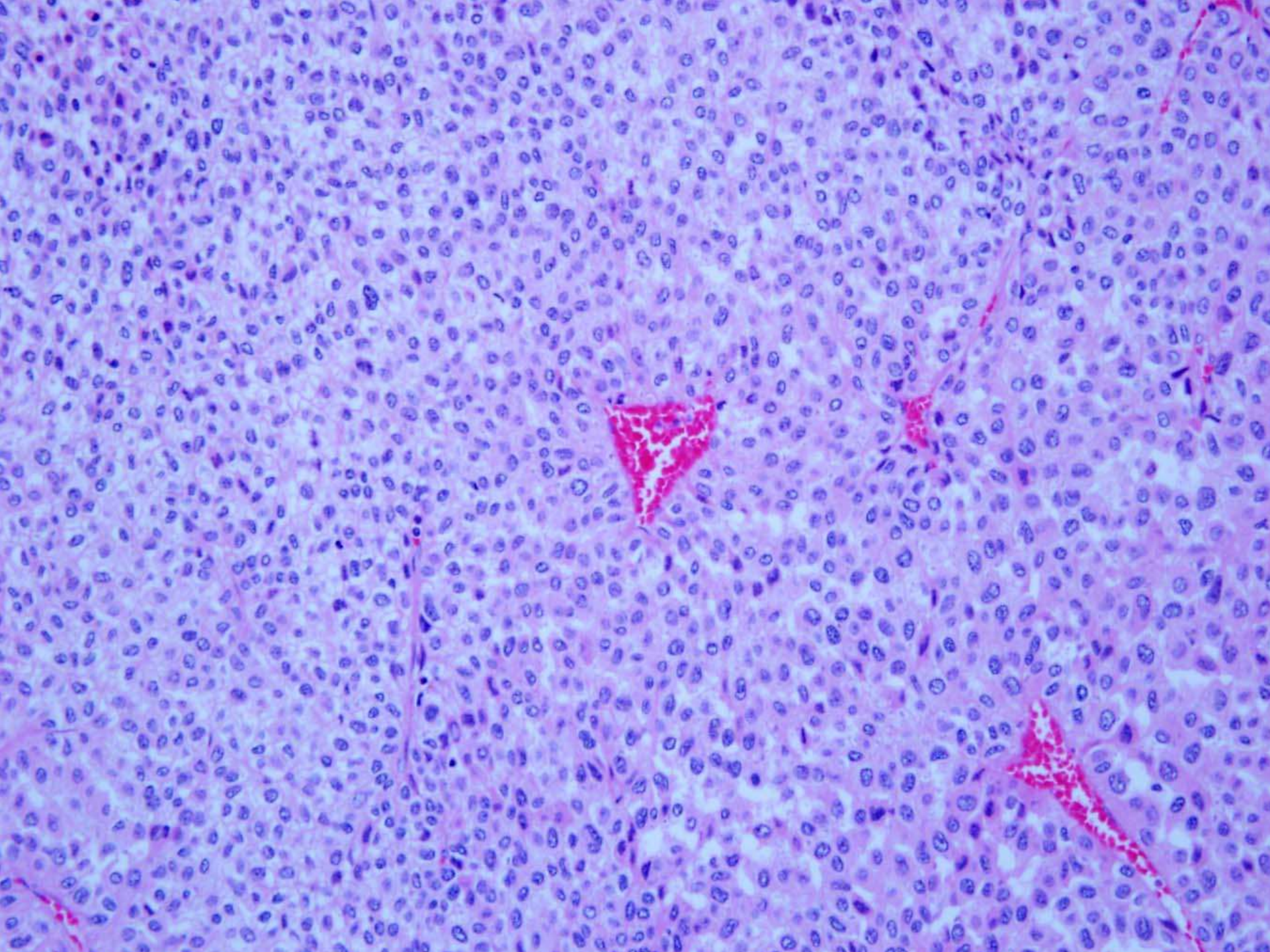


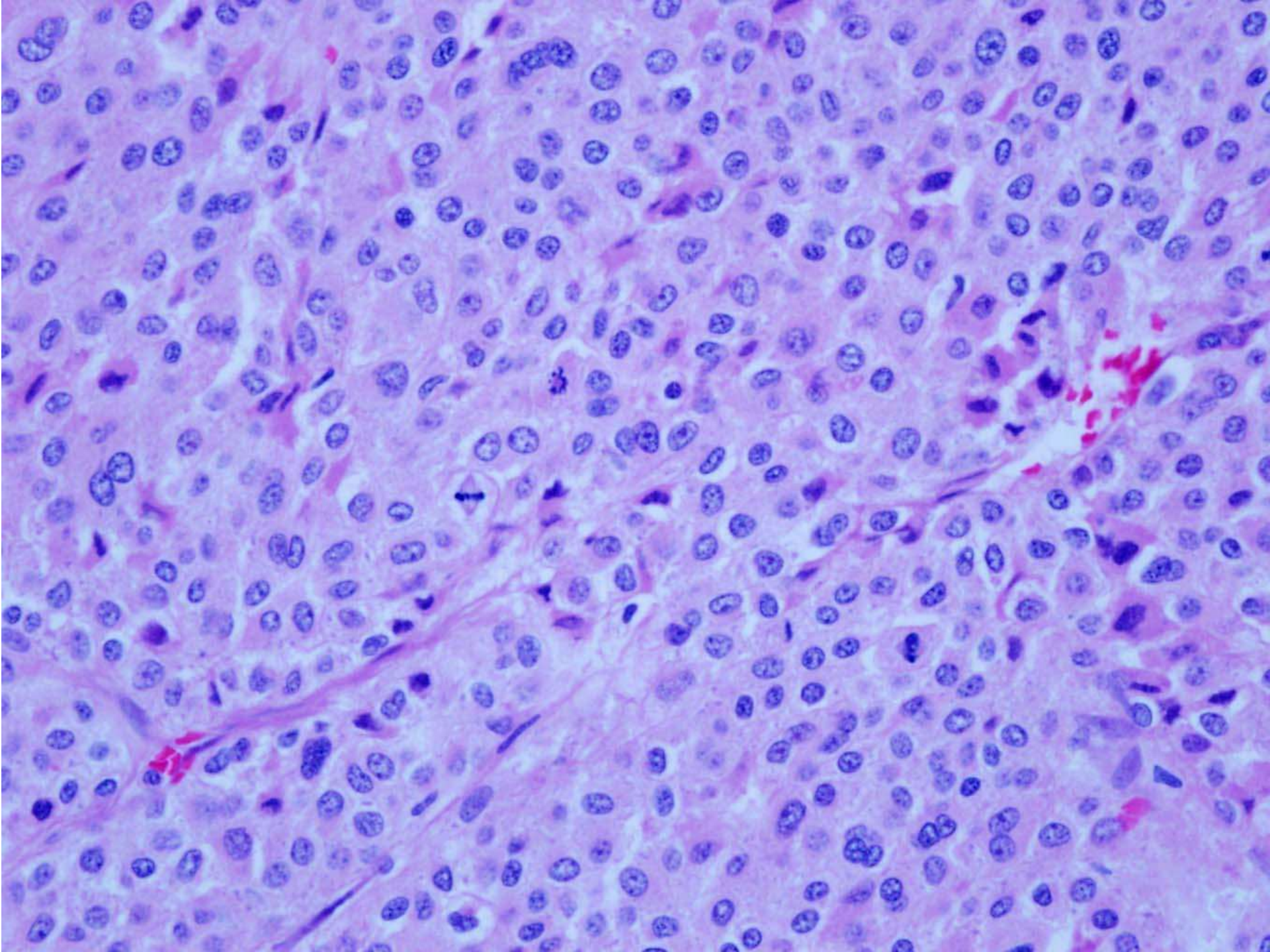
Coronal BTFE MRI

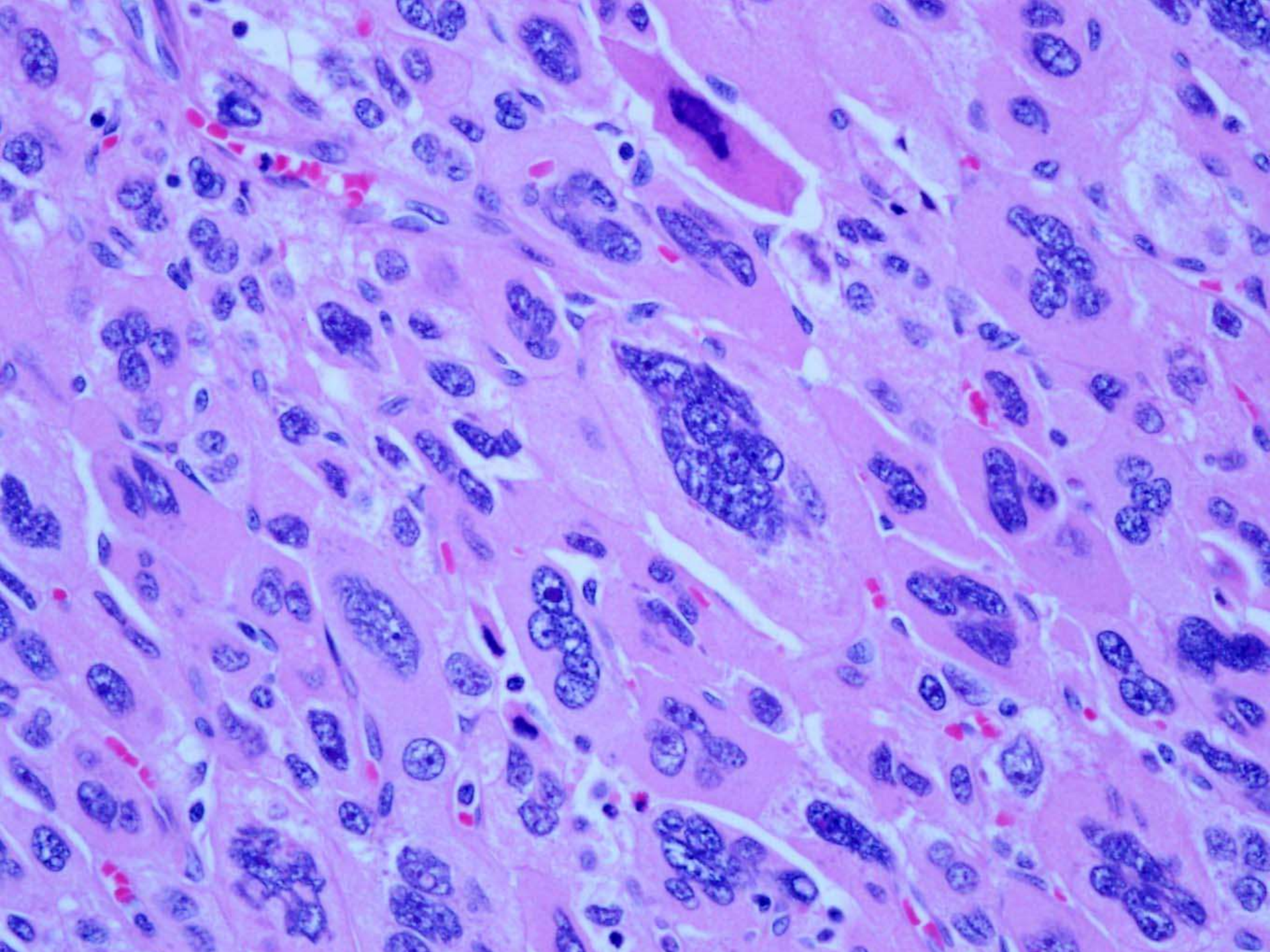
Gross Pathology

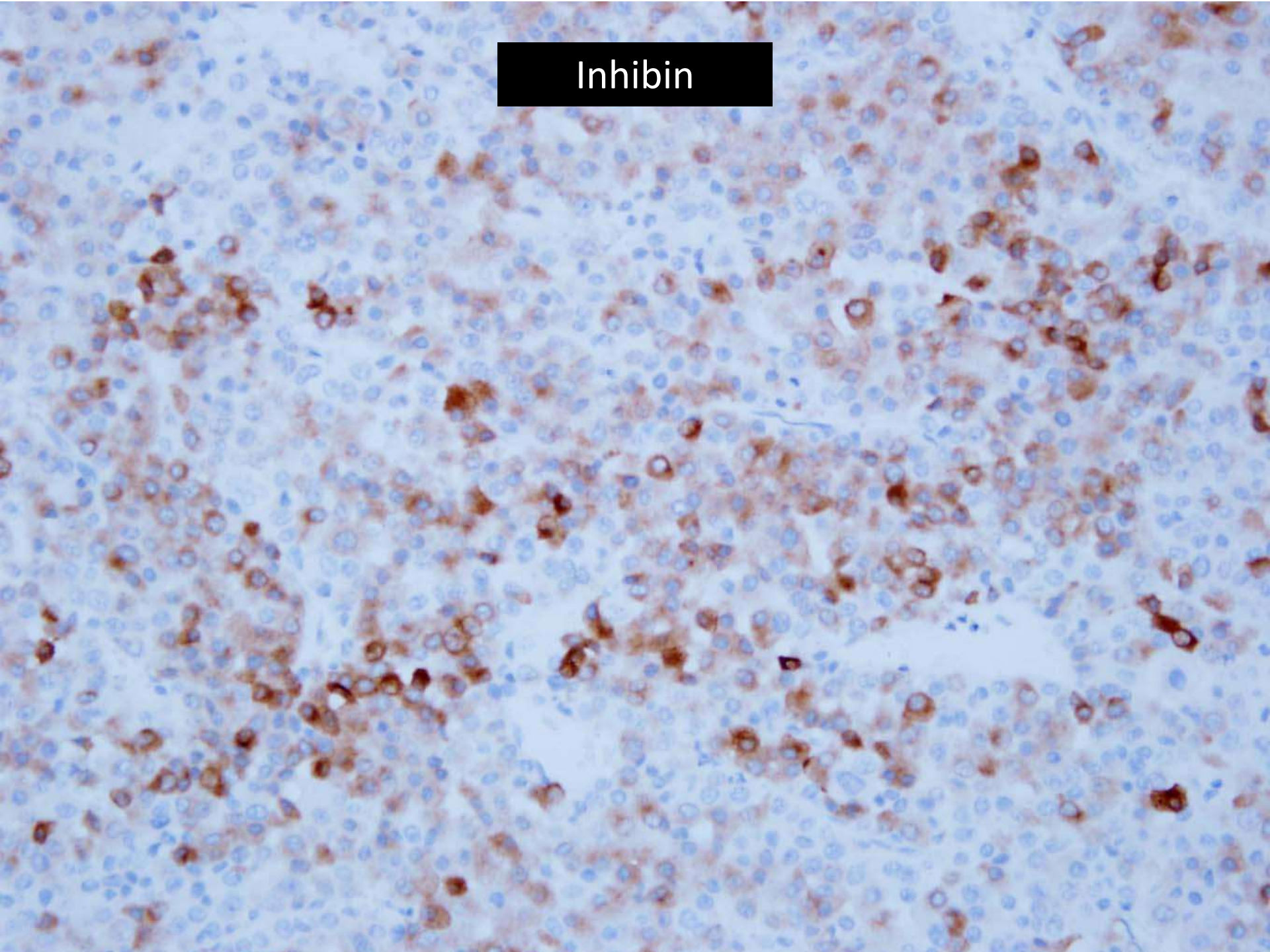


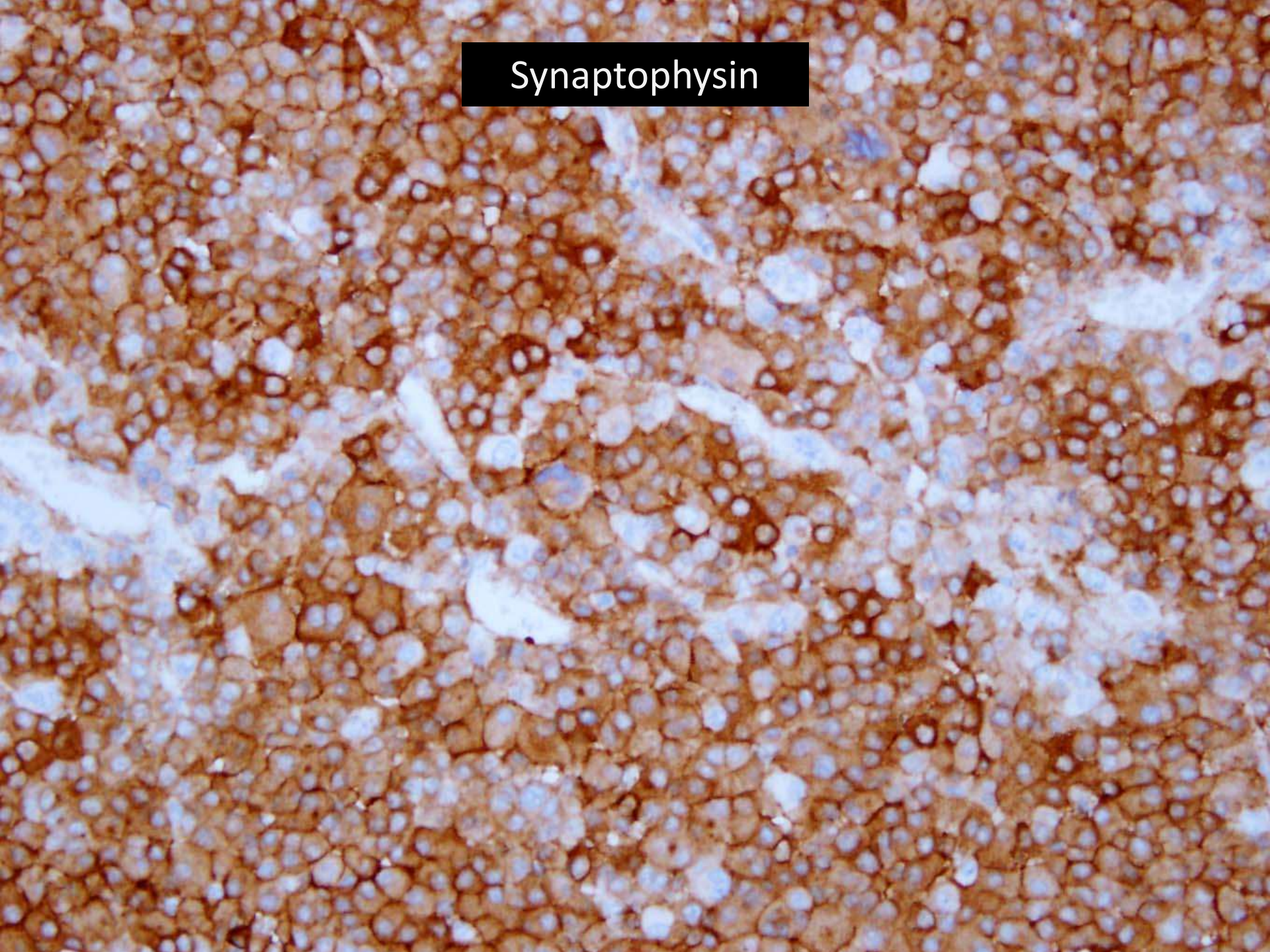









Inhibin


Synaptophysin

IHC results table

Positive	Negative
Inhibin	Keratin cocktail
Synaptophysin	EMA
Melan-A	SOX10
	Chromogranin A
	SMA

Diagnosis

- Adrenal cortical carcinoma, pT3

CAP Approved **Endocrine • Adrenal Gland**
AdrenalGland 3.2.0.0

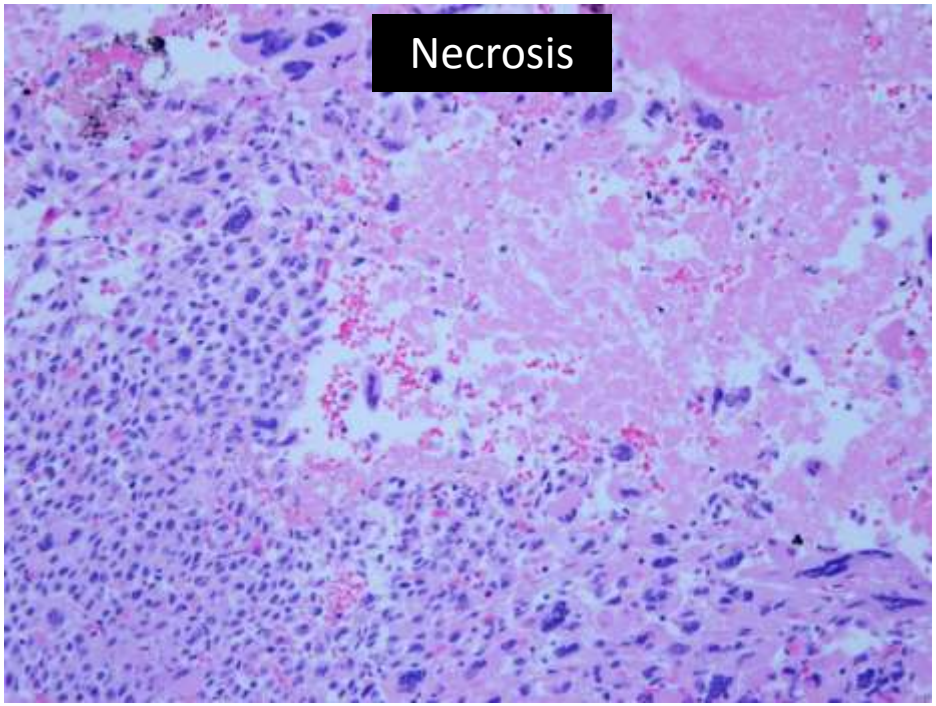
Primary Tumor (pT)
___ pTX: Cannot be determined
___ pT0: No evidence of primary tumor
___ pT1: Tumor 5 cm or less in greatest dimension, no extra-adrenal invasion
___ pT2: Tumor greater than 5 cm, no extra-adrenal invasion
___ pT3: Tumor of any size with local invasion, but not invading adjacent organs#
___ pT4: Tumor of any size with invasion of adjacent organs#

 # Adjacent organs include kidney, diaphragm, great vessels, pancreas, and liver.
Note: There is no category of carcinoma in situ (pTis) relative to carcinomas of the adrenal gland.

Discussion

Modified Weiss Criteria

- Mitotic rate >5/ HPF (2)
- Cytoplasm (clear cells comprise ≤ 25% of tumor) (2)
- Abnormal mitoses (1)
- Necrosis (1)
- Capsular invasion (1)
- Score of ≥ 3 is suggestive of malignancy



Discussion

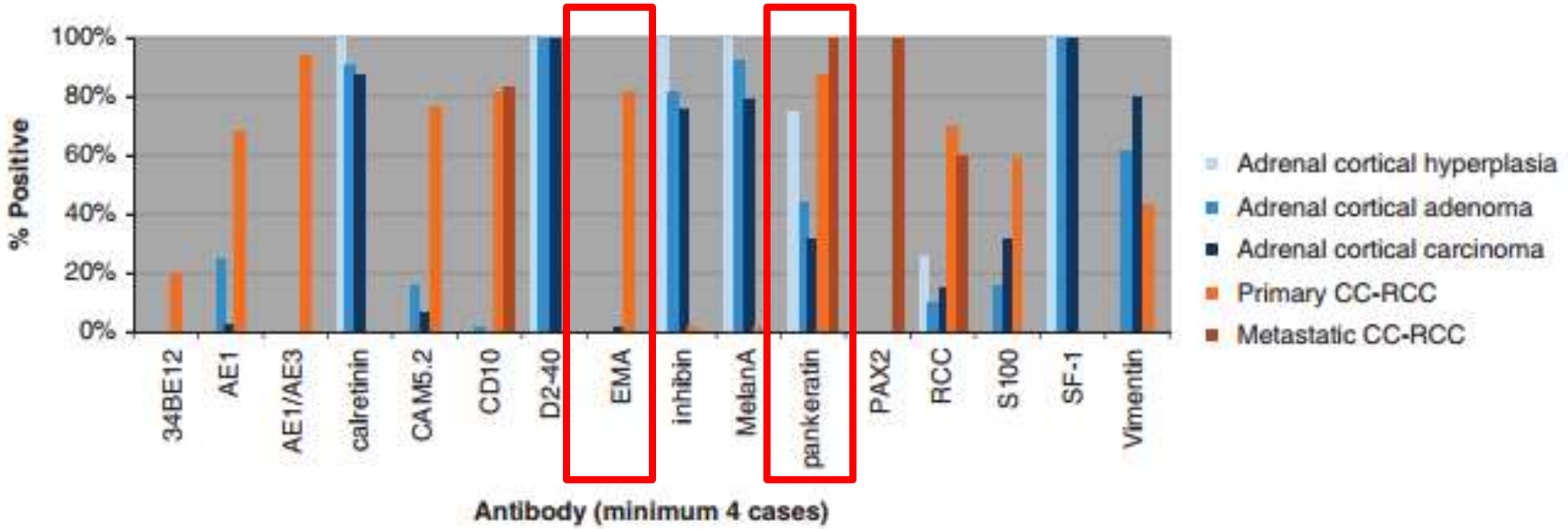


FIGURE 1. Review of previously reported immunohistochemical findings in adrenal cortical lesions and CC-RCC.[2–6,9–12,16,25,27,33,34,36,41,42,44,45,50,53,54]

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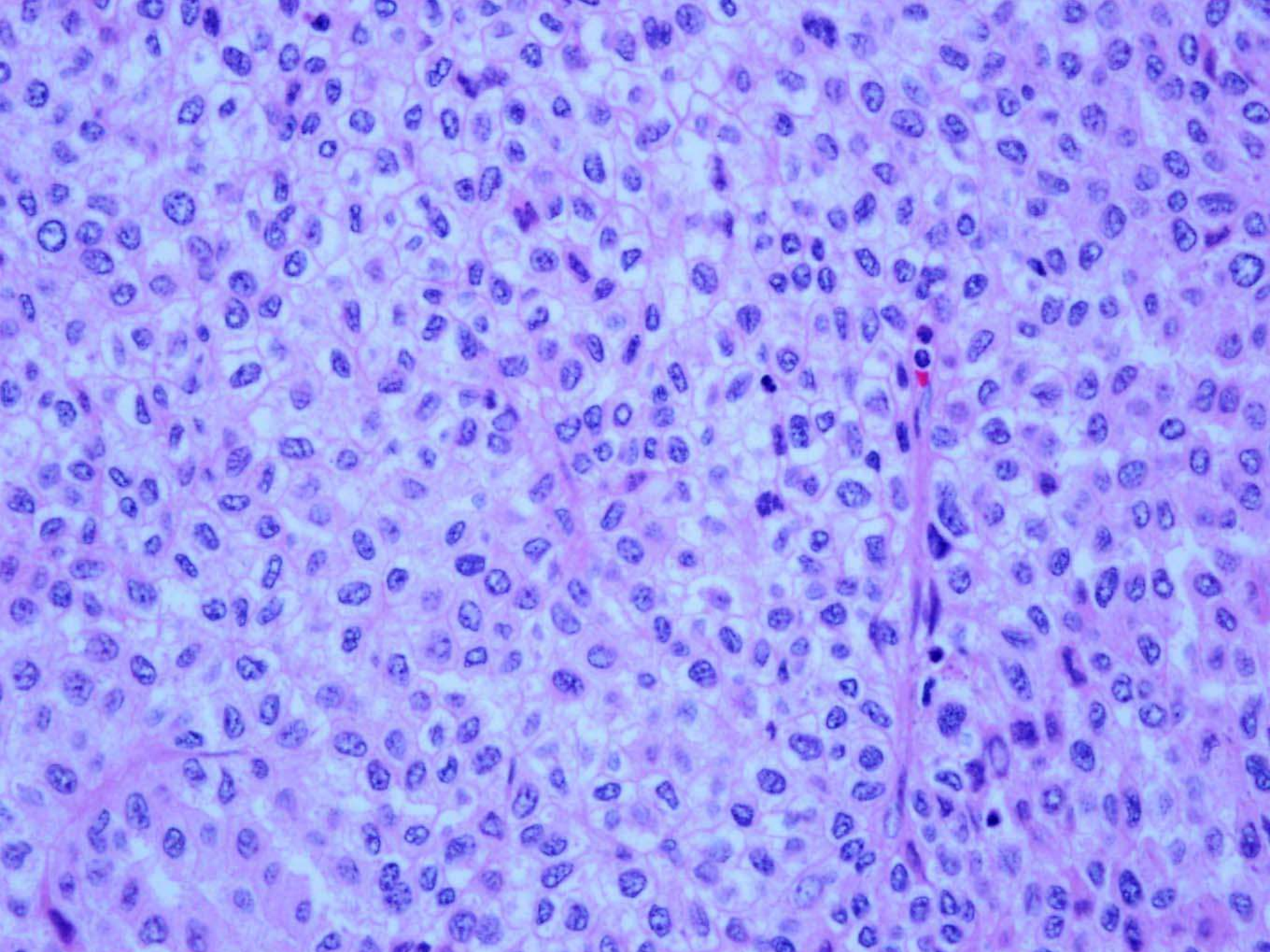
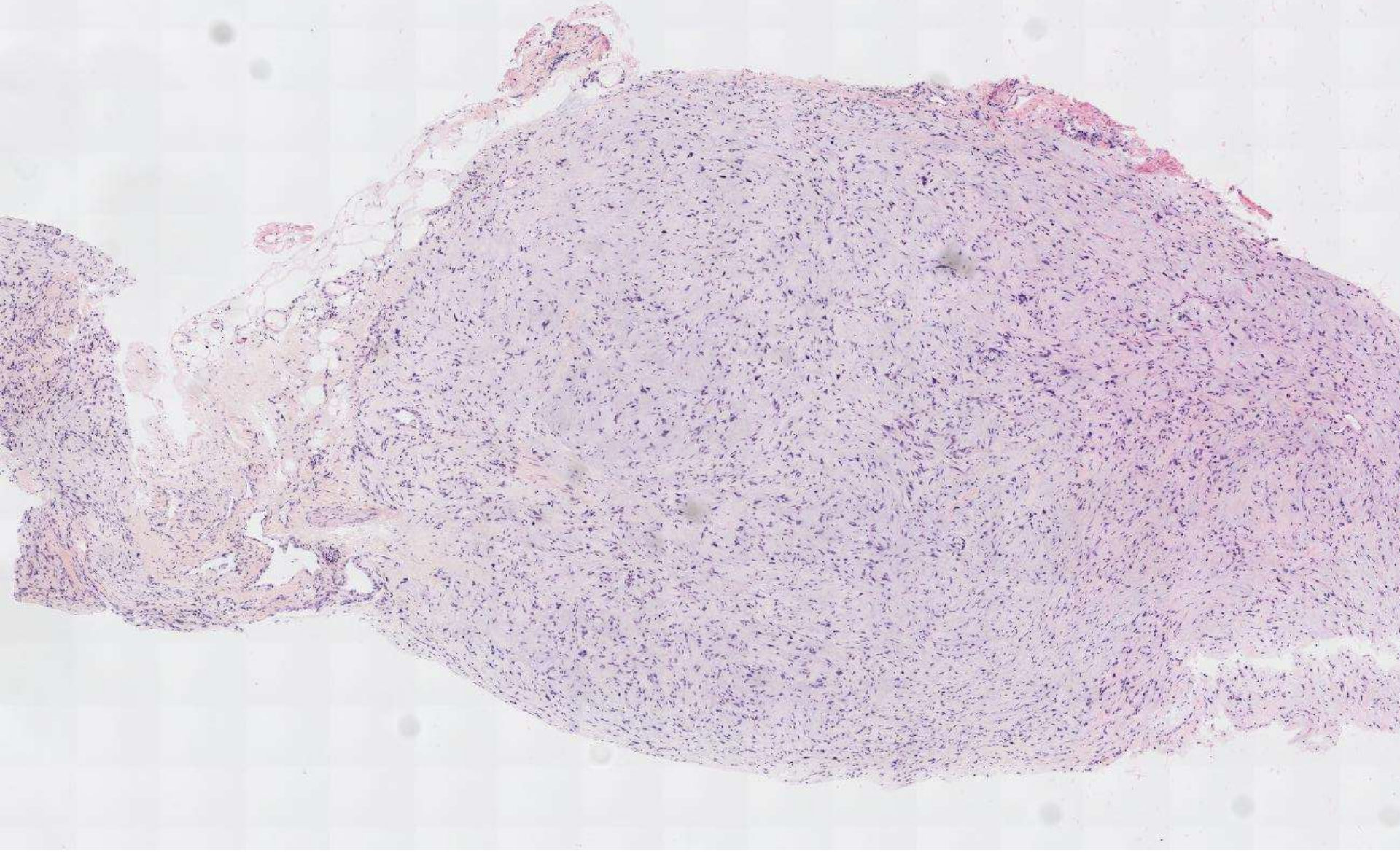
- DeLellis RA, Lloyd RV, Heitz PU, Eng C, ed. *World Health Organization Classification of Tumours: Pathology and Genetics of Tumours of Endocrine Organs.* Lyon, France: IARC Press; 2004:136.
- Sangoi AR, Fujiwara M, West RB, et al. *Immunohistochemical distinction of primary adrenal cortical lesions from metastatic clear cell renal cell carcinoma: a study of 248 cases.* Am J Surg Pathol 2011; 35(5):678-86.

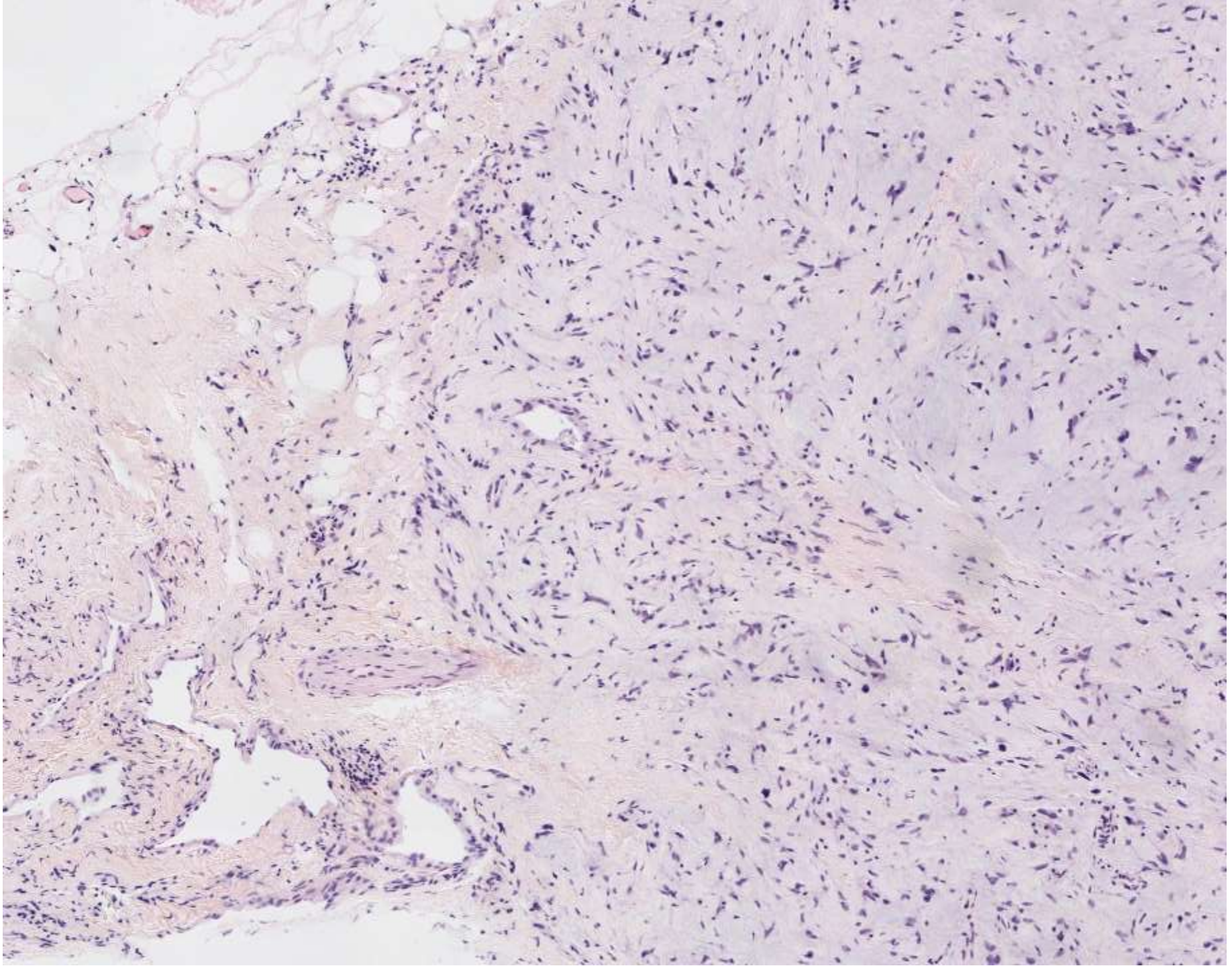


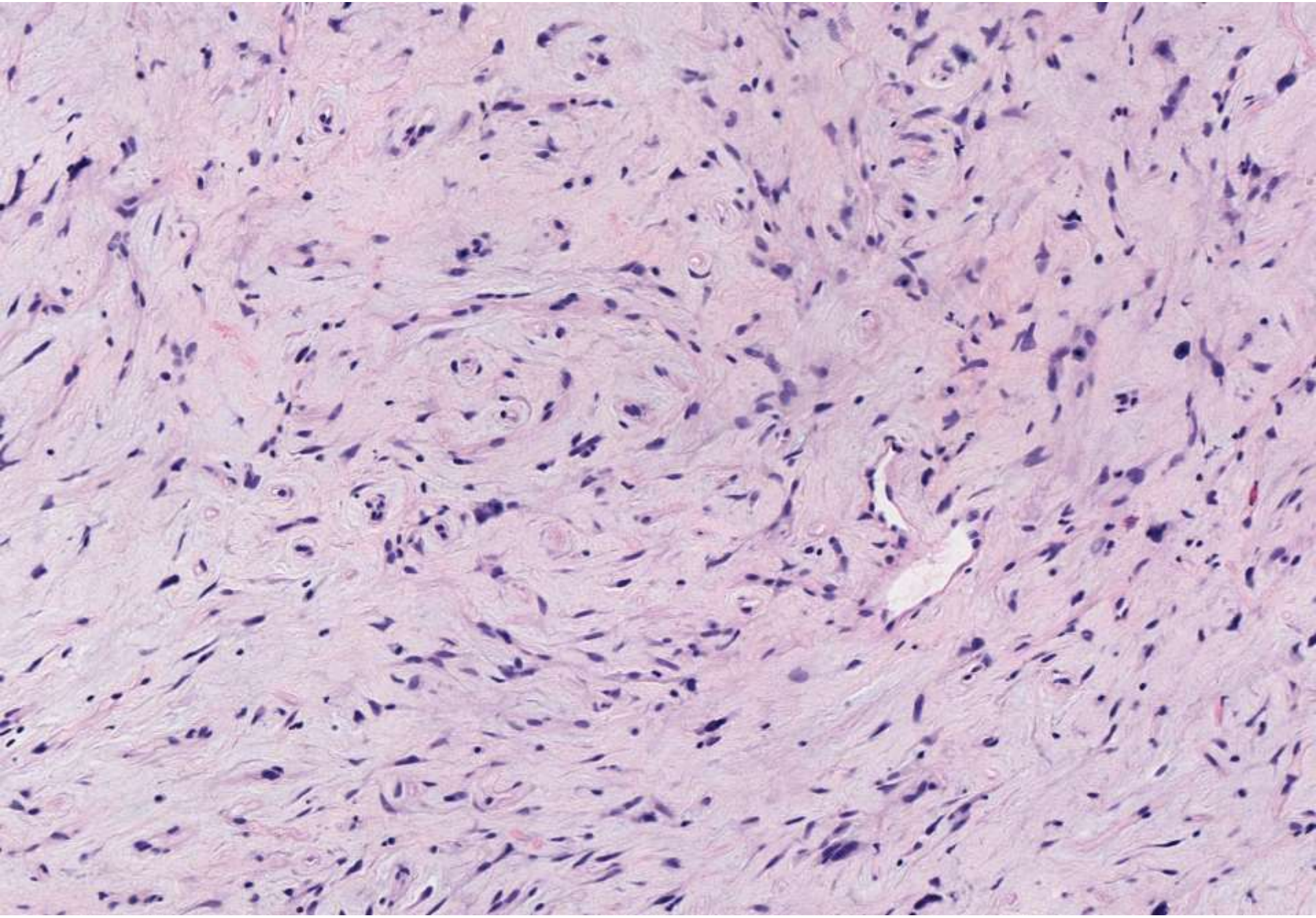
SB 5994

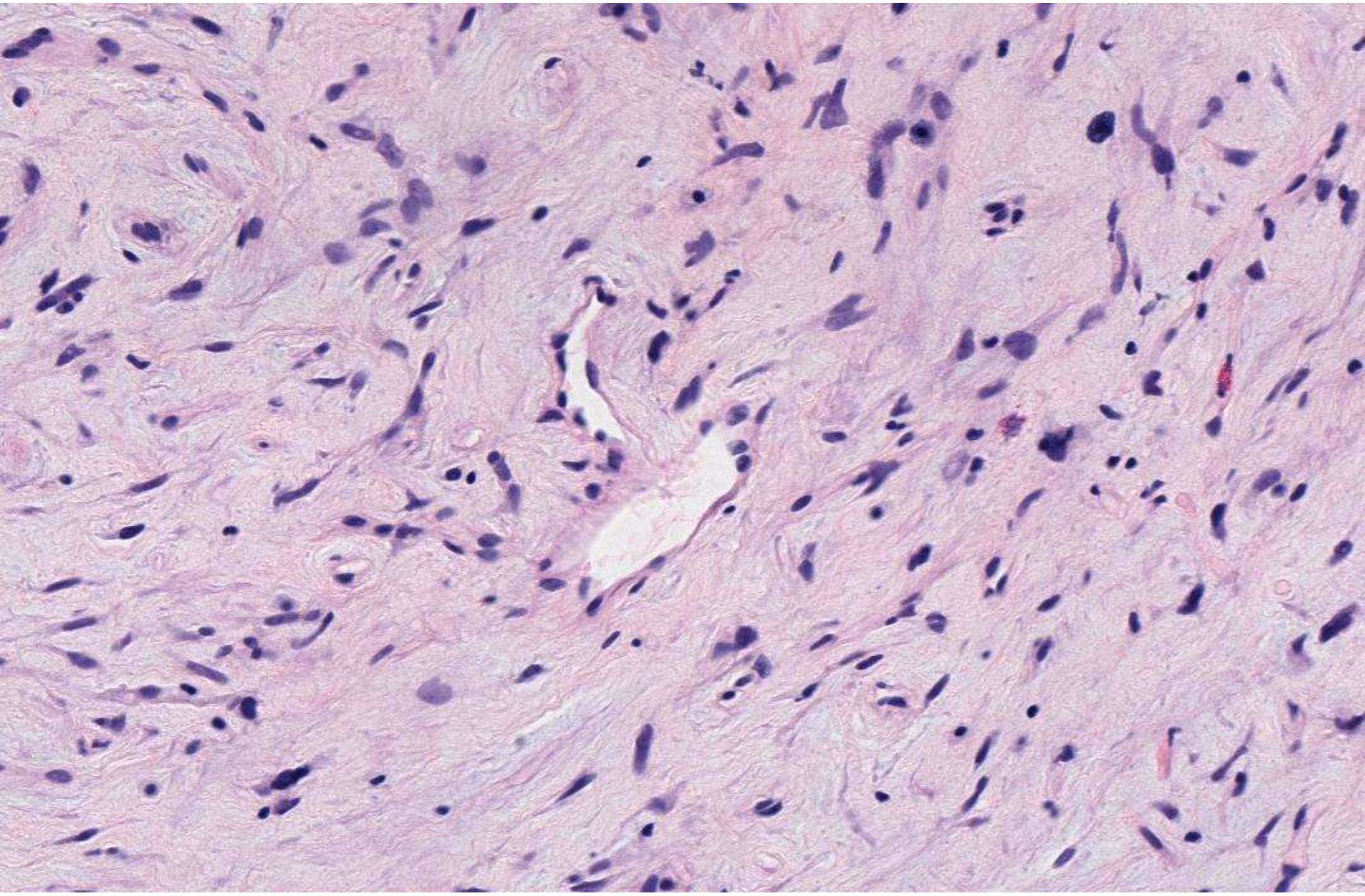
60-year-old man with right orbital mass, displacing right superior and medial rectus.

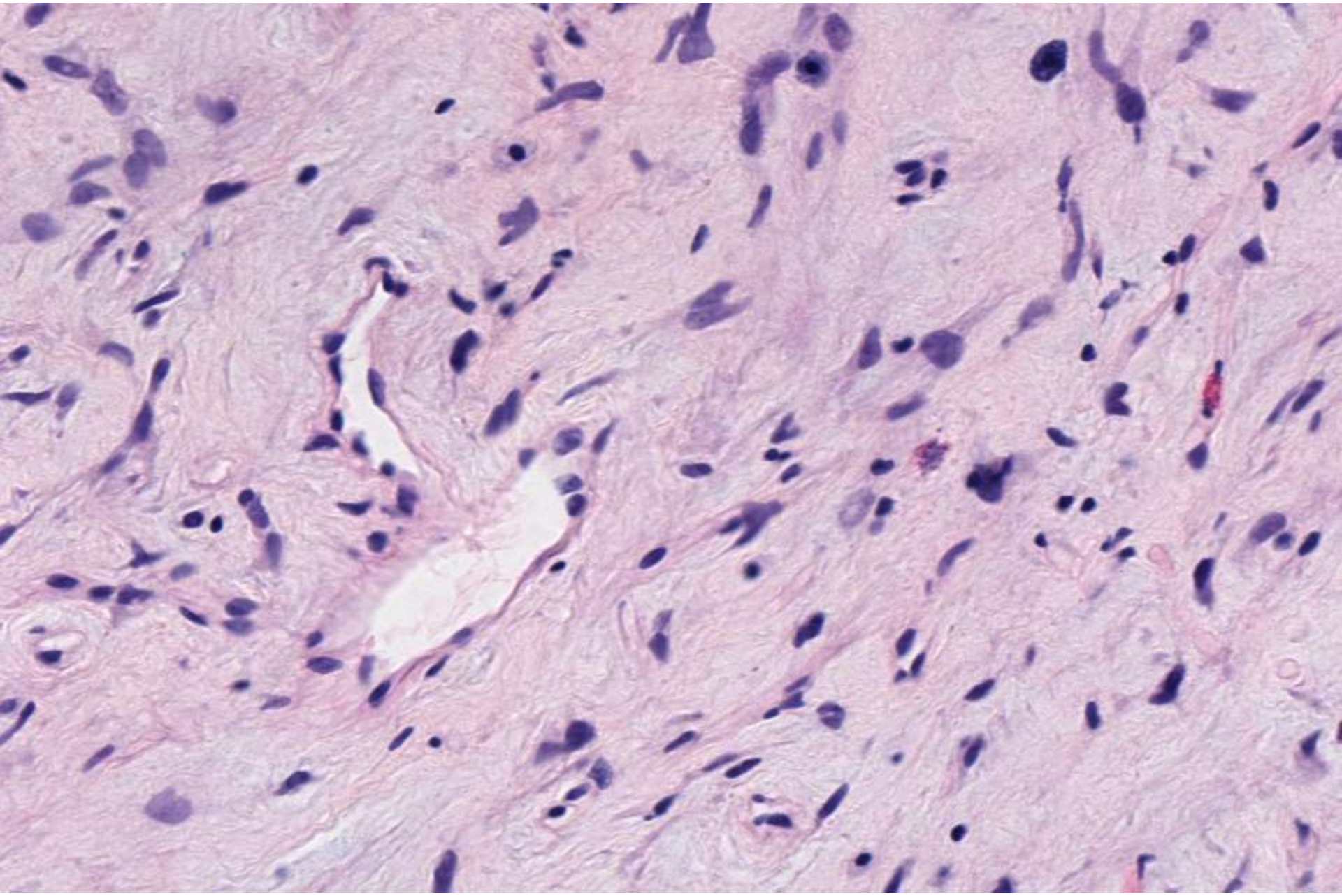
Andrew Horvai; UCSF





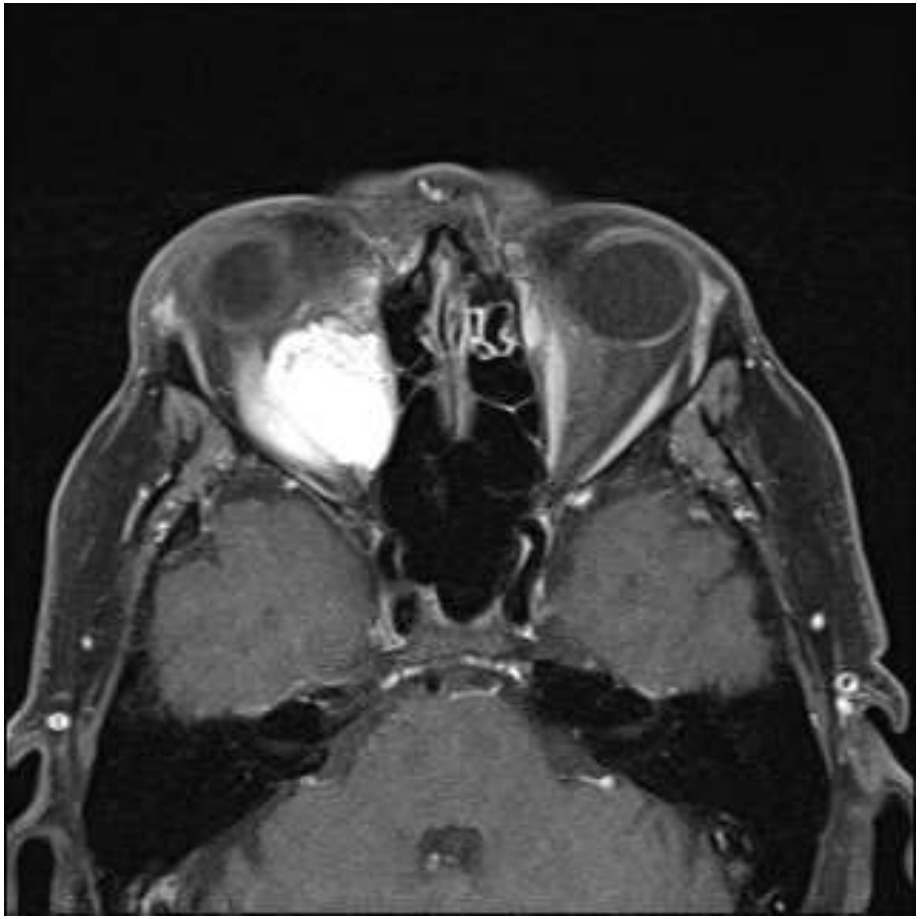




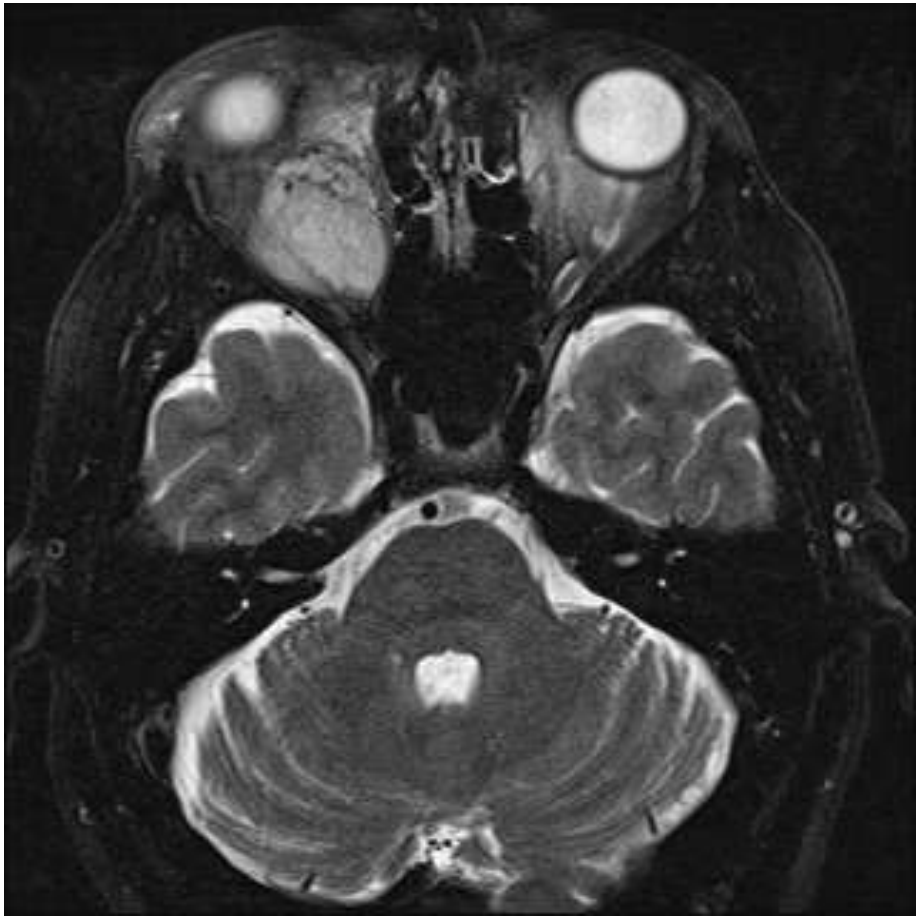


DIAGNOSIS?

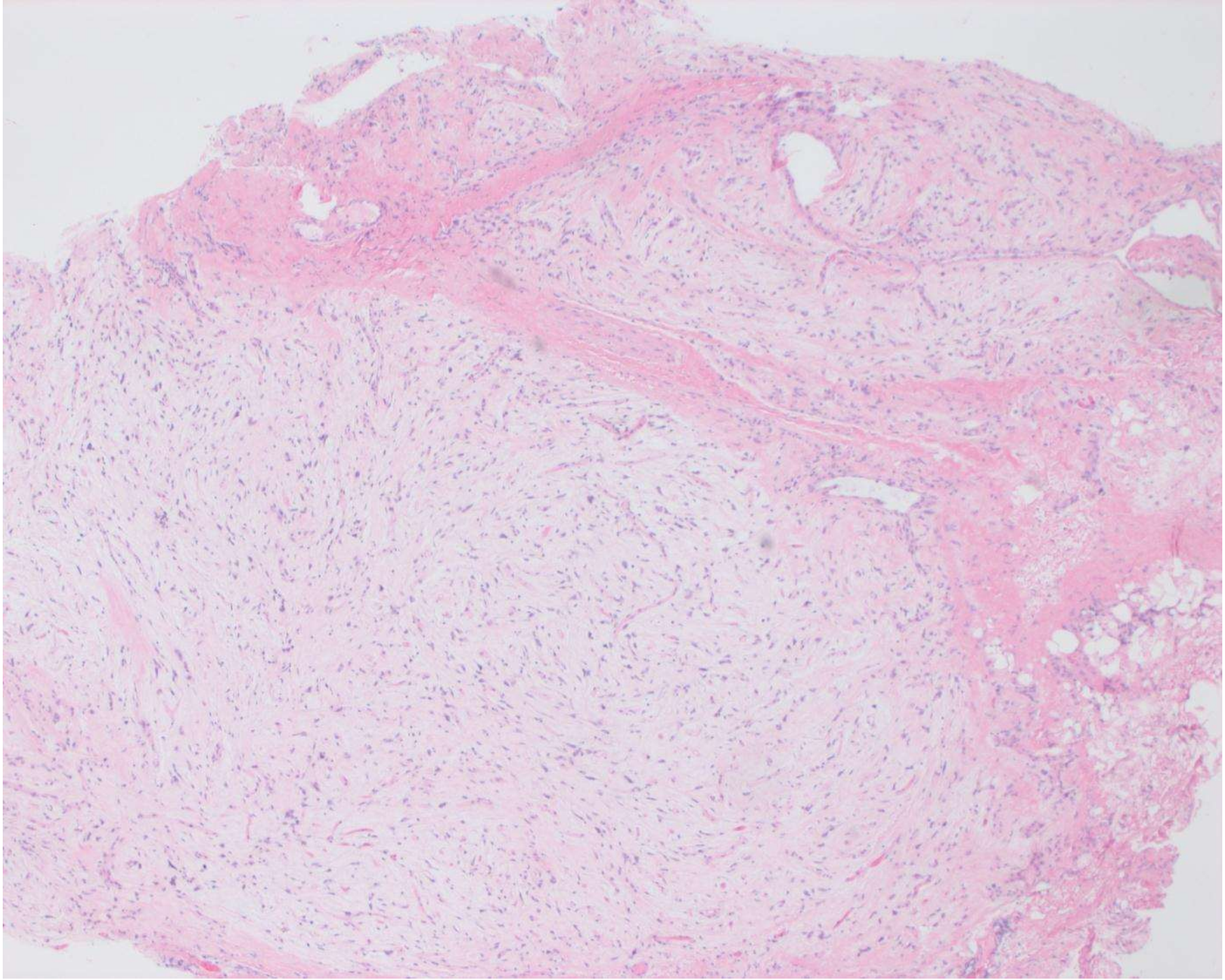
Imaging

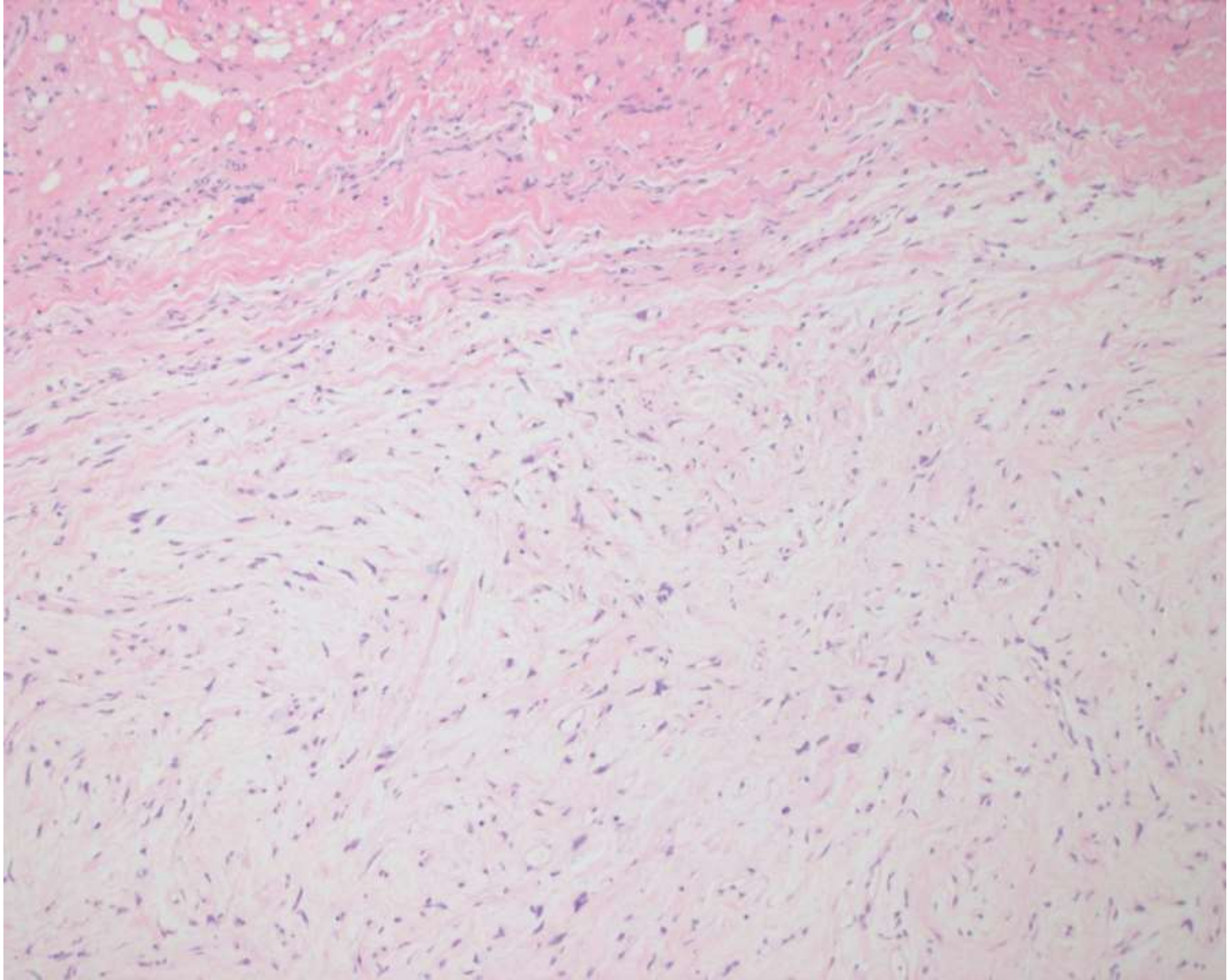


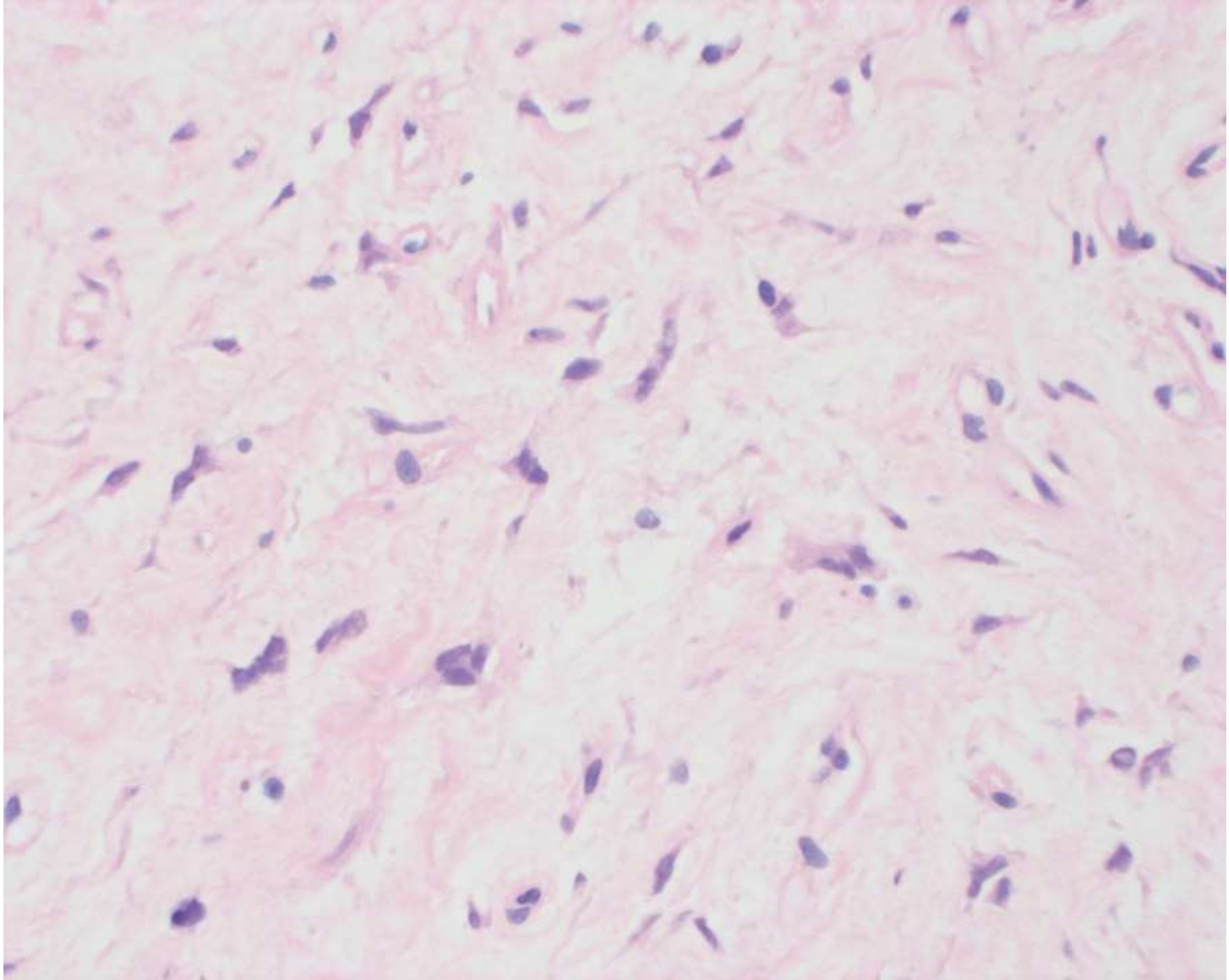
Axial FS T2

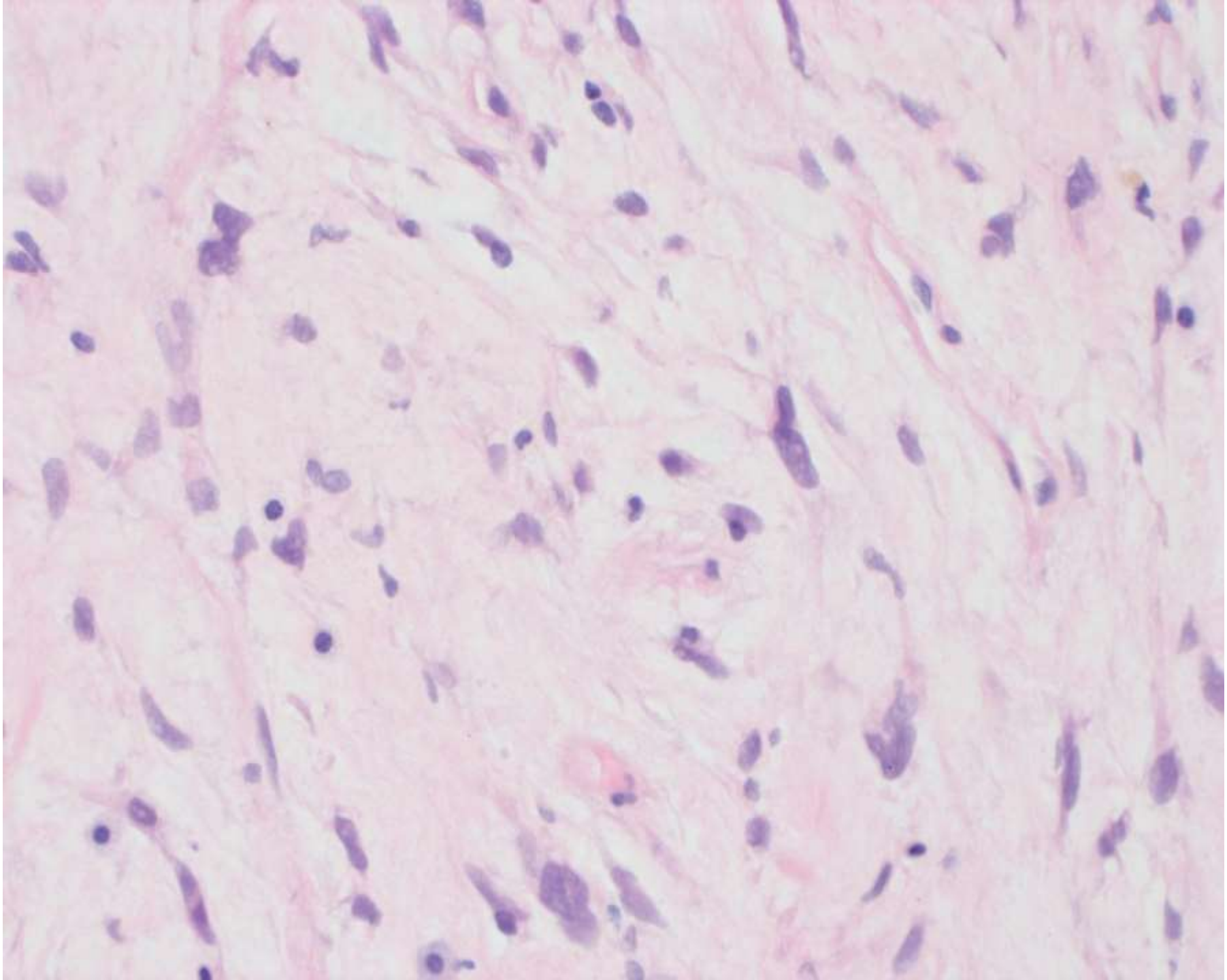


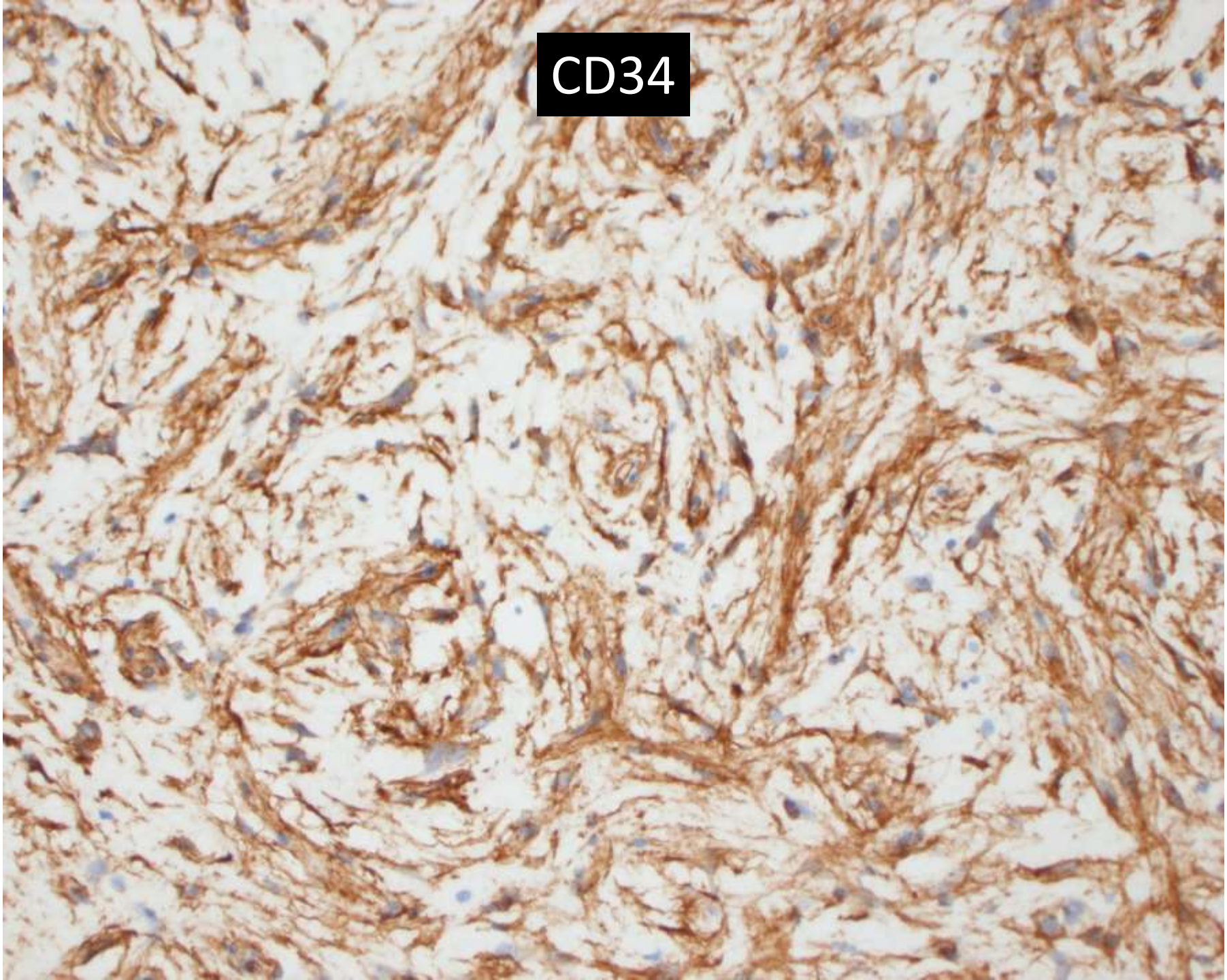
Axial FS T1

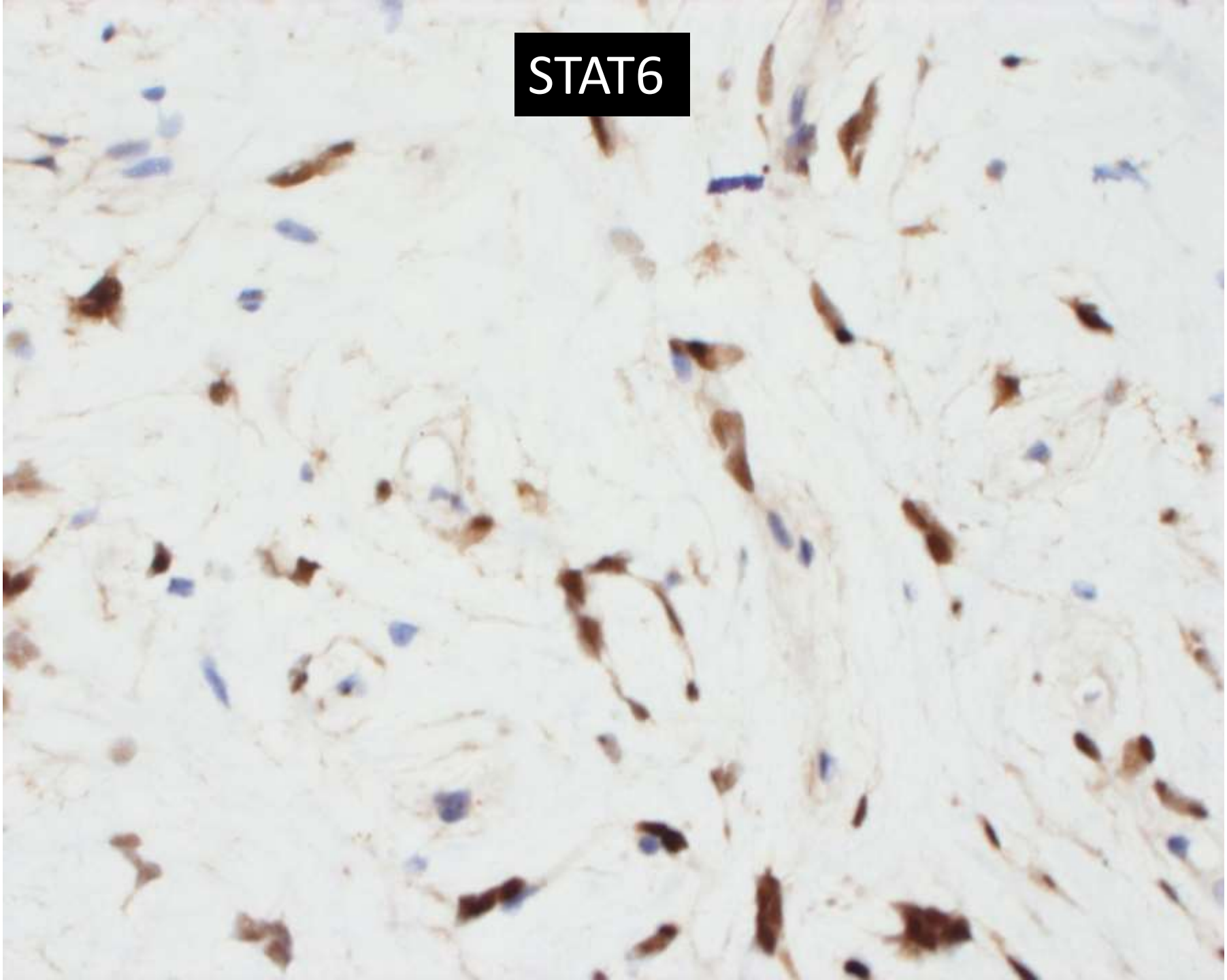









CD34


STAT6

IHC results summary

Positive	Negative
CD34	MUC4
STAT6	Keratin
	Desmin
	S100

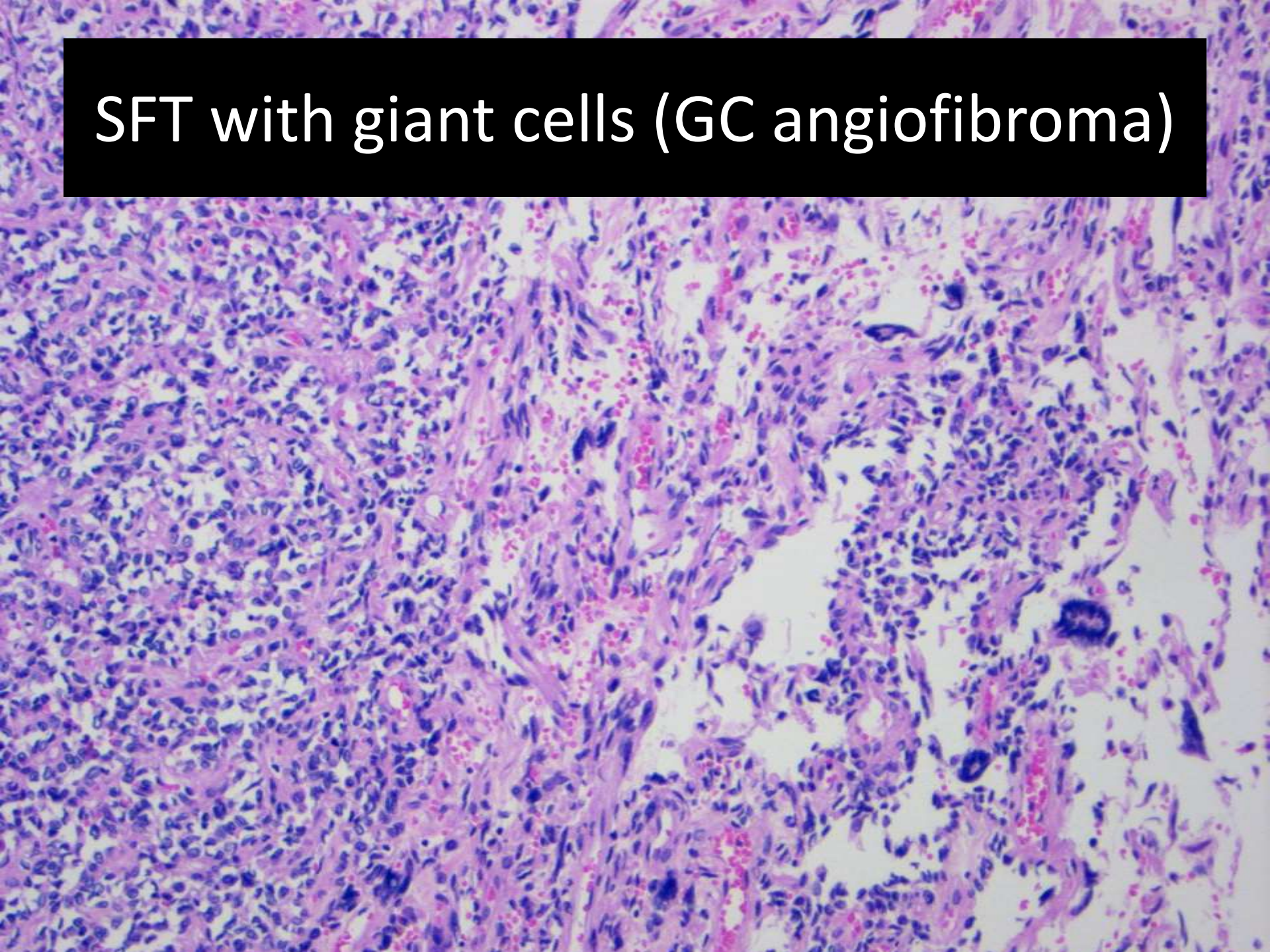
Diagnosis

- Solitary fibrous tumor (SFT) with giant cells
  - so-called “giant cell angiofibroma”

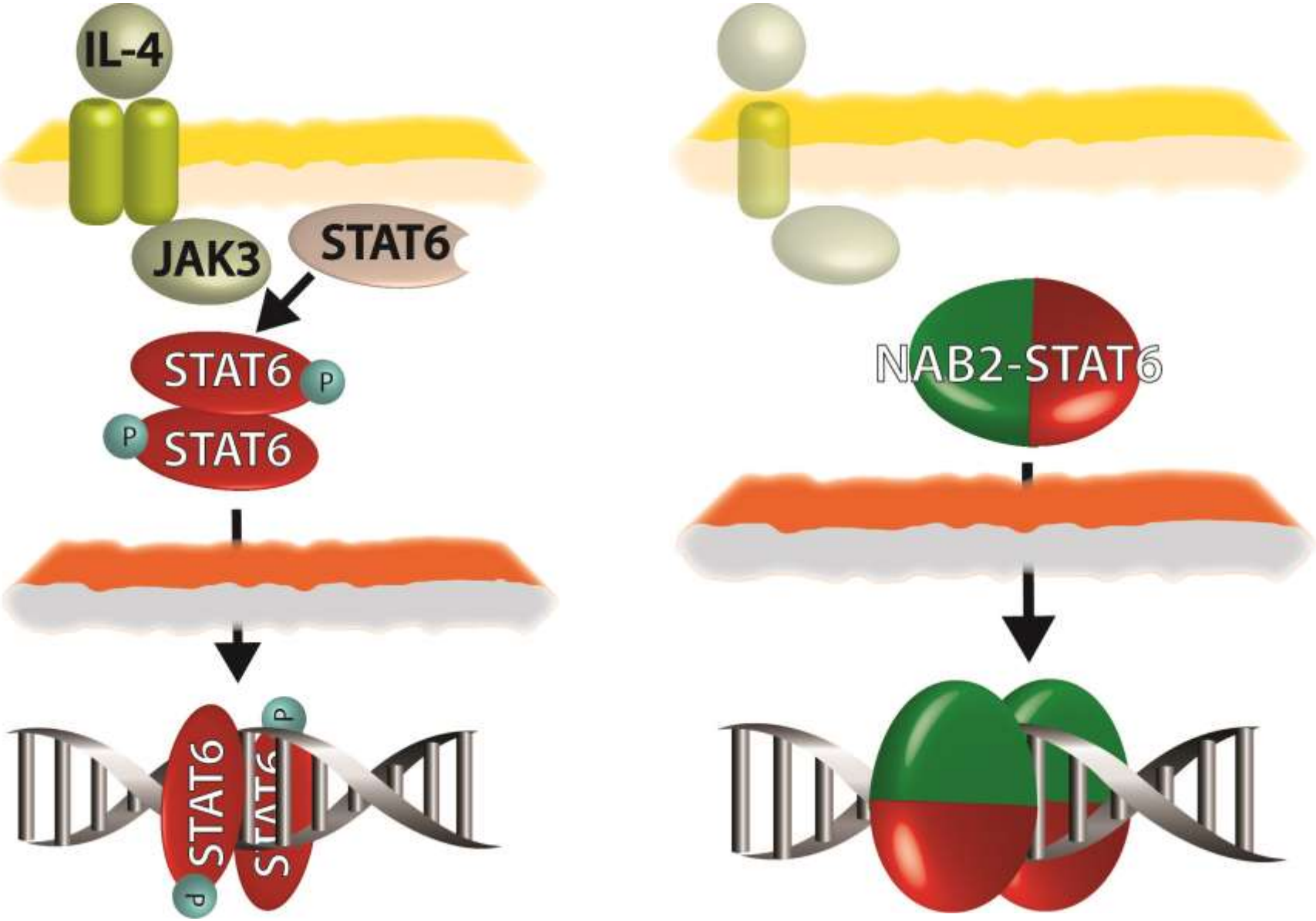
Discussion: SFT with giant cells

- Predilection for head and neck, esp. orbit
- Usually cured with simple excision
  - SFT can metastasize, unpredictable
- Inv12(q13q13) →*NAB2-STAT6* fusion
  - Requires RT-PCR (7+ probe pairs due to variants)
  - Most common variant (ex4 to ex2/4) →thoracic
  - Results in STAT6 *nuclear* expression, regardless of exact fusion variant

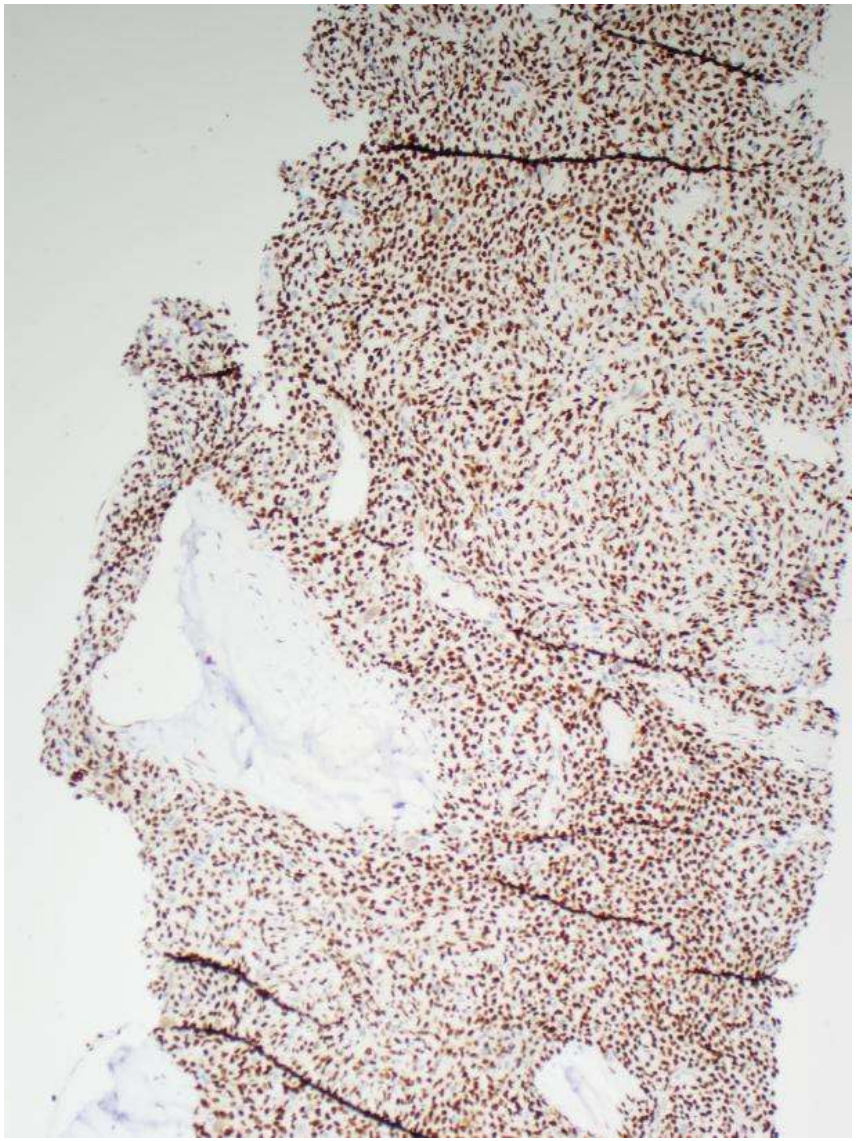
SFT with giant cells (GC angiofibroma)

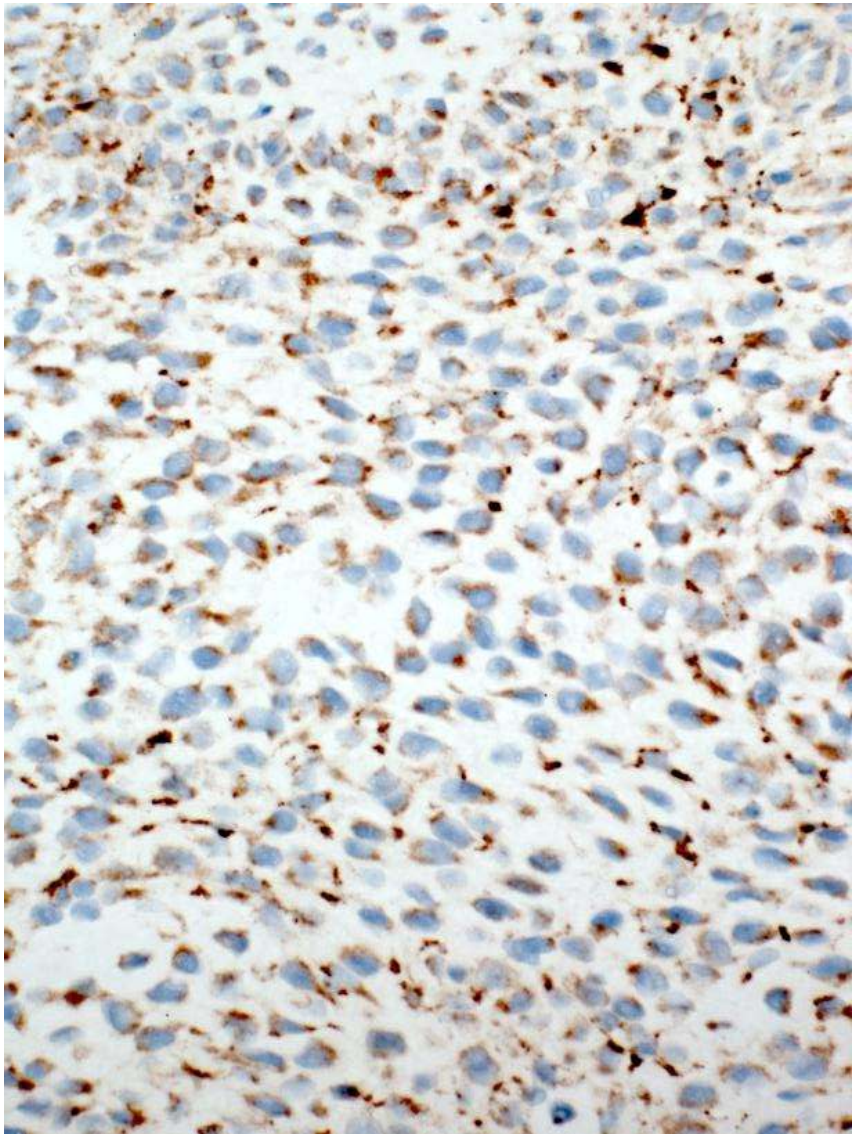


Why does this antibody work so well?

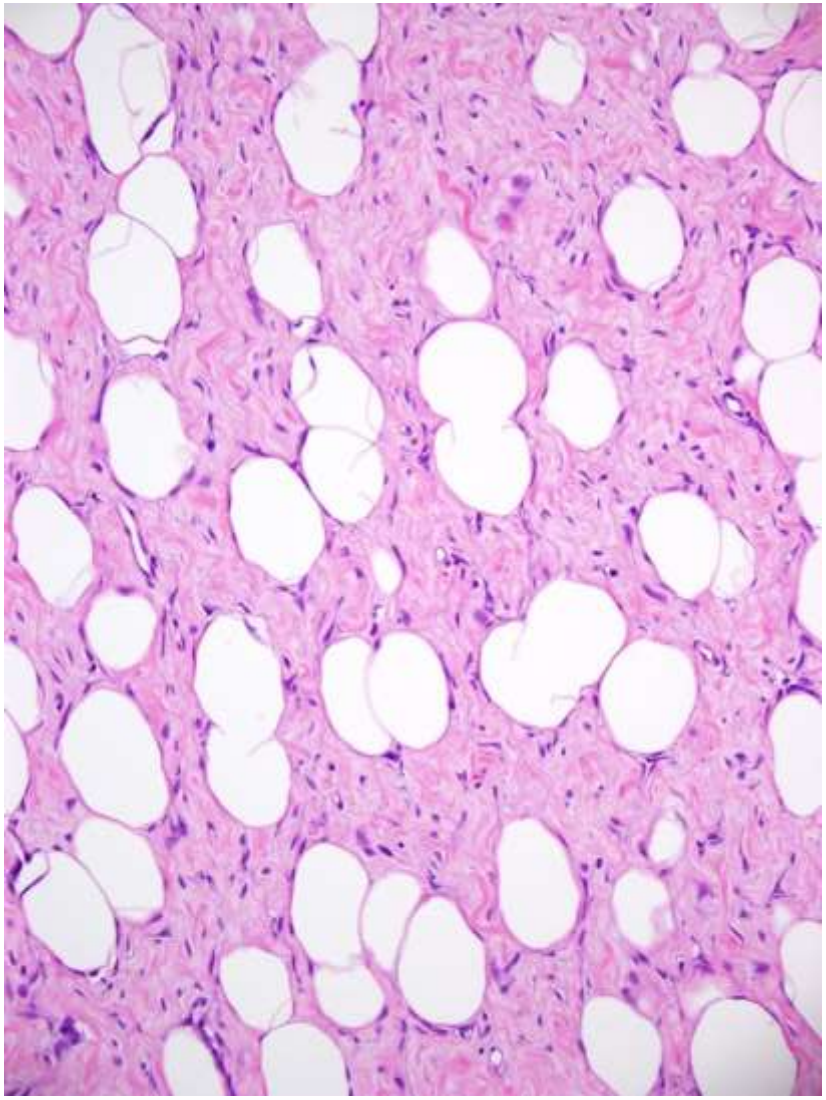


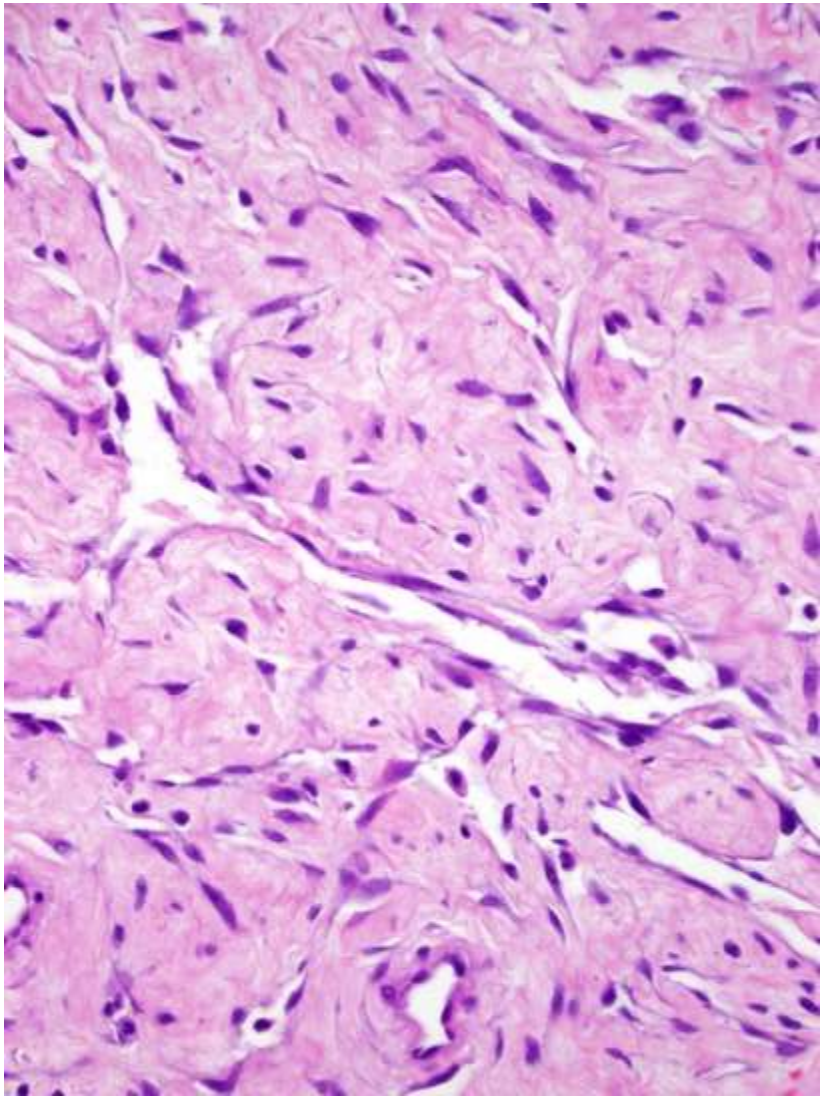
STAT6





GC *fibroblastoma* (pediatric DFSP)





References

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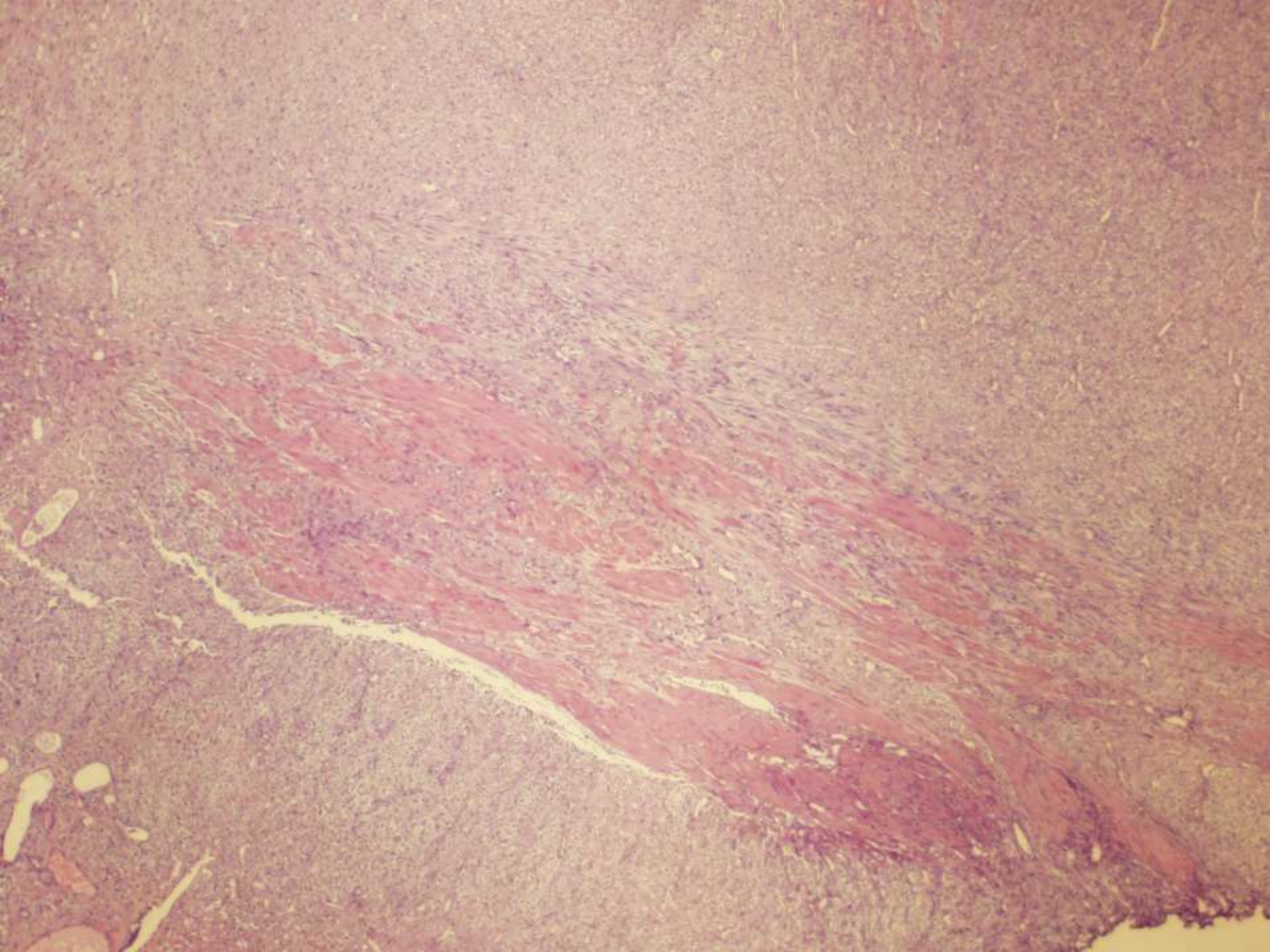
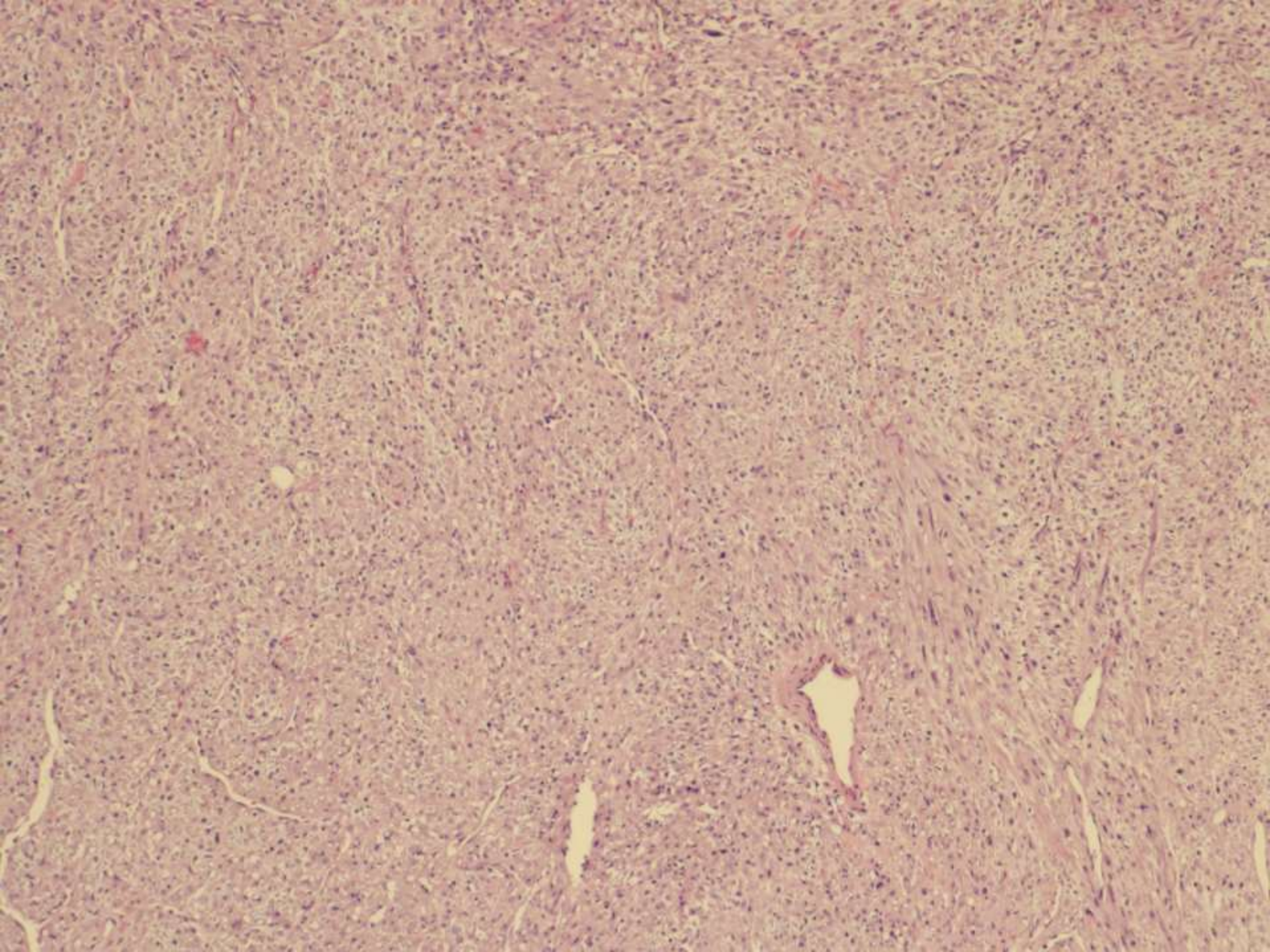
- Kao YC et al. Clinicopathological and genetic heterogeneity of the head and neck solitary fibrous tumours: a comparative histological, immunohistochemical, and molecular study of 36 cases. Histopathology Epub 2015
- Tai HC et al. NAB2-STAT6 fusion types account for clinicopathological variations in solitary fibrous tumors. Mod Pathol 2015;28:1324-35

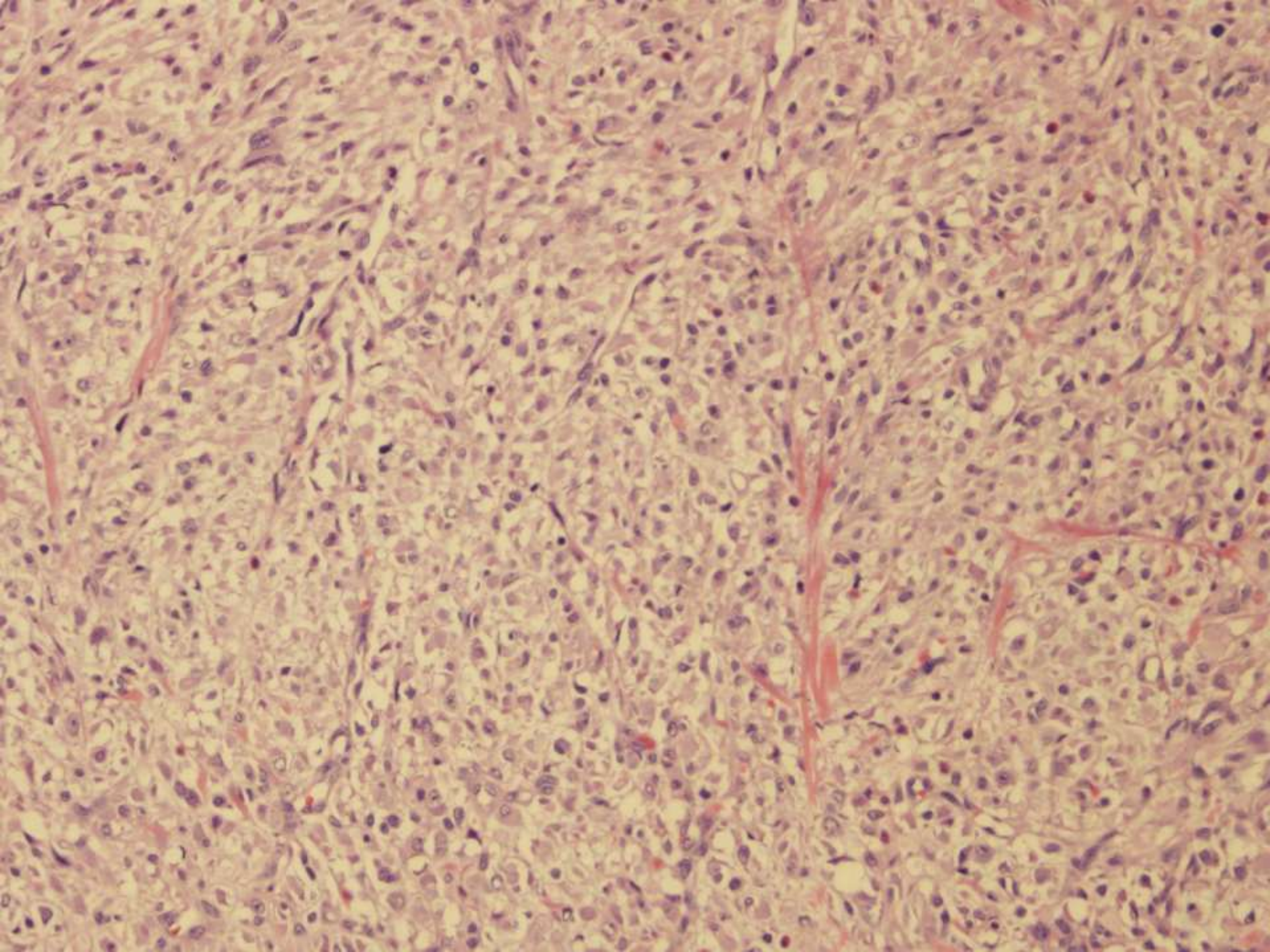
SB 5995

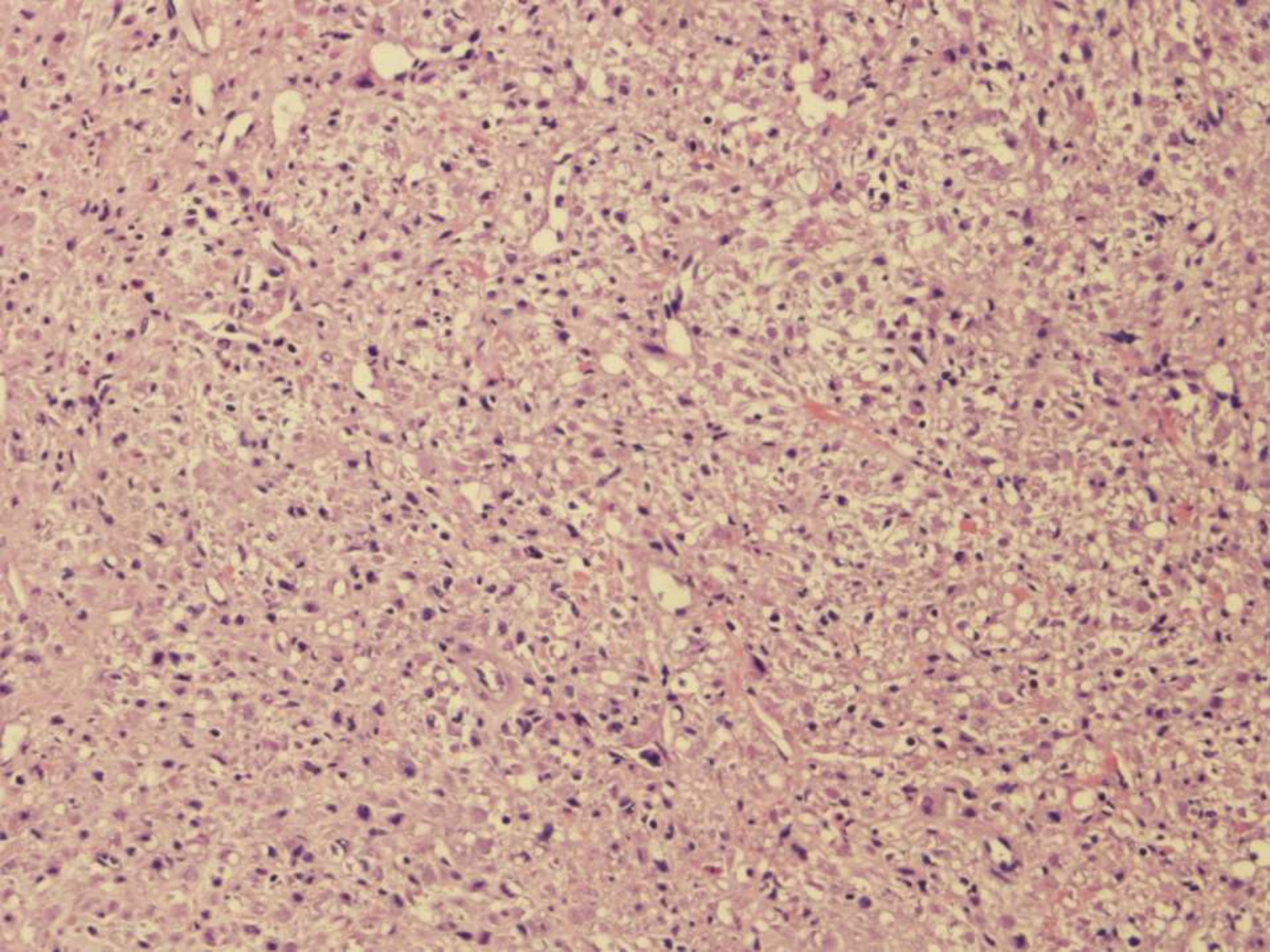
58-year-old man with 2 day history of gross hematuria.

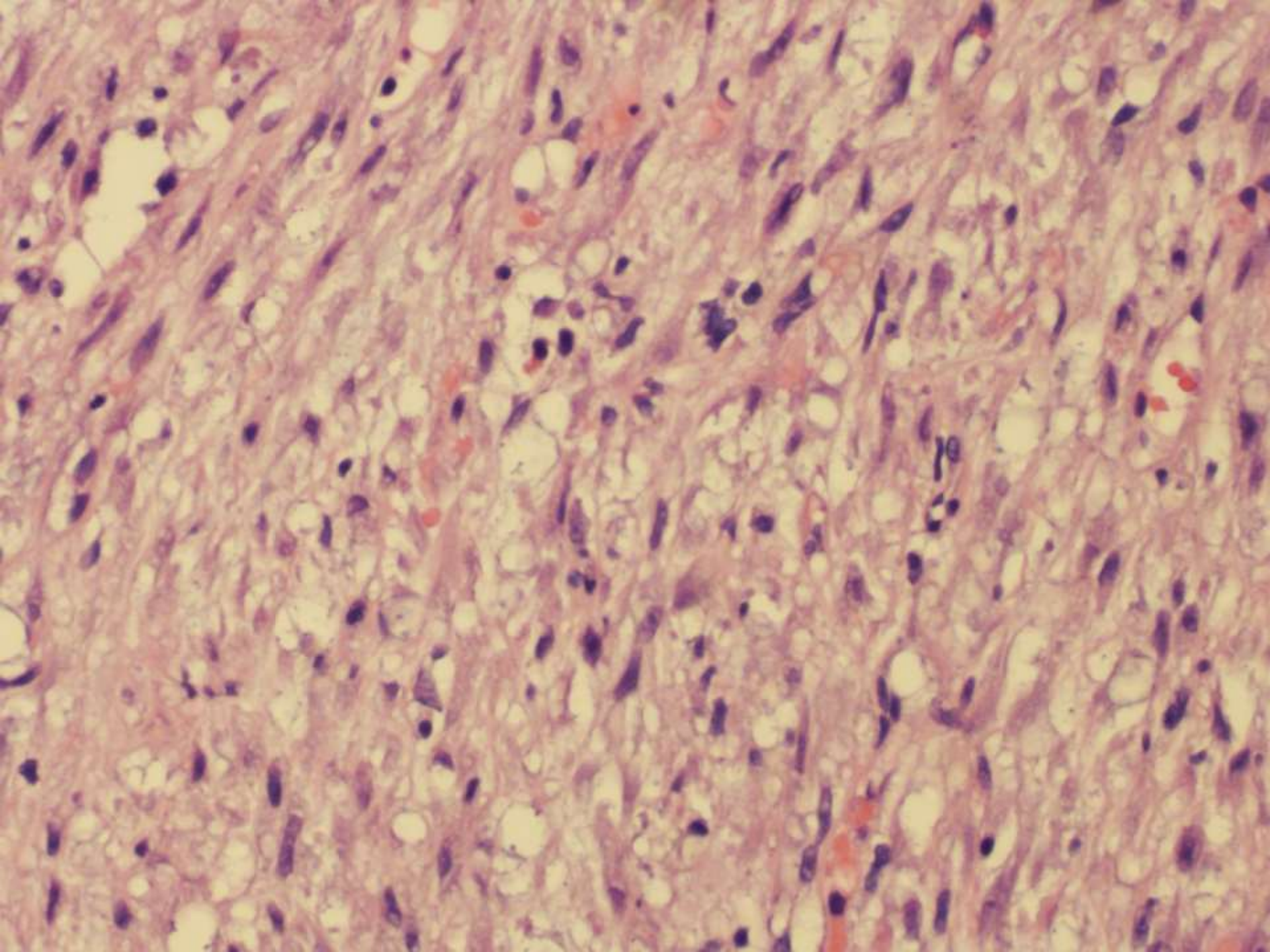
Sarah Cherny; Kaiser San Francisco







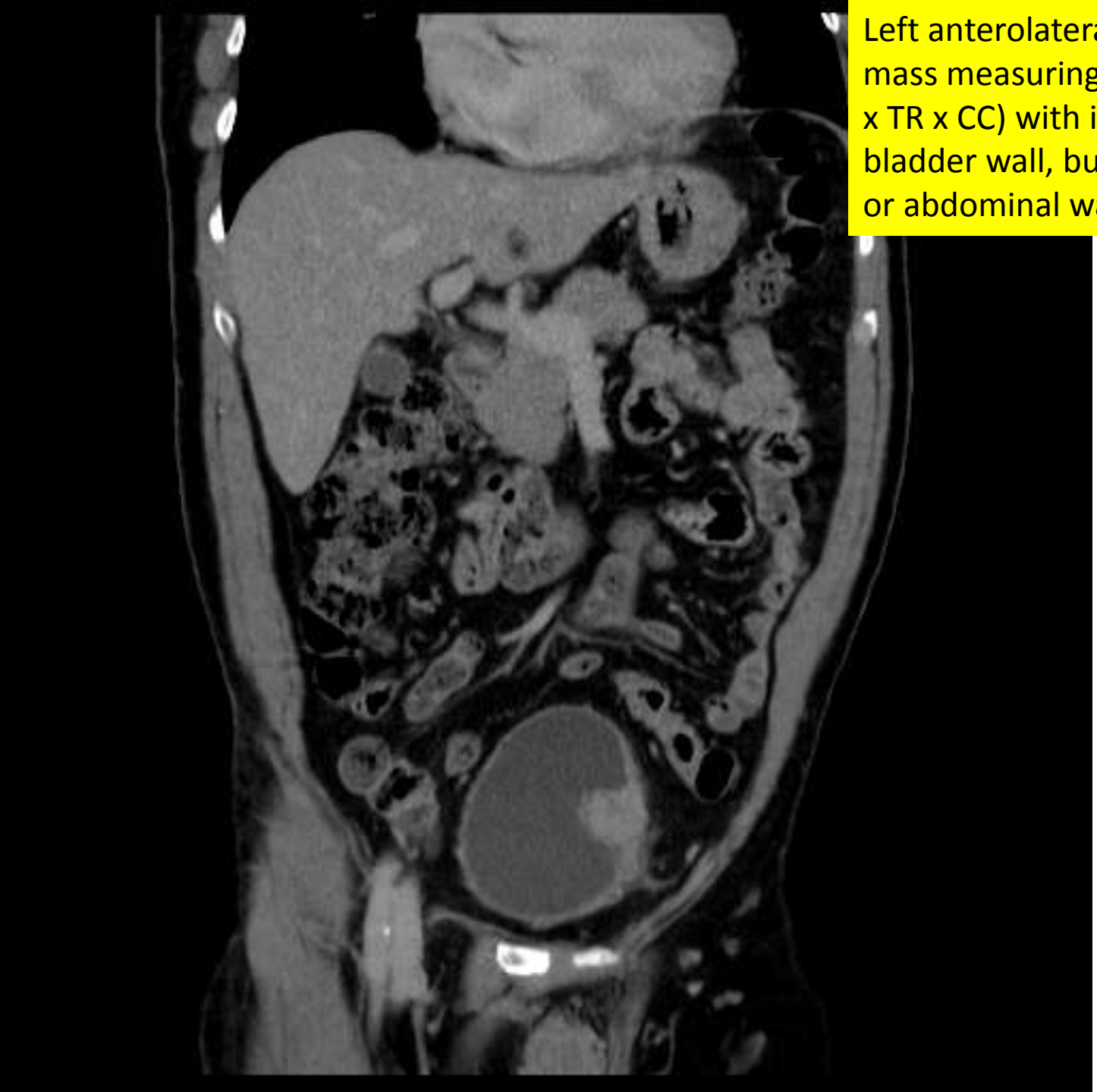




DIAGNOSIS?

- Benign myofibroblastic proliferation of the urinary bladder
  - Inflammatory myofibroblastic tumor
  - Inflammatory pseudotumor
  - Postoperative spindle cell tumor
  - Pseudosarcomatous myofibroblastic proliferation
  - Pseudosarcomatous fibromyxoid tumor

- Clinical
  - Rare
  - Usually 2nd to 4th decade; may also occur in children
  - Gross hematuria > abdominal pain, irritative or obstructive voiding symptoms
  - Polypoid or submucosal nodule, ranging from 1.5 to 13 cm



Left anterolateral fungating bladder mass measuring 3.0 x 2.0 x 2.4 cm (AP x TR x CC) with invasion through the bladder wall, but not to nearby organs or abdominal wall.

- Histology
  - Variably cellular proliferation of myofibroblasts
    - Fine, evenly distributed nuclear chromatin
    - Tapered elongate cytoplasmic processes
    - Marked variation in nuclear size
    - Scattered macronucleoli
    - Loose fascicular architecture
    - Mitotic activity may be brisk
  - Invasion of muscularis propria is common
    - Does not denote increased risk for aggressive behavior
  - Admixed inflammatory cells, including eos and plasma cells

- Ancillary tests:
  - Commonly co-express actin-SM and low molecular weight keratins
    - Nonreactive for HMWK
  - ALK1 expression by IHC varies widely: 8-89%
  - Desmin reactivity variable

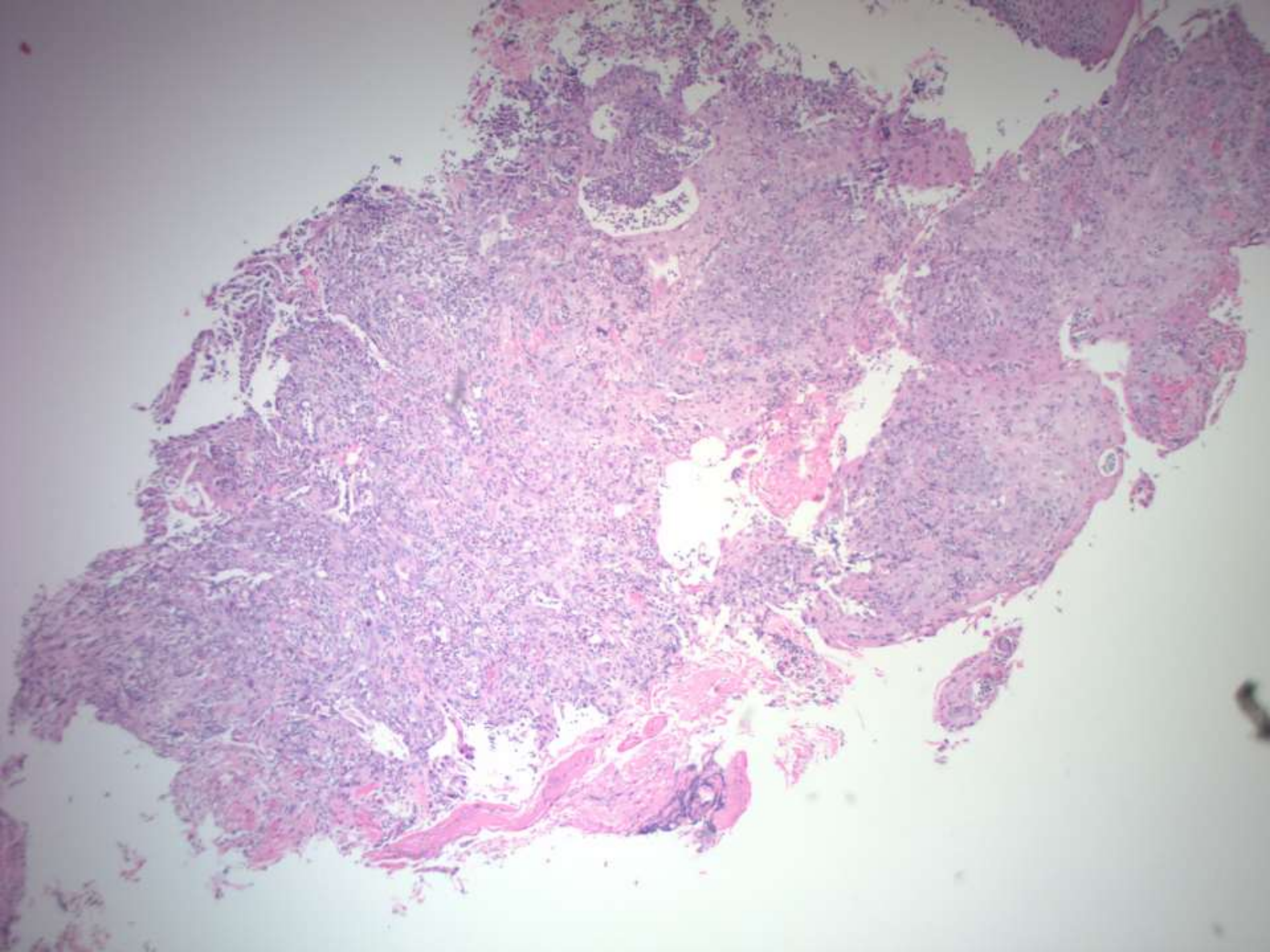
- Ddx:
  - Rhabdomyosarcoma
  - Sarcomatoid urothelial carcinoma
  - Leiomyosarcoma
  - Fibromyxoid nephrogenic adenoma
  - Urothelial carcinoma with myxoid stroma

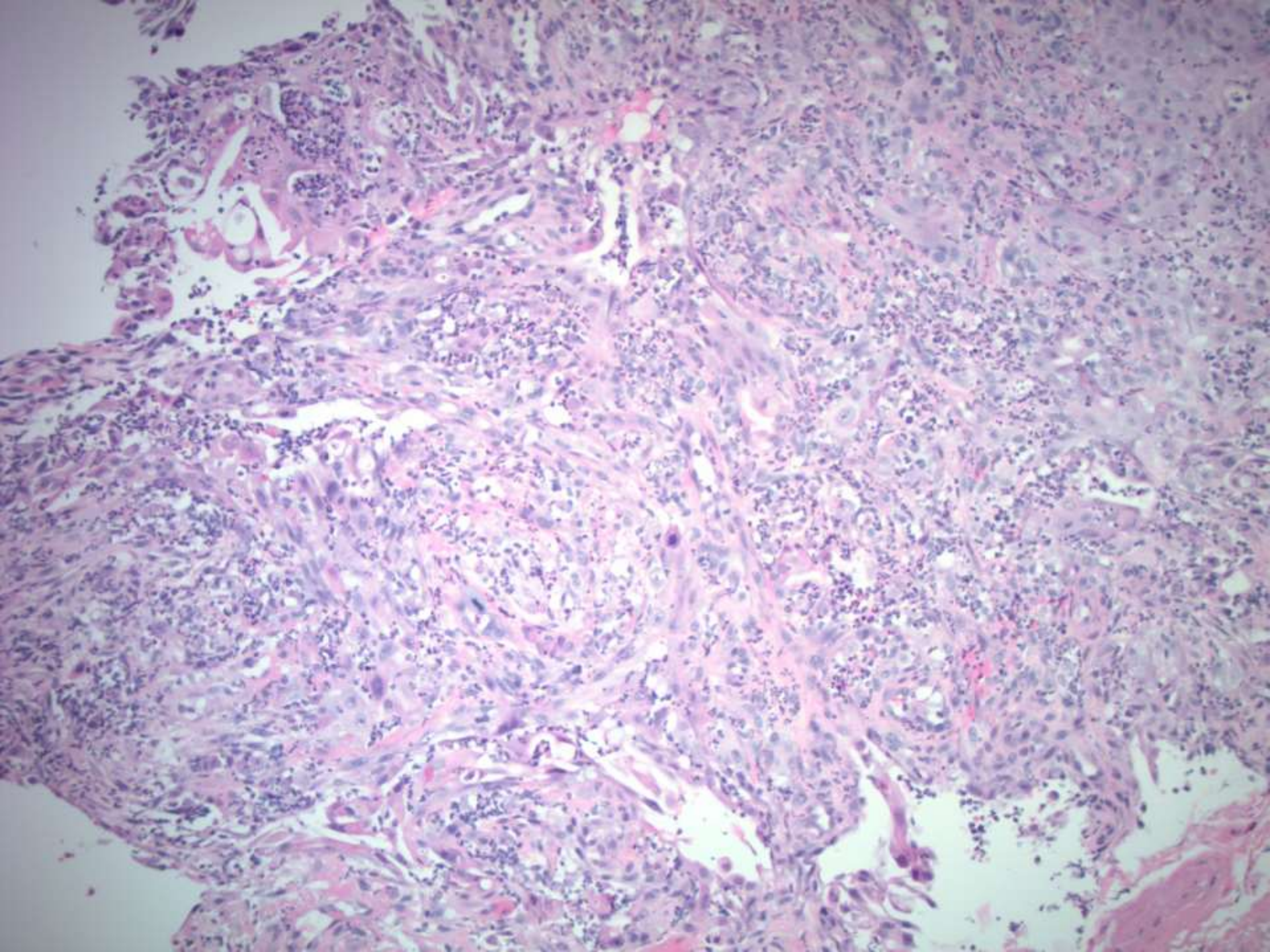
- Prognosis
  - Risk of local recurrence after transurethral resection varies between studies, but approaches 20% in one series
  - No metastases have been reported to date

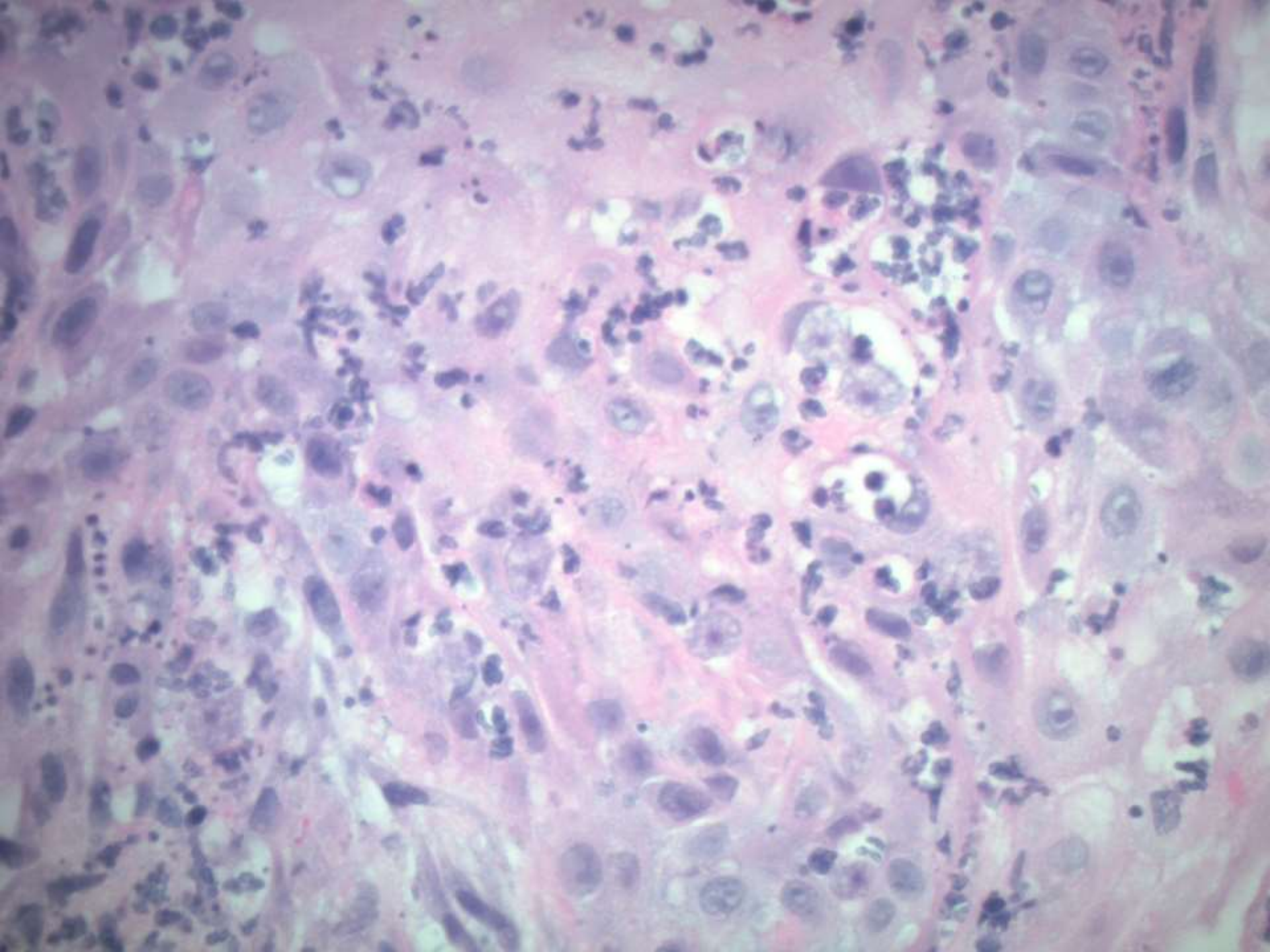
SB 5996

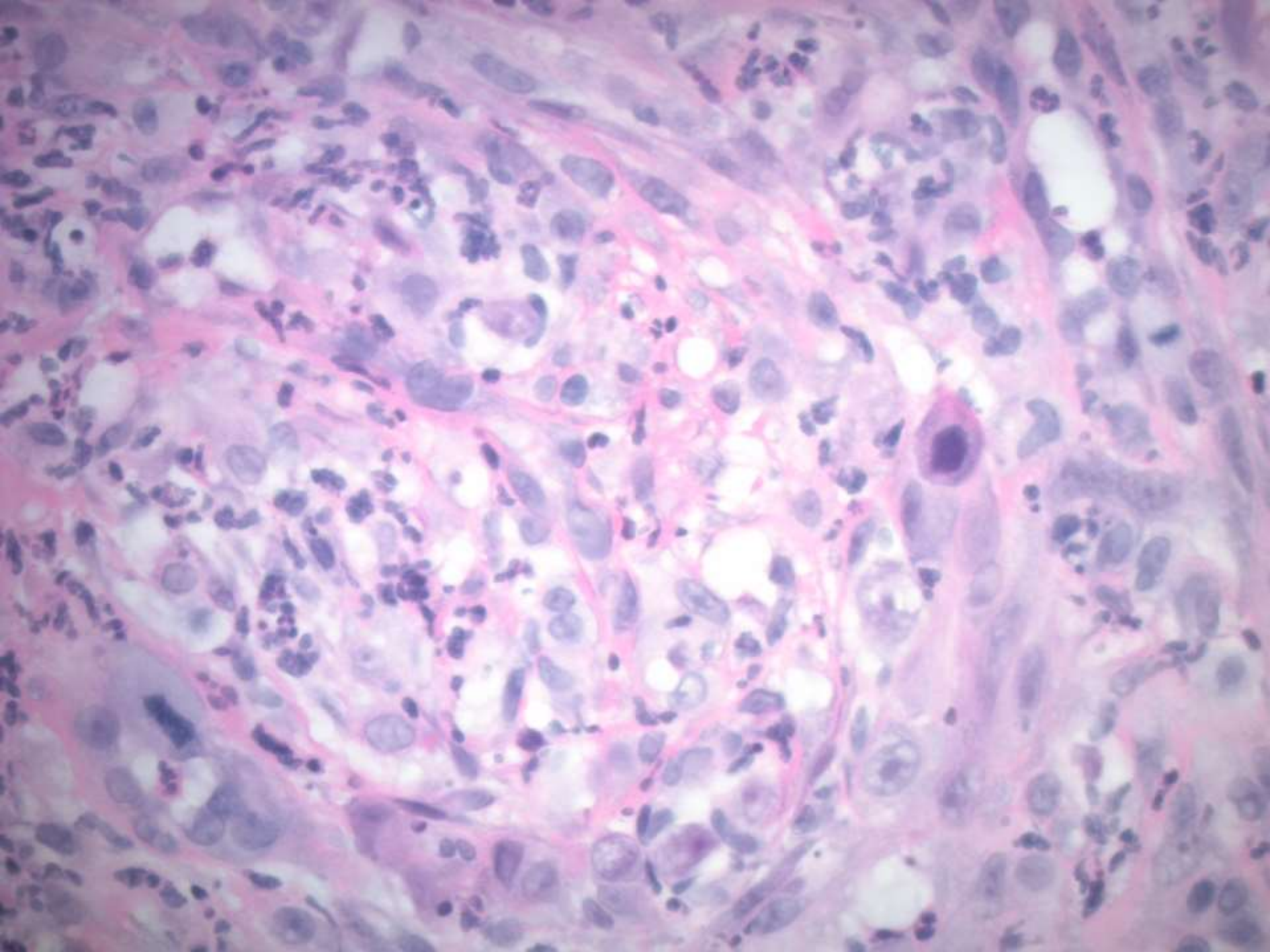
Heart transplant patient, nasal septum mass biopsied.

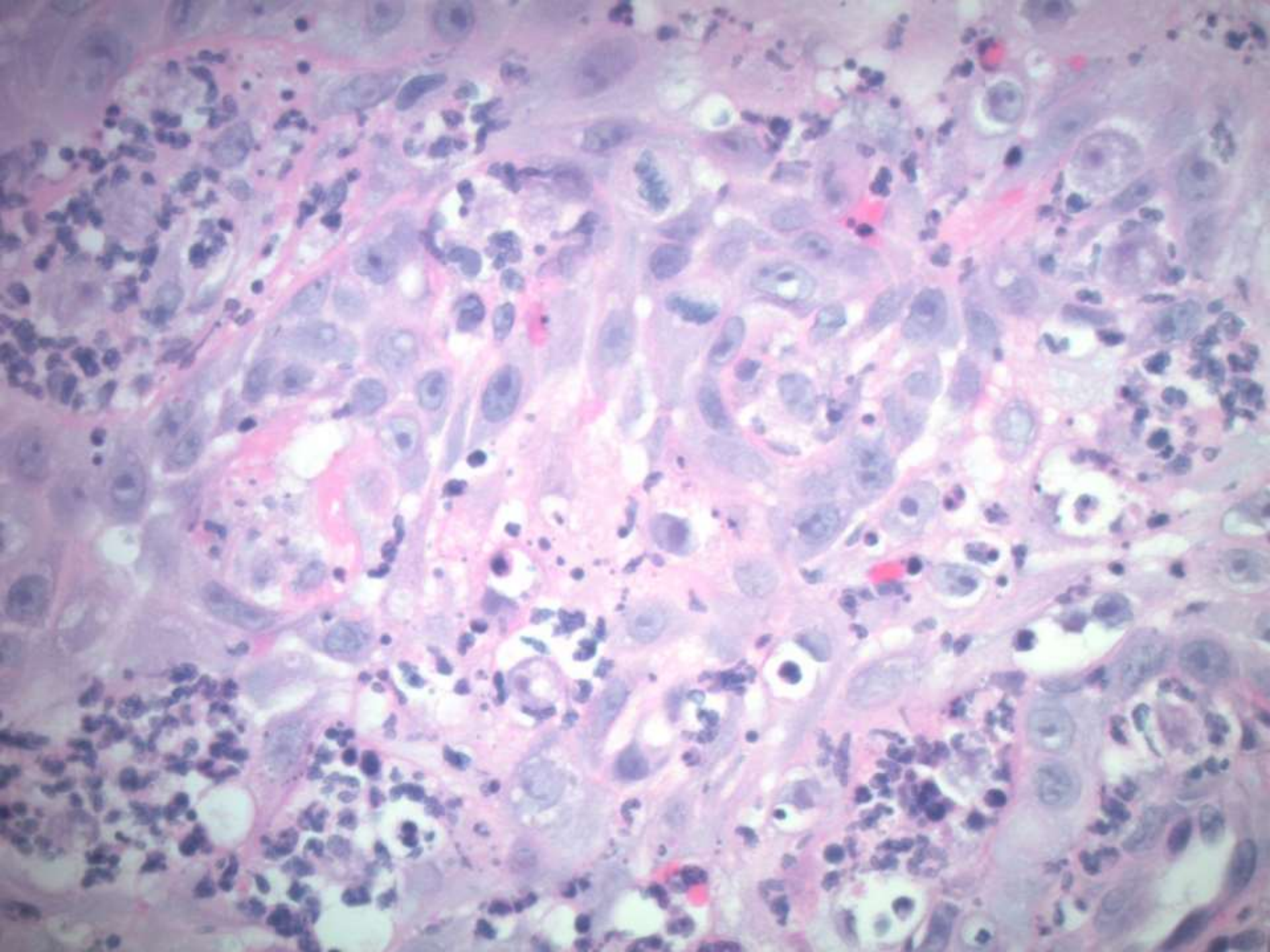
David Levin; Washington Hospital



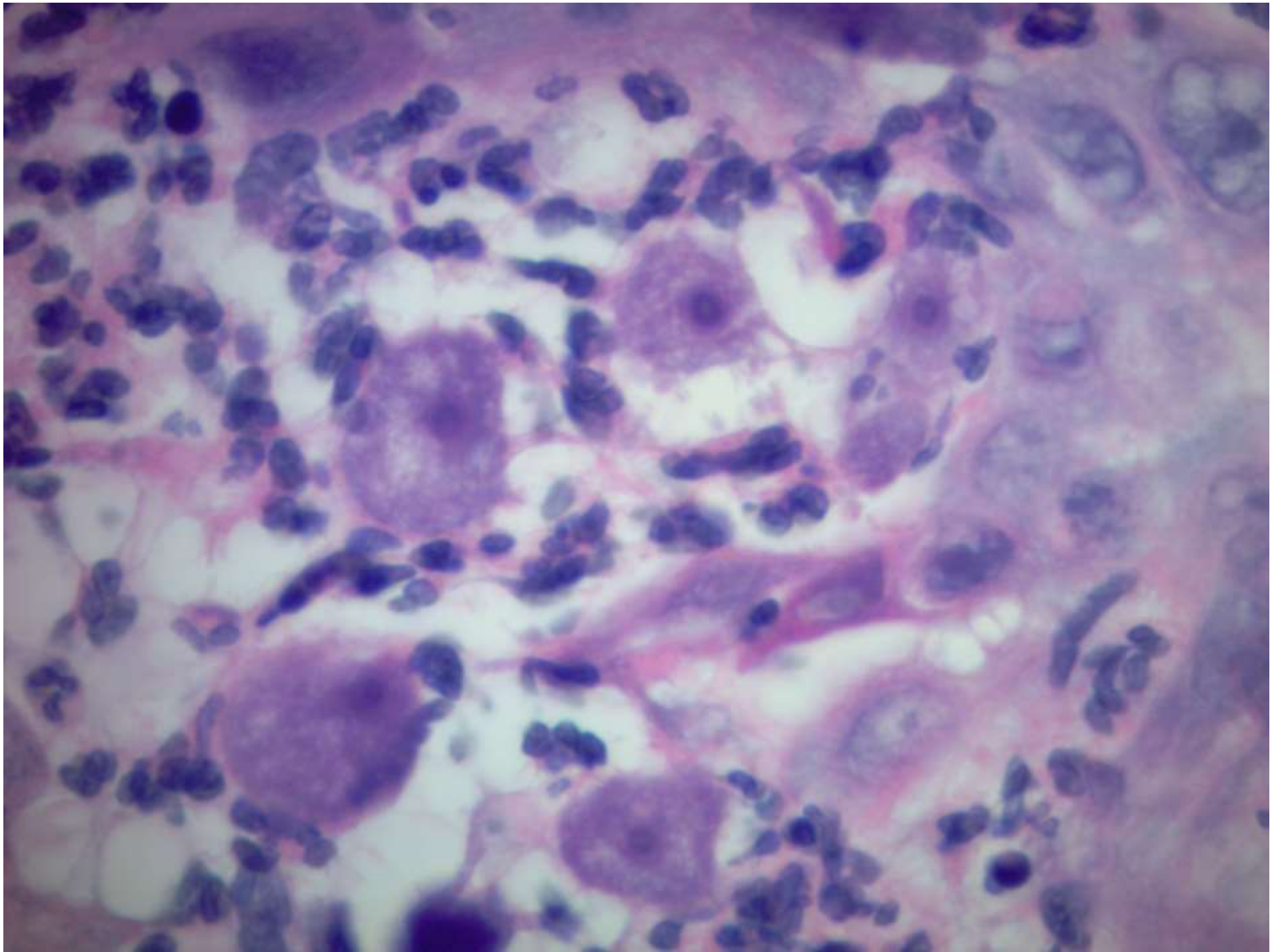








DIAGNOSIS?



DISSEMINATED ACANTHAMOEBIASIS

- 60 yo female with NICM s/p OHT dec 2014 c/b post op tamponade and ESRD
- onset of sx april 2015, bx dx rhinosinusitis amoebiasis june2015 rapidly followed by skin and bone bx confirmation of DA.
- Acanthamoeba confirmed by CDC using ipox and pcr
- This patient was treated with fluconazole, miltefosine (only available from CDC), flucytosine
- Transferred to USCF, continued on antibiotics and had immunosuppressant medication meds adjusted (d/c valcyte and monitored tac) discharged 2 weeks later on 7/3/15. Condition on discharge "fair"

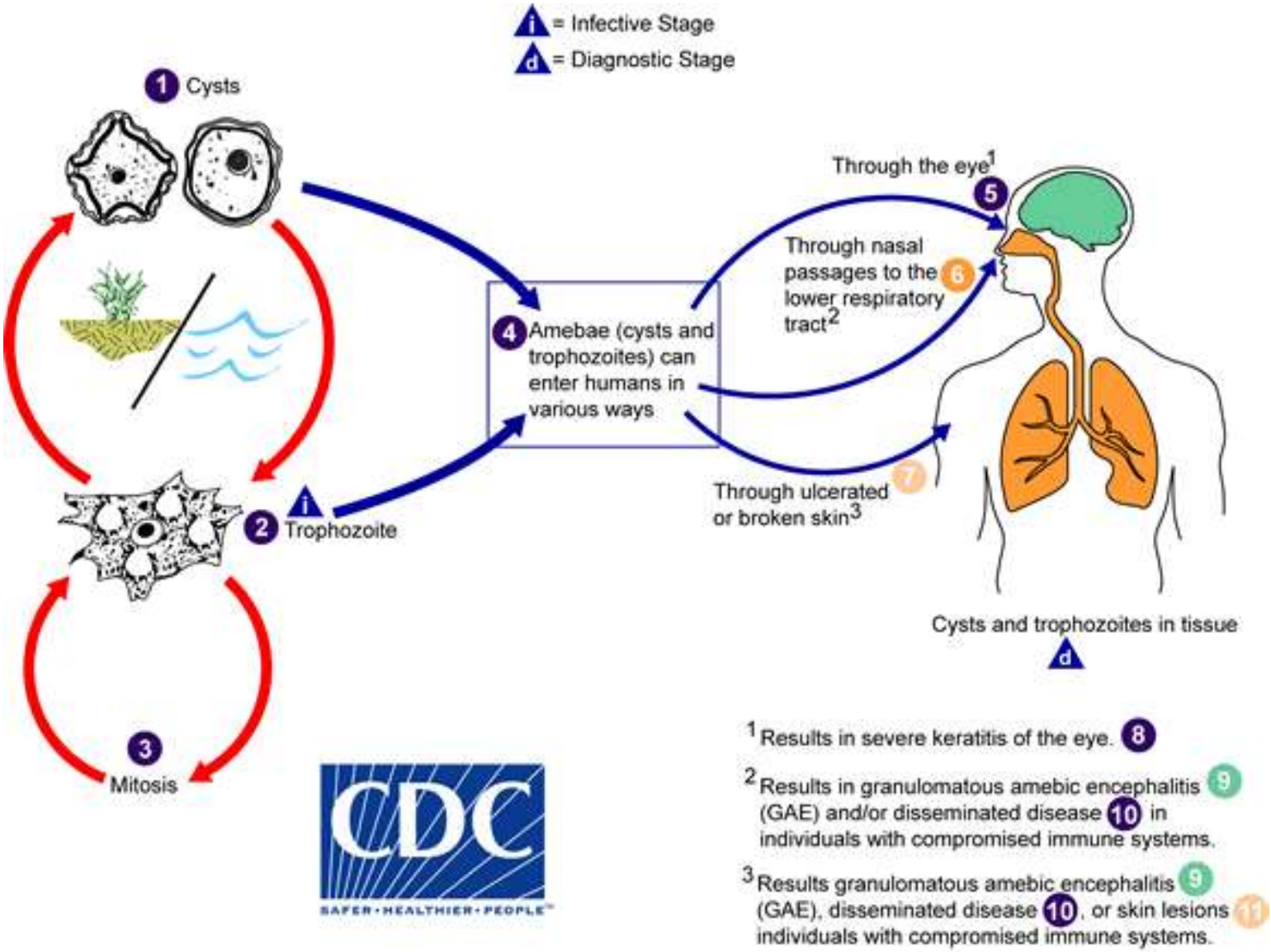
ACANTHAMOEBA

- Free-living amoebas are environmental protozoan parasites with worldwide distribution.
- Four genera cause disease in humans: *Naegleria* (only *N. fowleri*), *Acanthamoeba* (several species), *Balamuthia* (only *B. mandrillaris*), and *Sappinia* (only *S. pedata*)
- All of these species cause central nervous system (CNS) infections,
- 2 types of CNS infections-- "primary amebic meningoencephalitis" N. Fowleri and "granulomatous amebic encephalitis" Acanthamoeba species, Balamuthia and Sappinia
- *Acanthamoeba and Balamuthia* and may also cause localized non-CNS infections (eg. acanthamoebiasis keratitis) and disseminated infections
- Exposure is through lungs, olfactory neuroepithelium and ulcerated/broken skin
- People with AIDS, diabetes, pregnancy, liver disease, alcoholism, steroids xs antibiotics, lupus, cancer and organ ransplant are at increased risk
- In the United States, Balamuthia infection might be more common among Hispanic Americans
- Balamuthia and Acanthamoeba can infect anyone, but immunosuppressed are at increased risk

Acanthamoeba spp. have been found in soil; fresh, brackish, and sea water; sewage; swimming pools; contact lens equipment; medicinal pools; dental treatment units; dialysis machines; heating, ventilating, and air conditioning systems; mammalian cell cultures; vegetables; human nostrils and throats; and human and animal brain, skin, and lung tissues.

REFERENCES

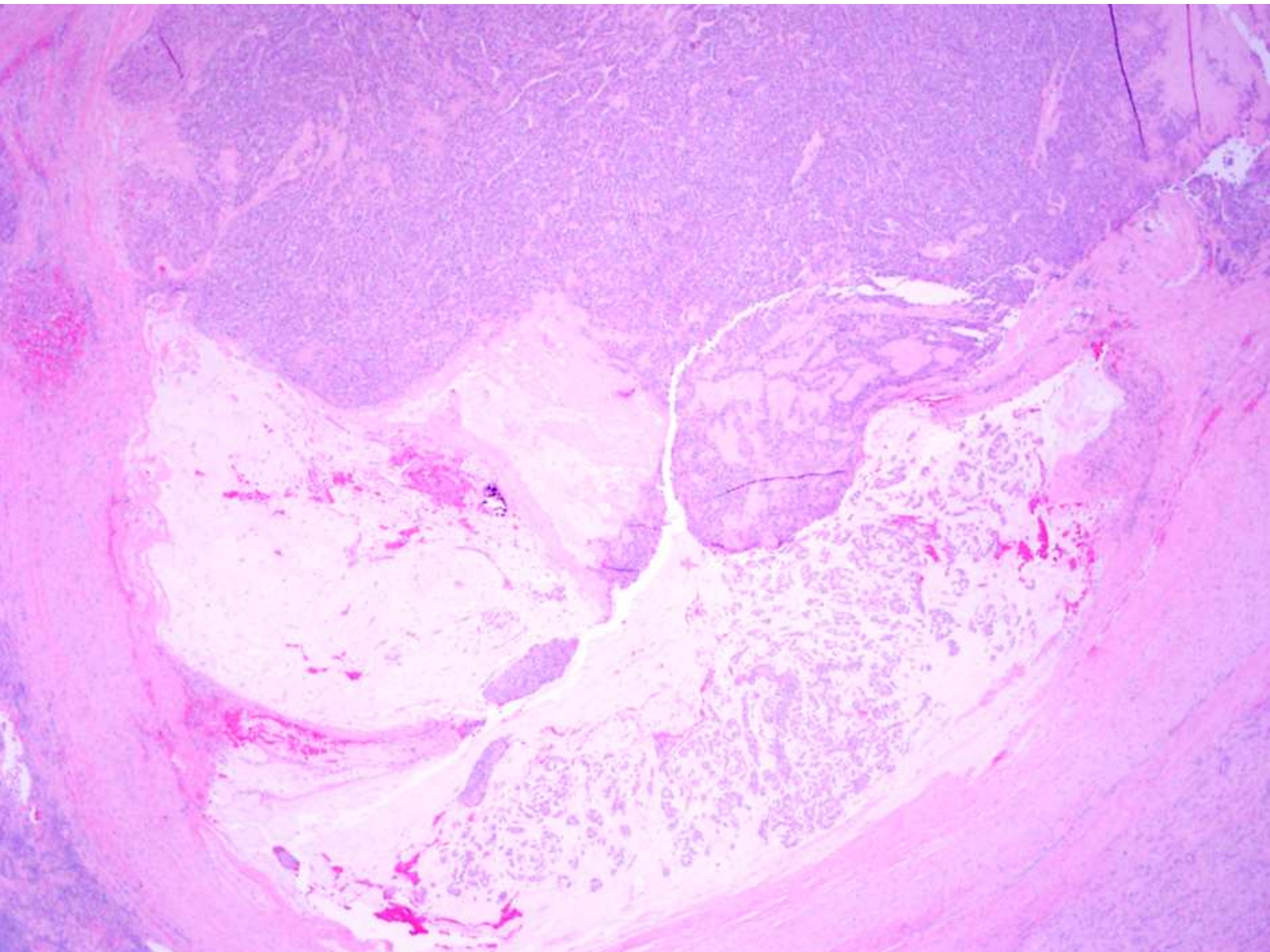
- CDC
- UP TO DATE
- Stéphane Barete, et. al. "Fatal Disseminated Acanthamoeba lenticulata Infection in a Heart Transplant Patient," Emerging Infectious Diseases • www.cdc.gov/eid • Vol. 13, No. 5, May 2007
- Rivera MA[1], Padhya TA. "Acanthamoeba: a rare primary cause of rhinosinusitis." Laryngoscope. 2002 Jul;112(7 Pt 1):1201-3.

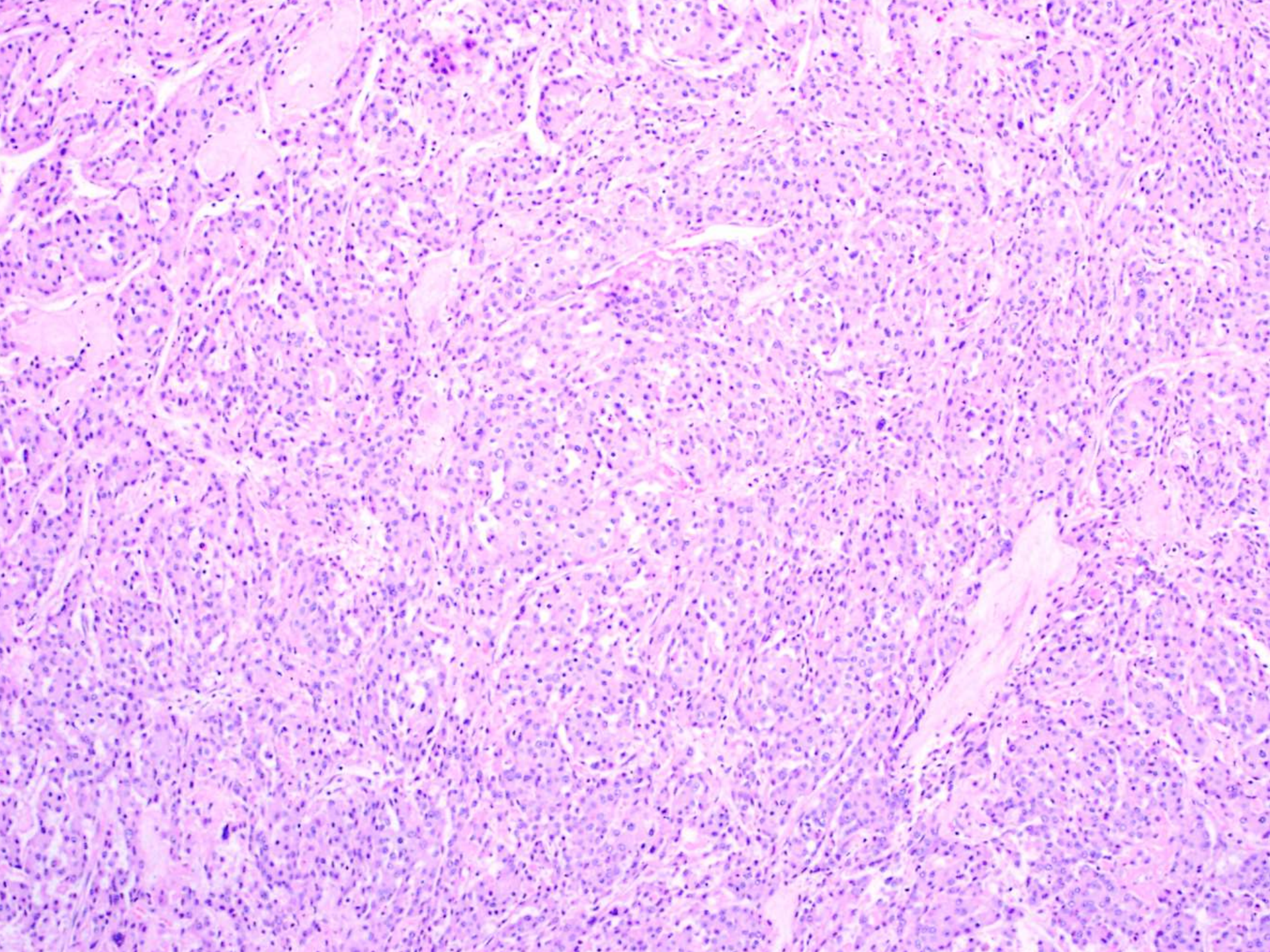

i = Infective Stage
d = Diagnostic Stage
1 Cysts
2 Trophozoite
3 Mitosis
4 Amebae (cysts and trophozoites) can enter humans in various ways
Through the eye[1]
5
Through nasal passages to the lower respiratory tract[2]
6
Through ulcerated or broken skin[3]
7
Cysts and trophozoites in tissue
d
CDC
SAFER·HEALTHIER·PEOPLE™
[1] Results in severe keratitis of the eye. 8
[2] Results in granulomatous amebic encephalitis (GAE) and/or disseminated disease 10 in individuals with compromised immune systems. 9
[3] Results granulomatous amebic encephalitis (GAE), disseminated disease 10, or skin lesions 11 individuals with compromised immune systems. 9

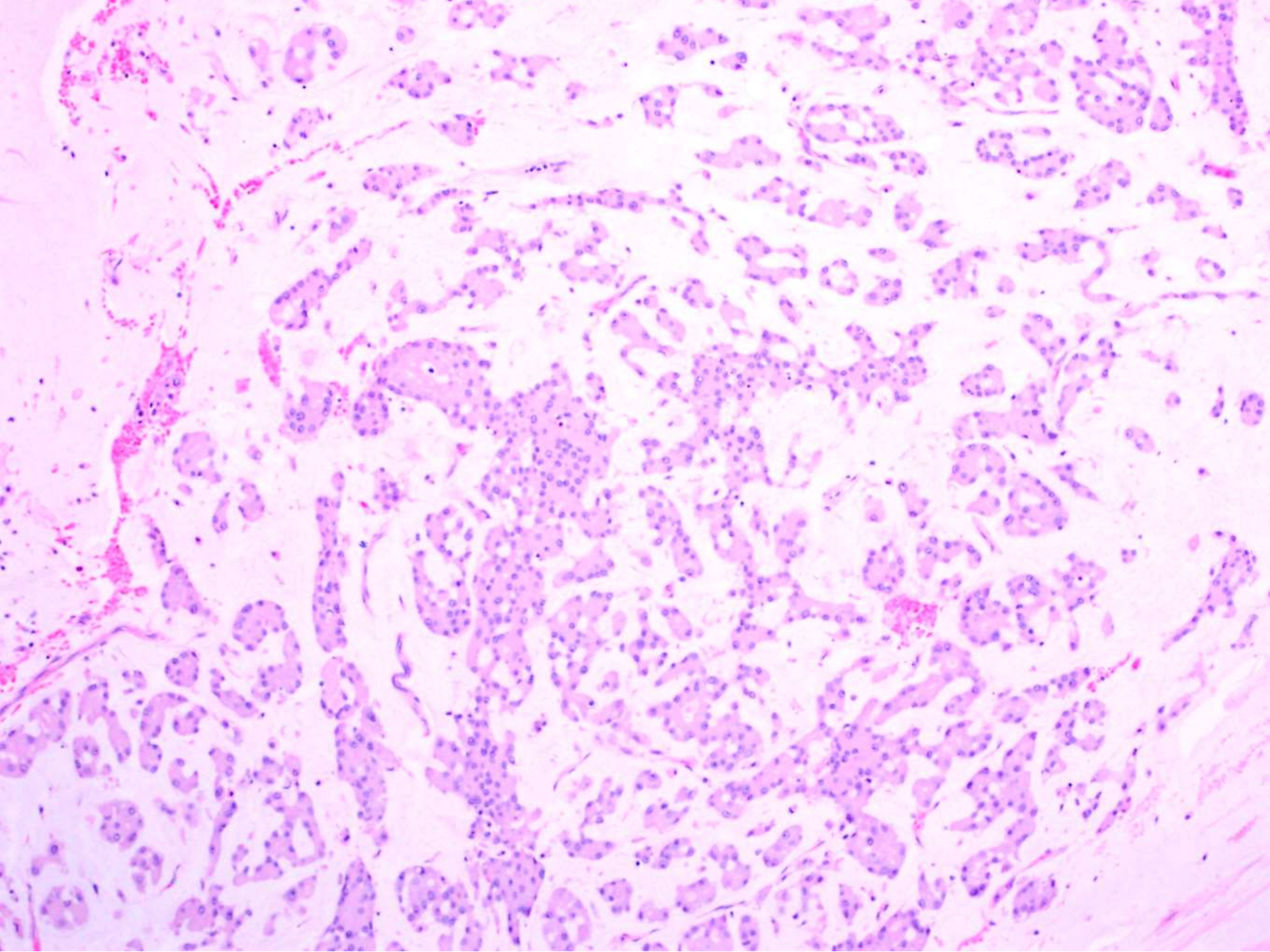
SB 5997

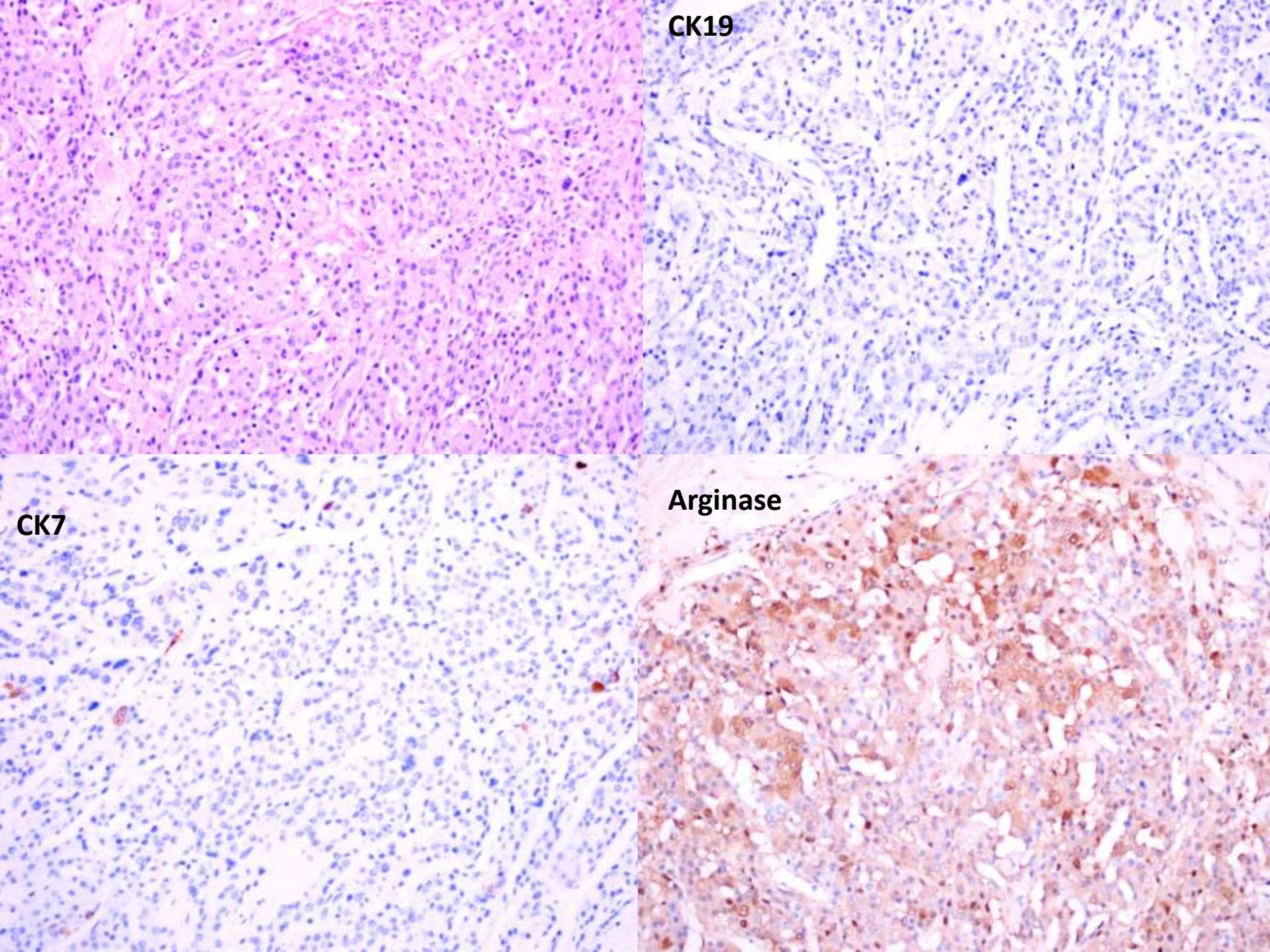
73-year-old man with a left liver tumor concerning for cholangiocarcinoma on imaging study. Left liver FNA biopsy of tumor called mixed HCC-cholangiocarcinoma. Left hepatic lobectomy submitted.

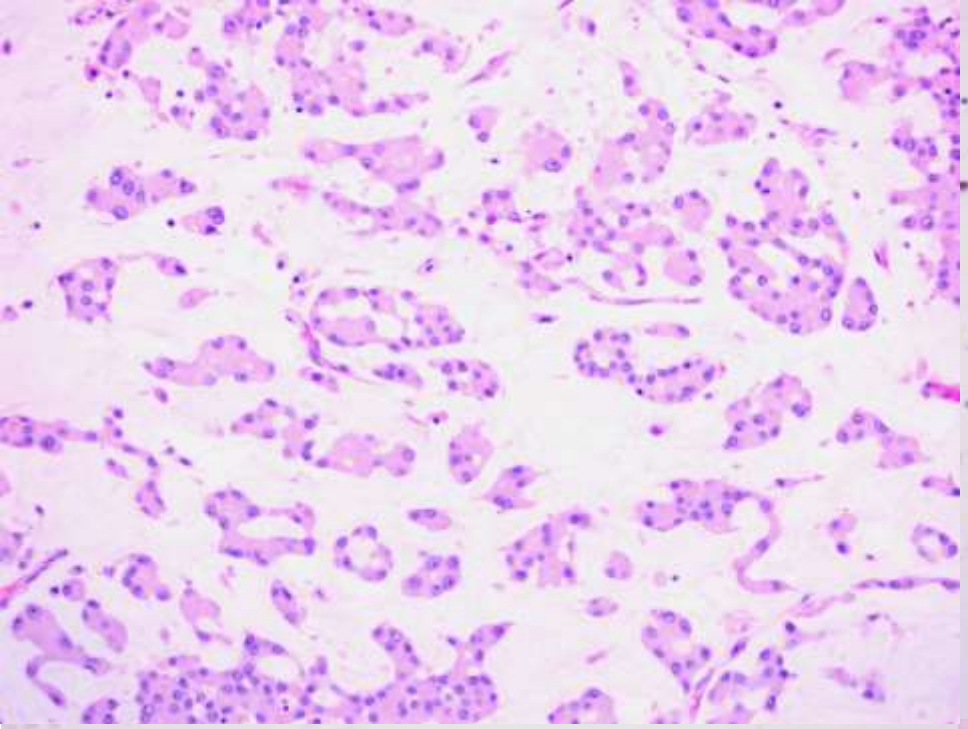
Linlin Wang; UCSF

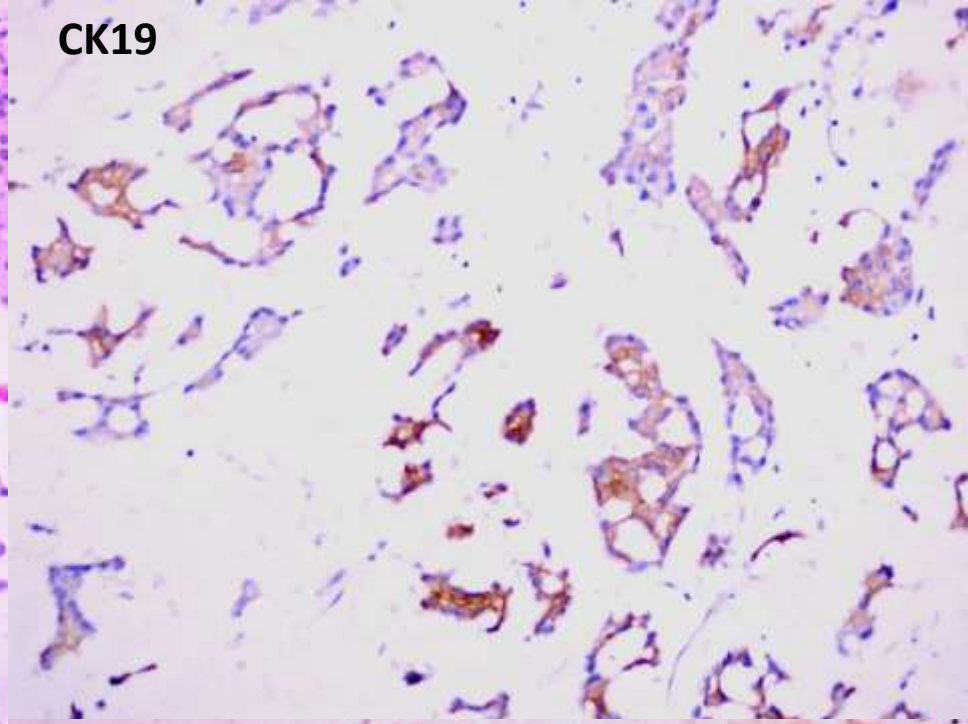


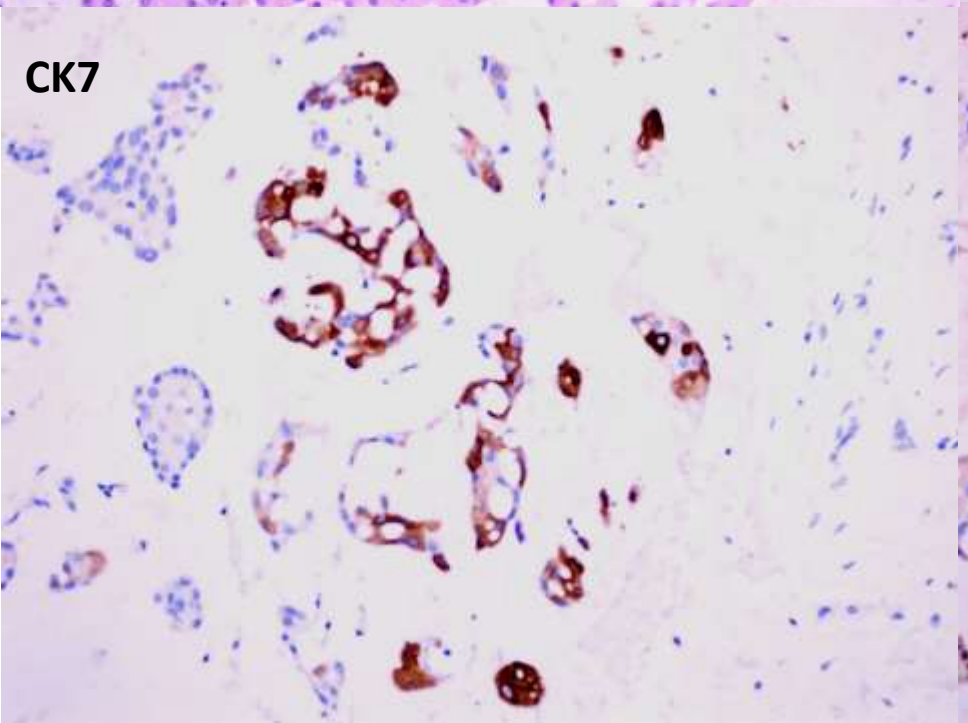


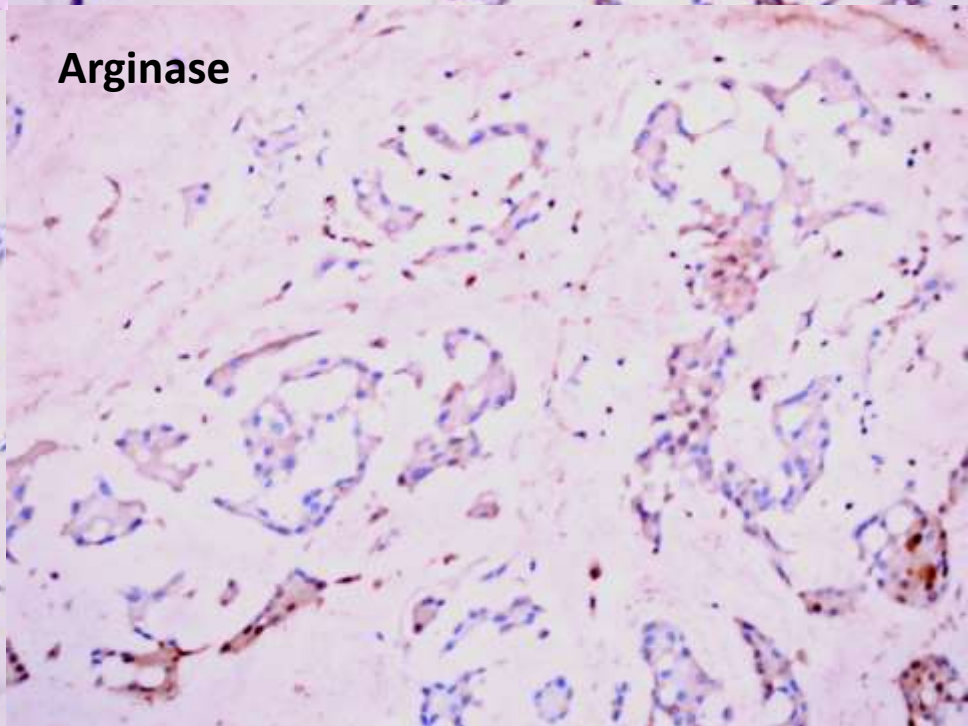



CK19
CK7
Arginase

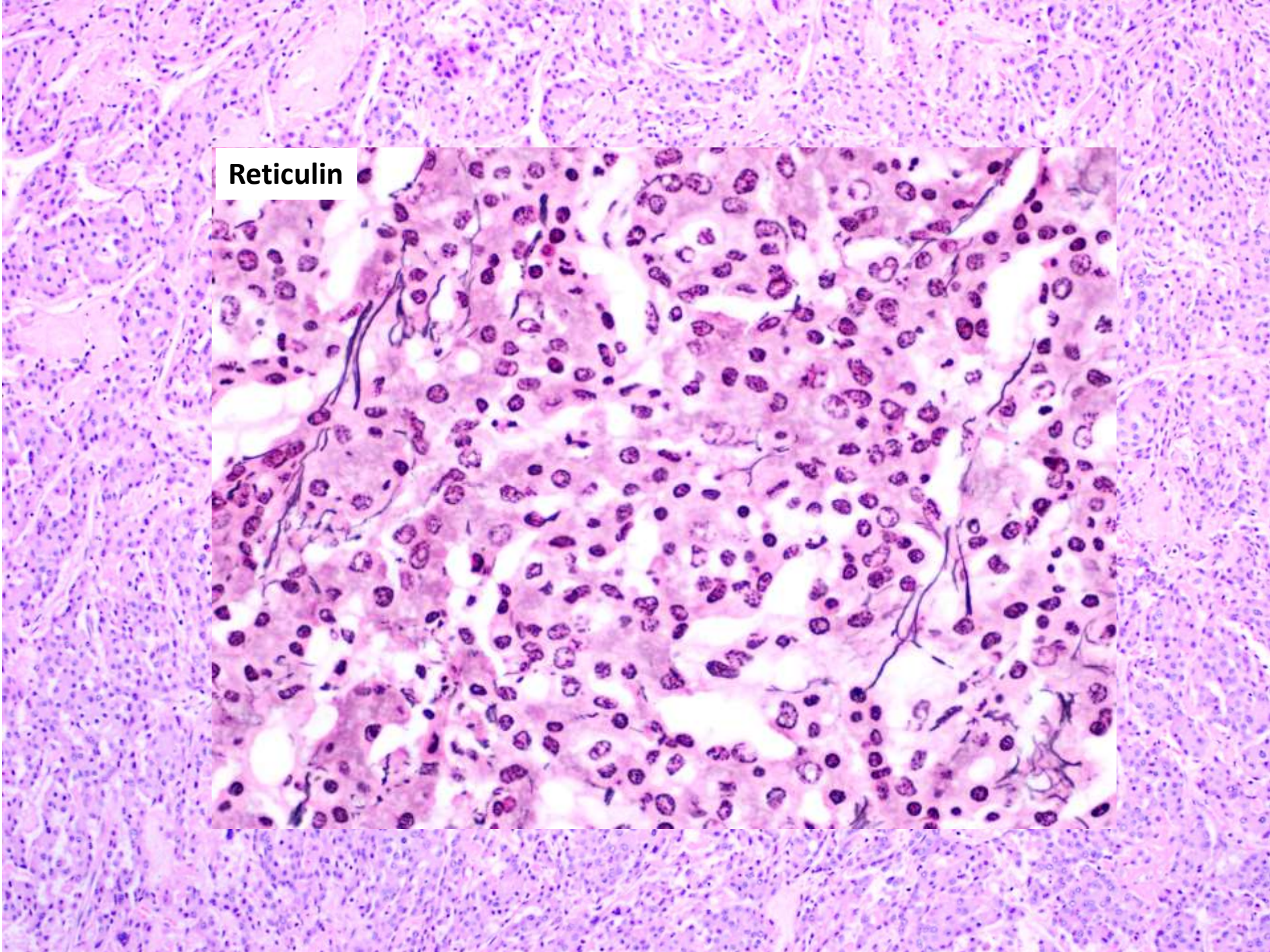


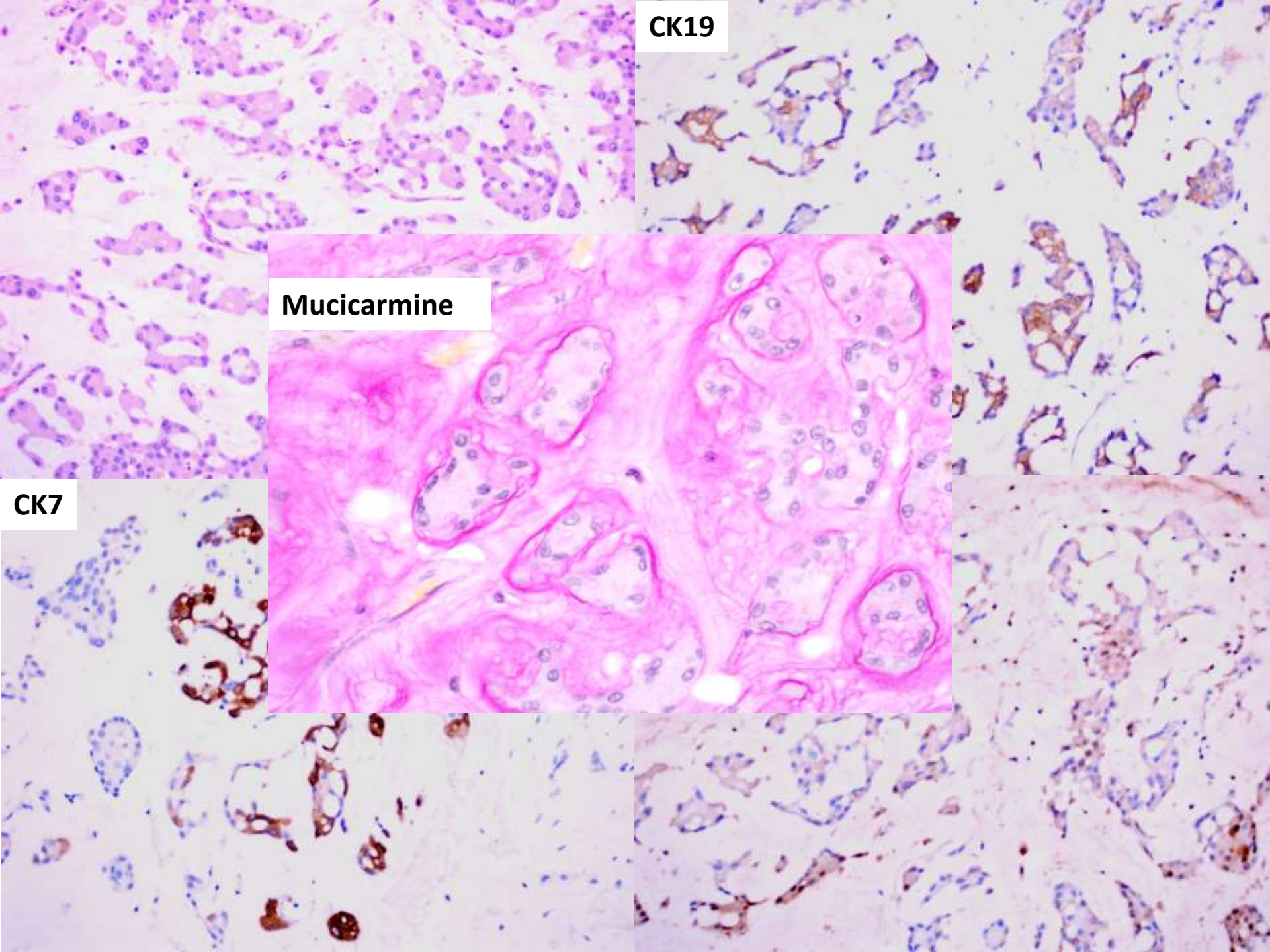

CK19


CK7


Arginase

DIAGNOSIS?


Reticulin


CK19
Mucicarmine
CK7

Combined Hepatocellular-Cholangiocarcinoma (HCC-CC)?

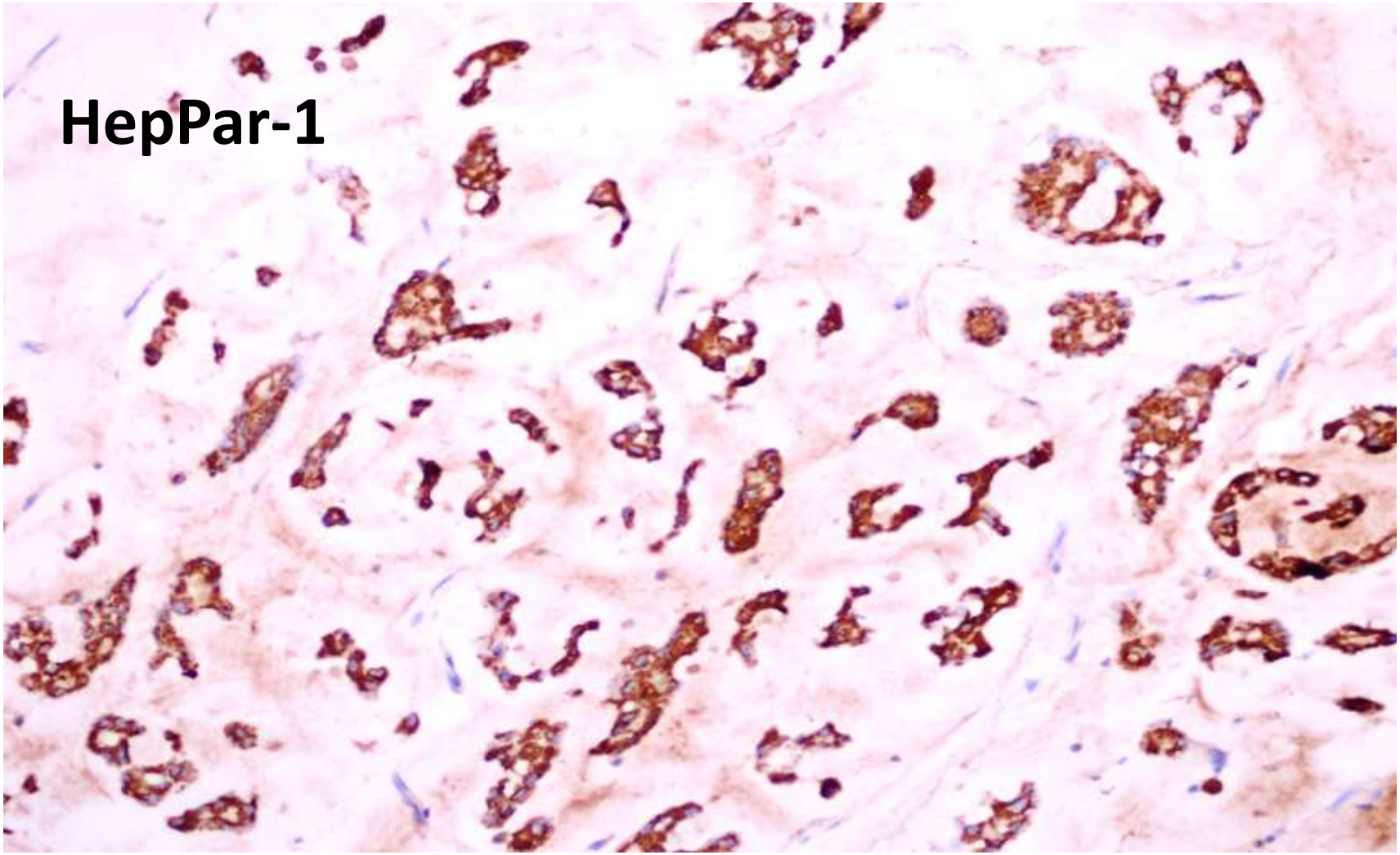
- Combined HCC-CC is rare tumor with both hepatocellular carcinoma (HCC) and cholangiocarcinoma (CC) features.
- Distinction of cHCC-CC from HCC and CC may be challenging, but has prognostic and therapeutic implications.
- Cholangiocarcinoma component in cHCC-CC

  Morphology: Glandular formation in fibrotic stroma

  Intracellular mucin

  IHC: Loss of hepatocellular markers

  Expression of CK7/CK19


HepPar-1

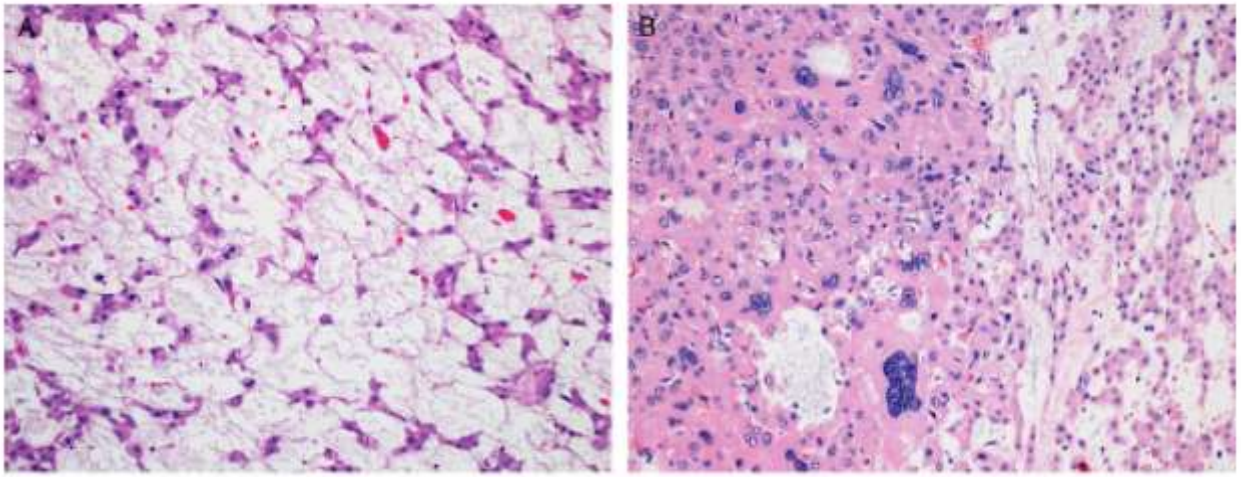
Mucin ≠ Biliary Differentiation

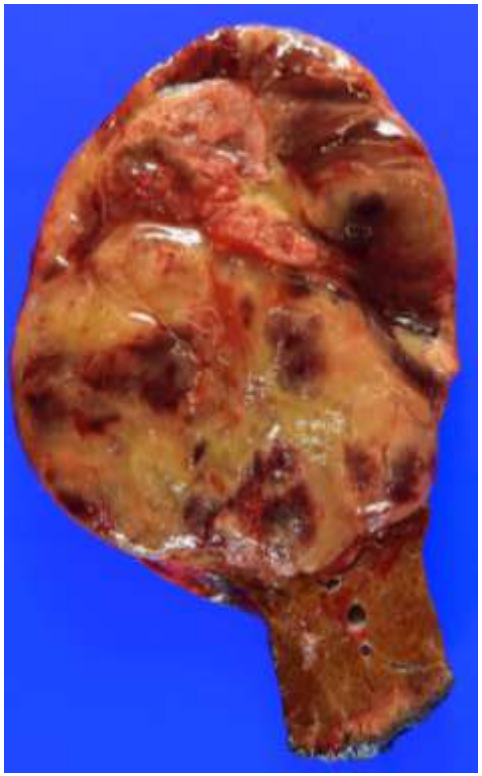
Primary Hepatic Tumors With Myxoid Change

Morphologically Unique Hepatic Adenomas and Hepatocellular Carcinomas

Safia N. Salaria, MD, Rondell P. Graham, MBBS,† Shinichi Aishima, MD,‡ Taofic Mounajjed, MD,† Matthew M. Yeh, MD, PhD,§ and Michael S. Torbenson, MD†*

Am J Surg Pathol 2015;39:318–324



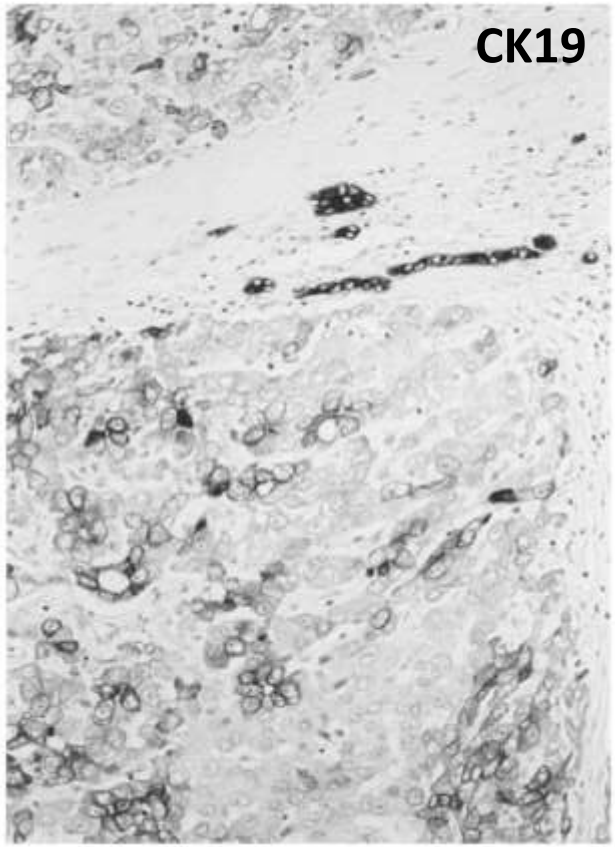


CK7 and CK19 Expression in HCC

Table 1. Expression of cytokeratins 7 and 19 in hepatocellular carcinoma

Expression levels of CK19	Expression levels of CK7				
		+	++	+++	Total
	93	25	21	3	142
+	1	7	1	0	9
++	0	2	4	0	6
+++	0	0	0	0	0
Total	94	34	26	3	157

CK7, cytokeratin 7; CK 19, cytokeratin 19.



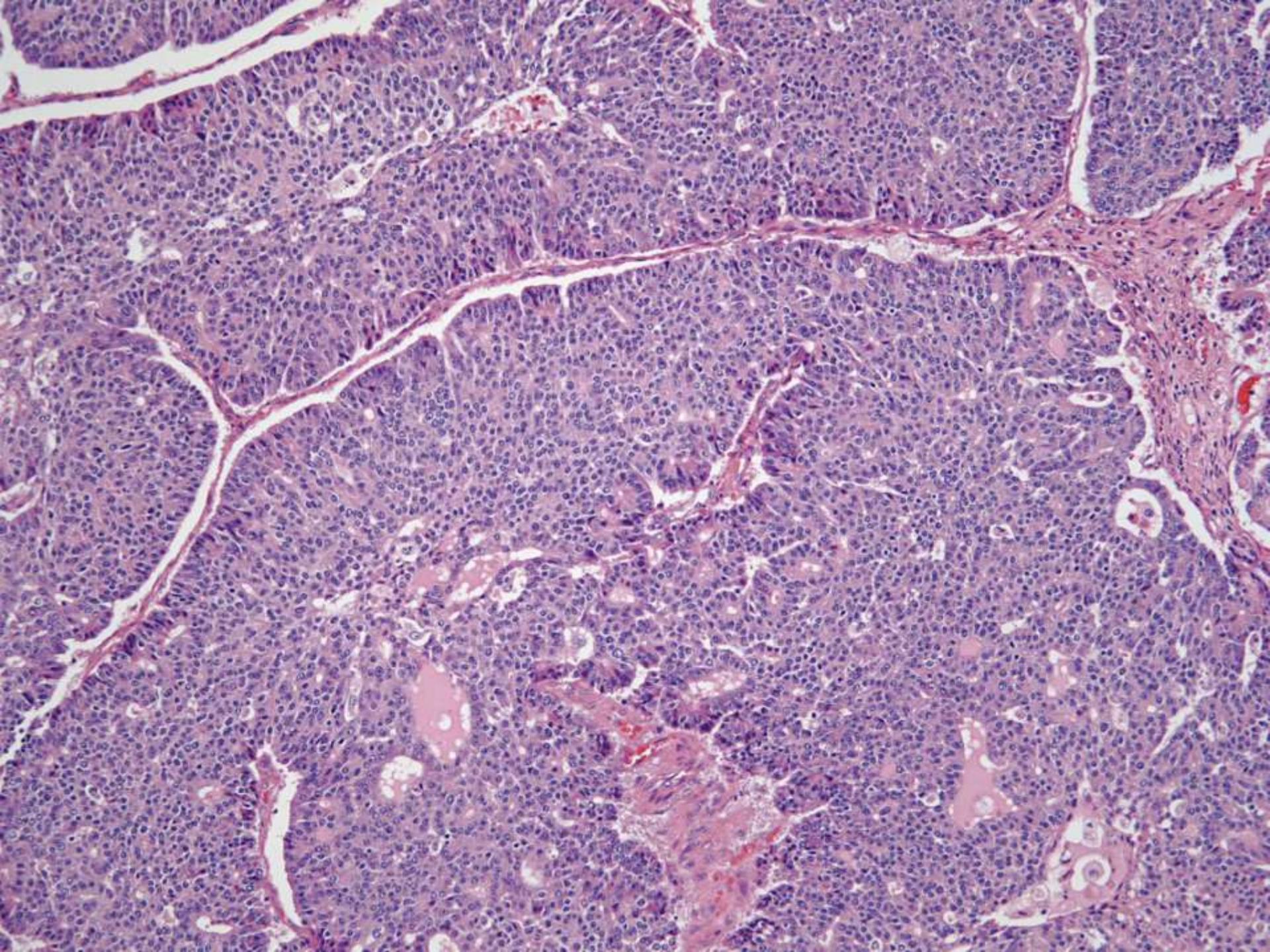
Uenishi et al. Cancer Sci. 2003 Oct;94(10):851-7.

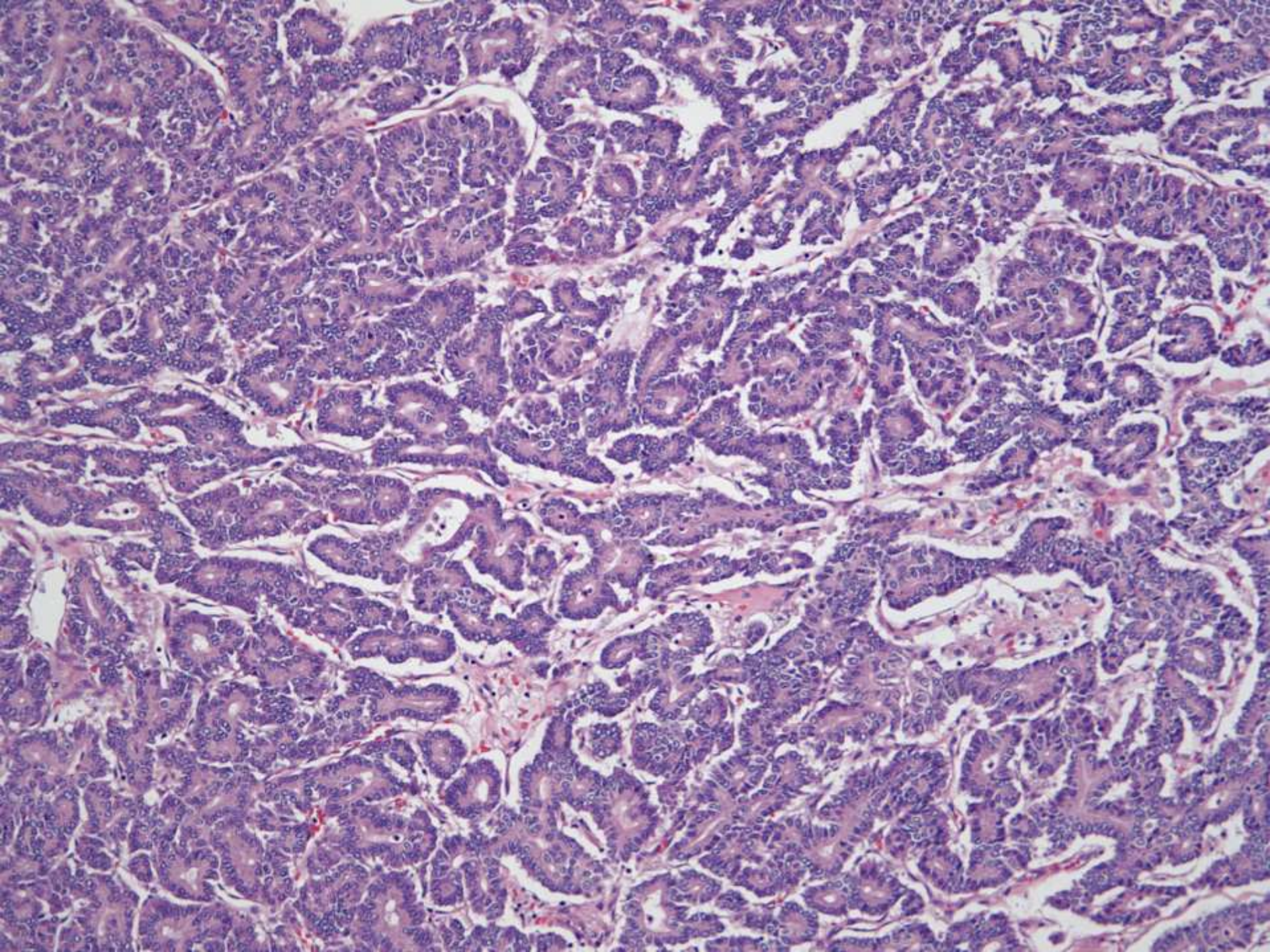
Take Home Messages

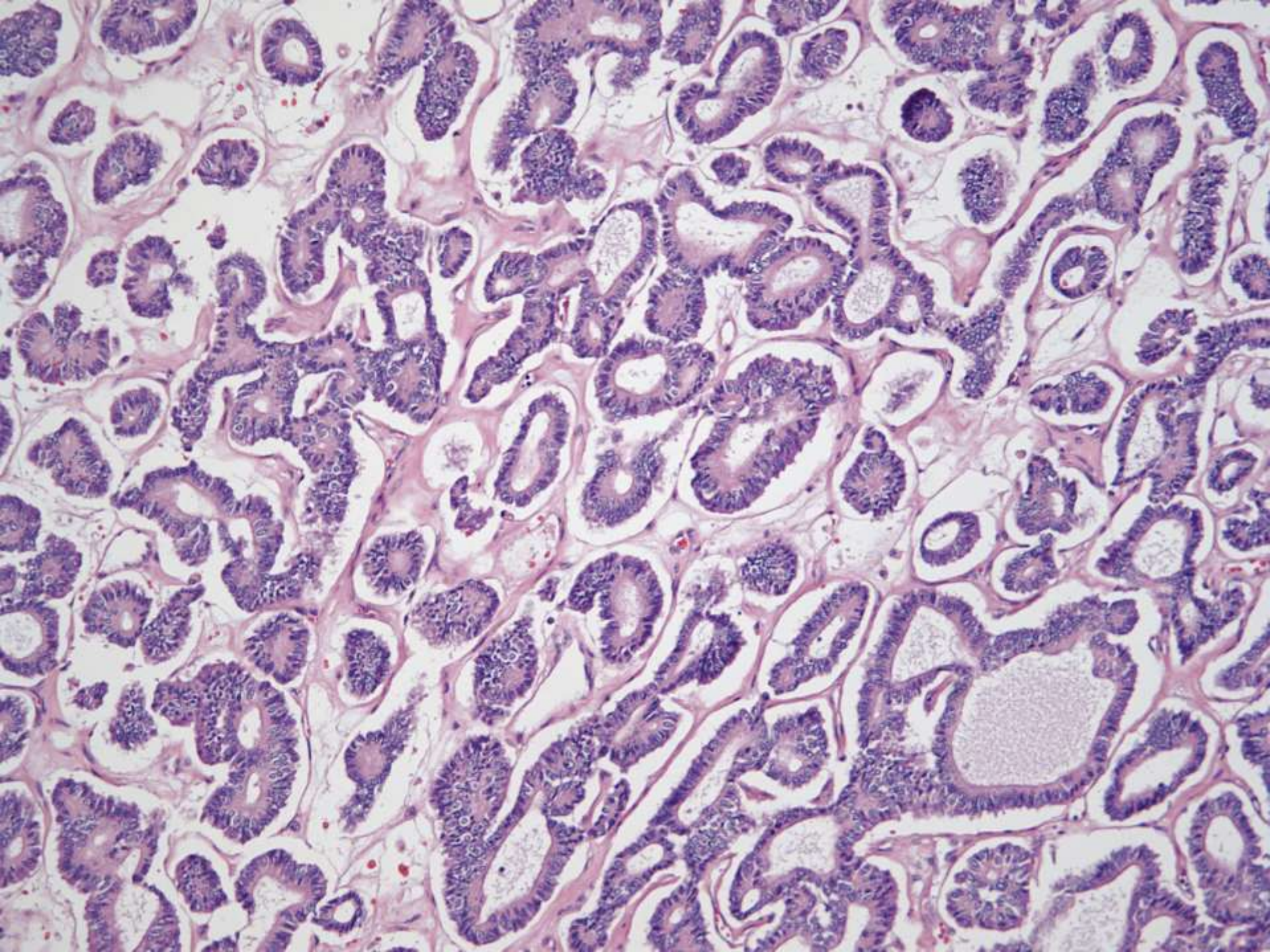
1. The diagnosis of cHCC-CC may be challenging, especially in limited biopsies.
2. Myxoid changes can be seen in HCC.
3. CK7 and CK19 can be expressed in HCC.

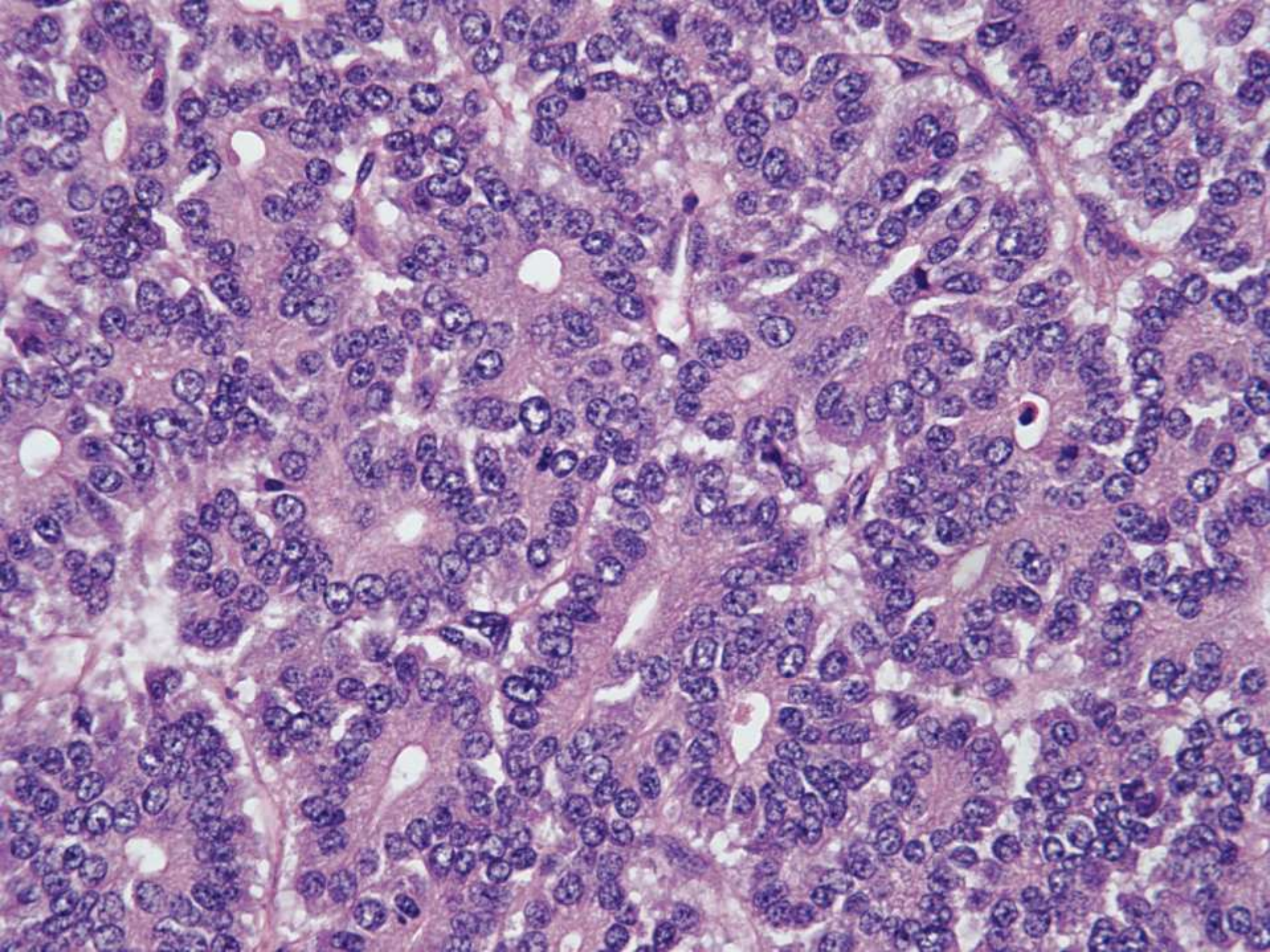
SB 5998
76-year-old woman with a distal pancreas mass.

Kurt Schaber/Teri Longacre; Stanford

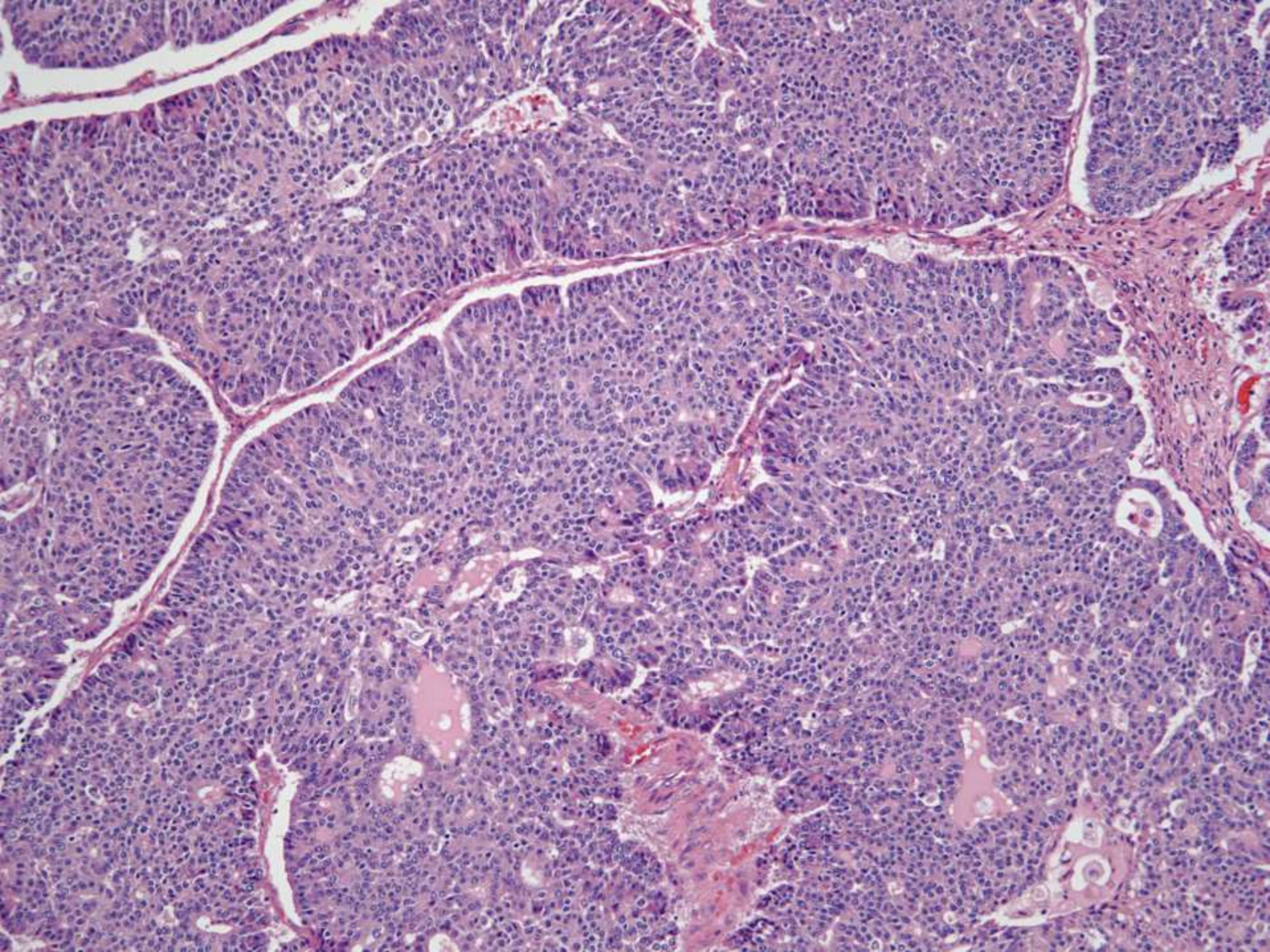


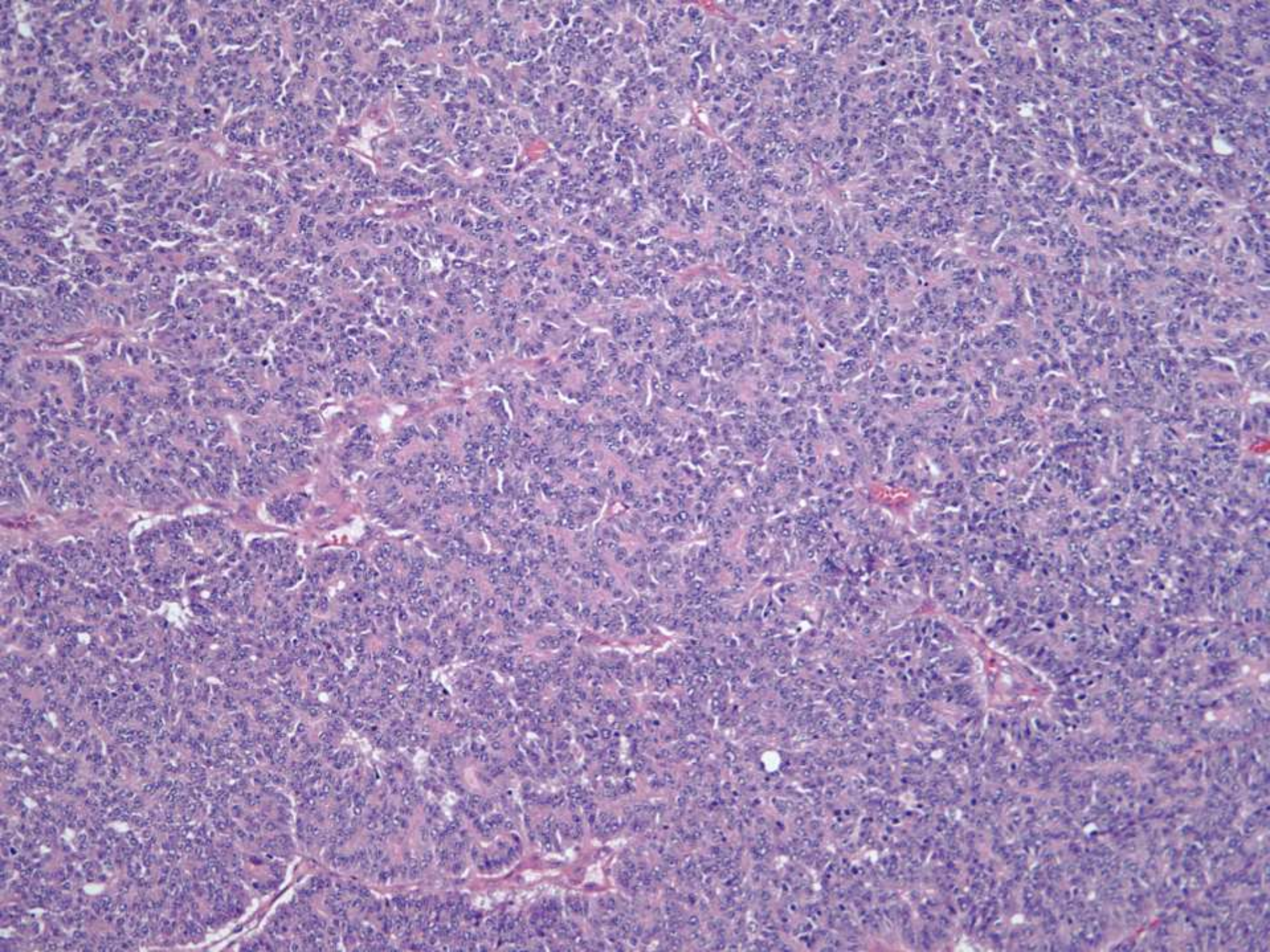


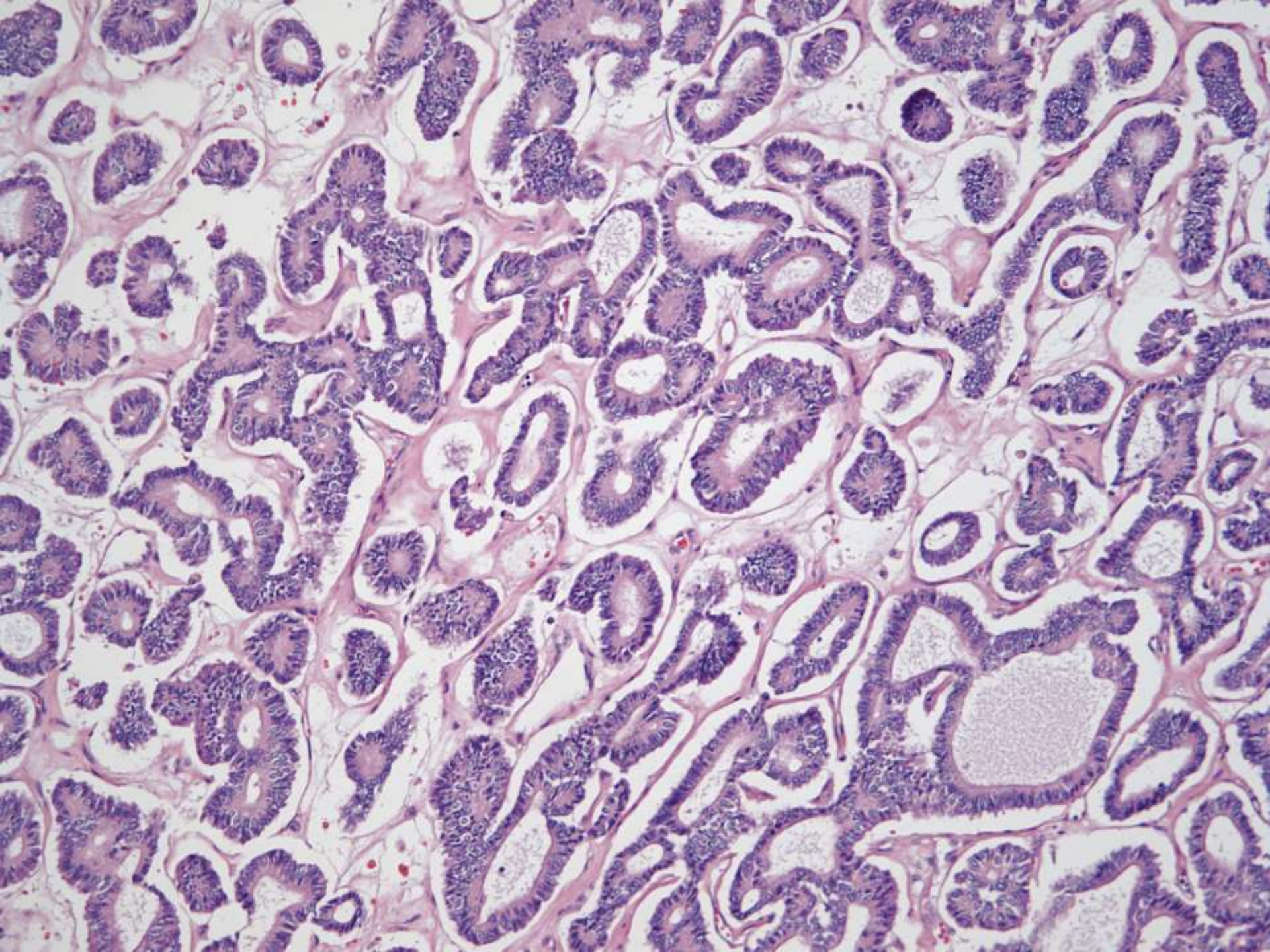


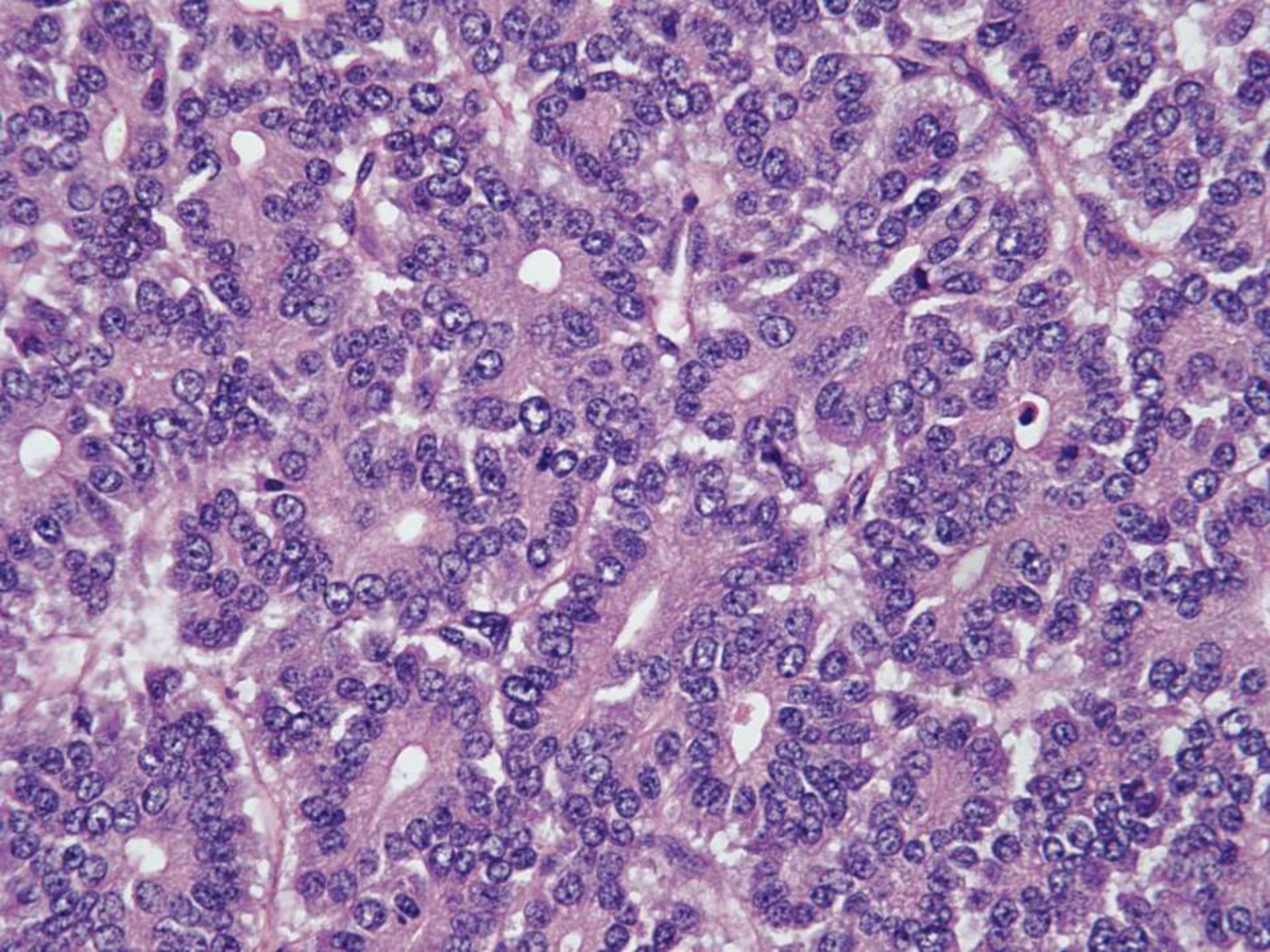


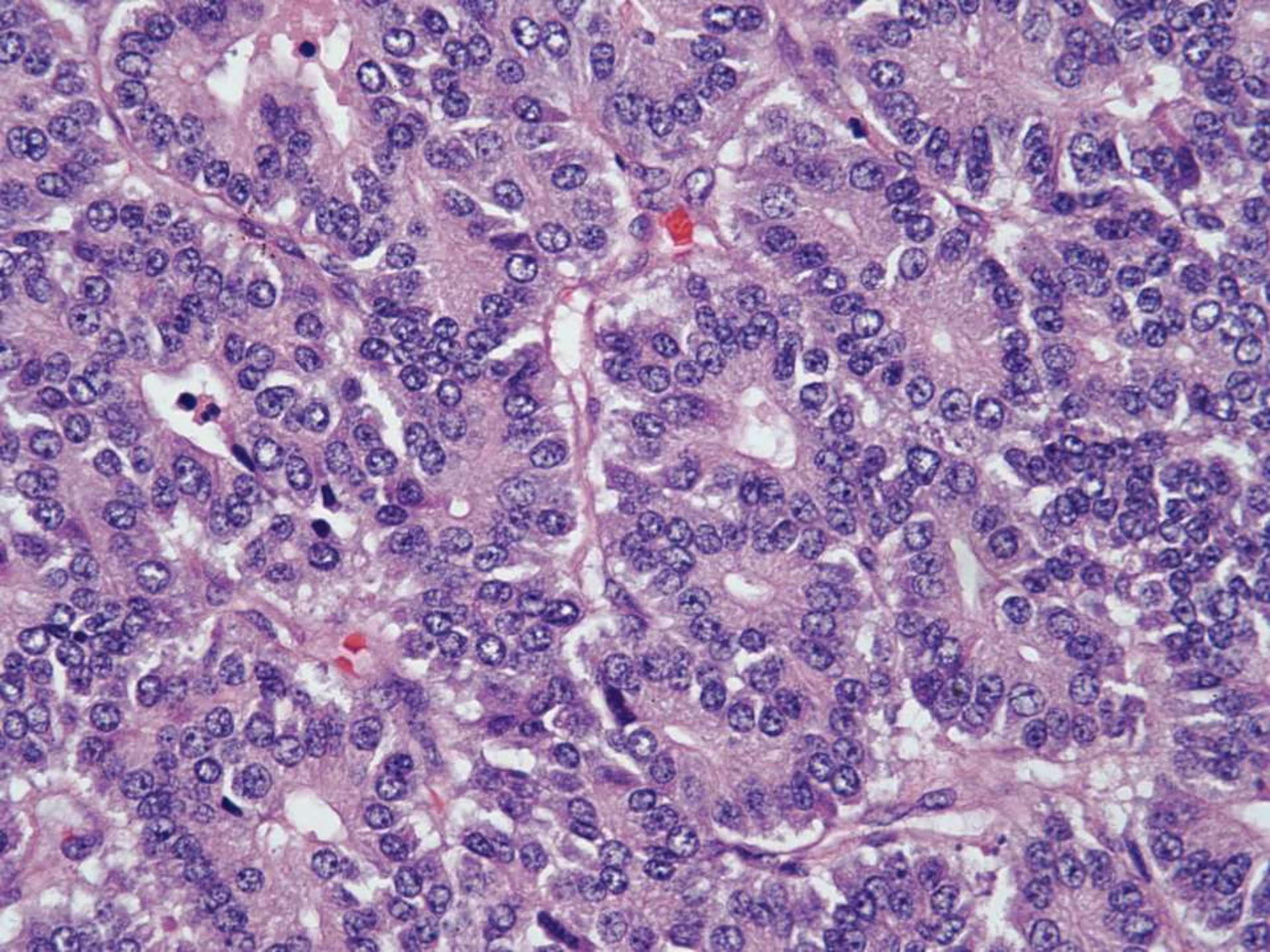
DIAGNOSIS?

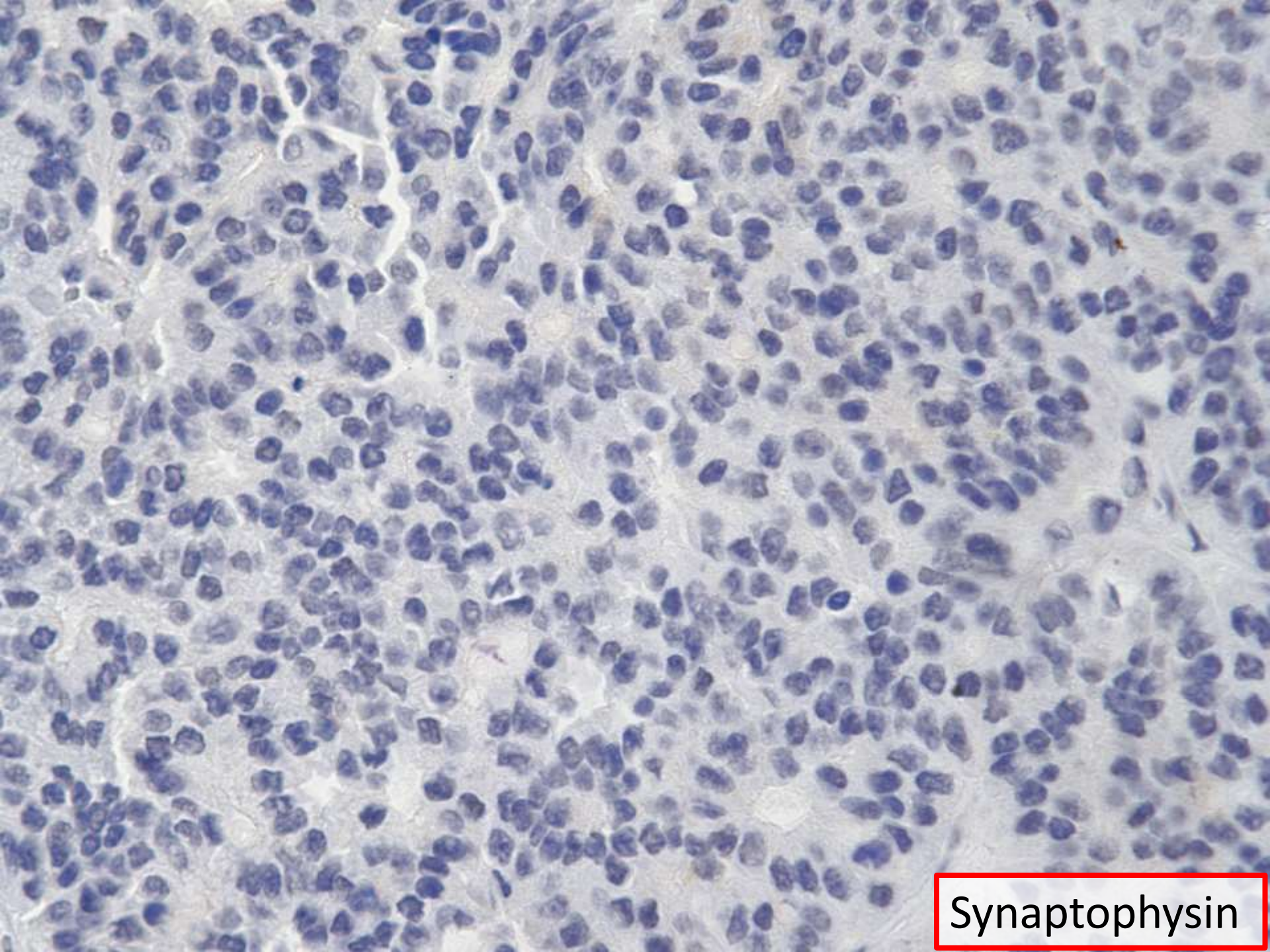


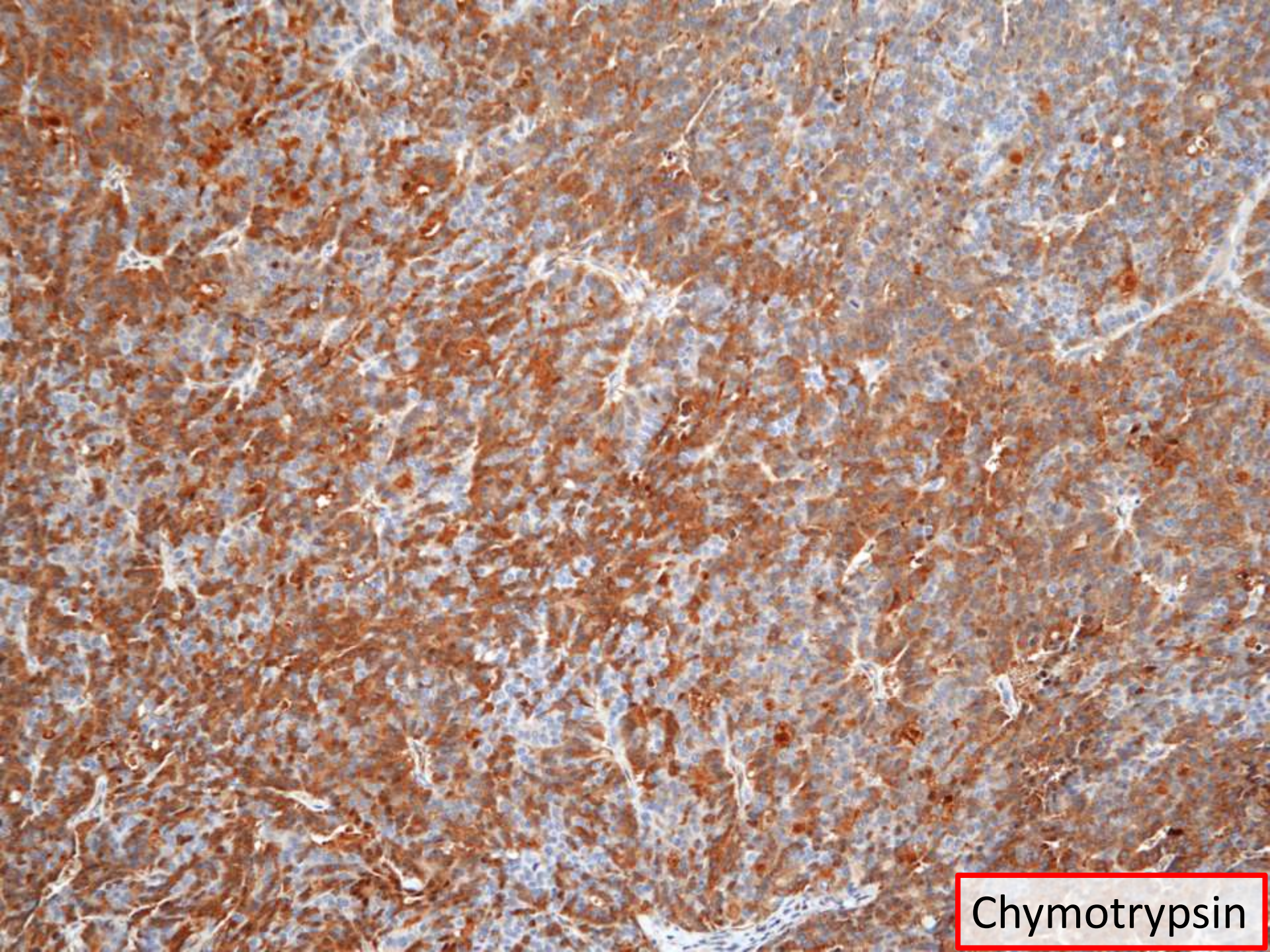









Synaptophysin


Chymotrypsin

Pancreatic Acinar Cell Carcinoma

Clinical Features

- Rare, <2% of all pancreatic carcinomas
- Presenting symptoms are usually non-specific
  - Jaundice is rare
  - Sometimes elevated lipase levels may lead to subcutaneous or intraosseous fat necrosis
- Metastases usually occur early in disease
- Long-term survival is poor
  - Few patients live to 5 years

Pancreatic Acinar Cell Carcinoma

Pathologic features

- Grossly, usually large, solid, circumscribed tumors
- Cellular tumor nodules with little or no stroma
- Monotonous sheets and nests
- Cells show basal nuclear polarization and eosinophilic granular cytoplasm
- Often single prominent nucleolus

Pancreatic Acinar Cell Carcinoma

- Documentation of enzyme production important for diagnosis.
  - Zymogens stain with PASd
    - Must exclude cytoplasmic mucin
  - Immunohistochemistry for trypsin, lipase, or chymotrypsin, which is more sensitive and specific

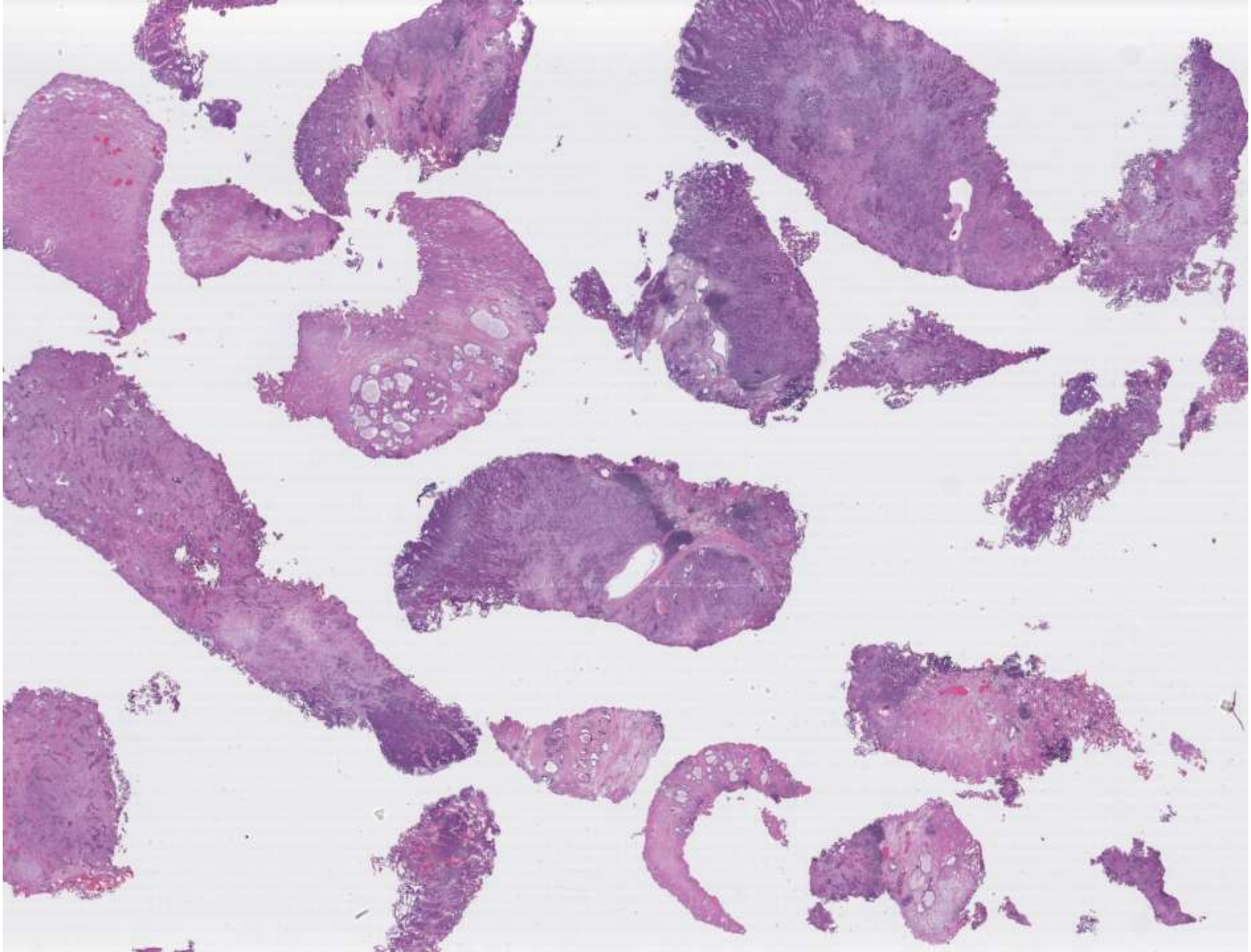
Differential diagnosis

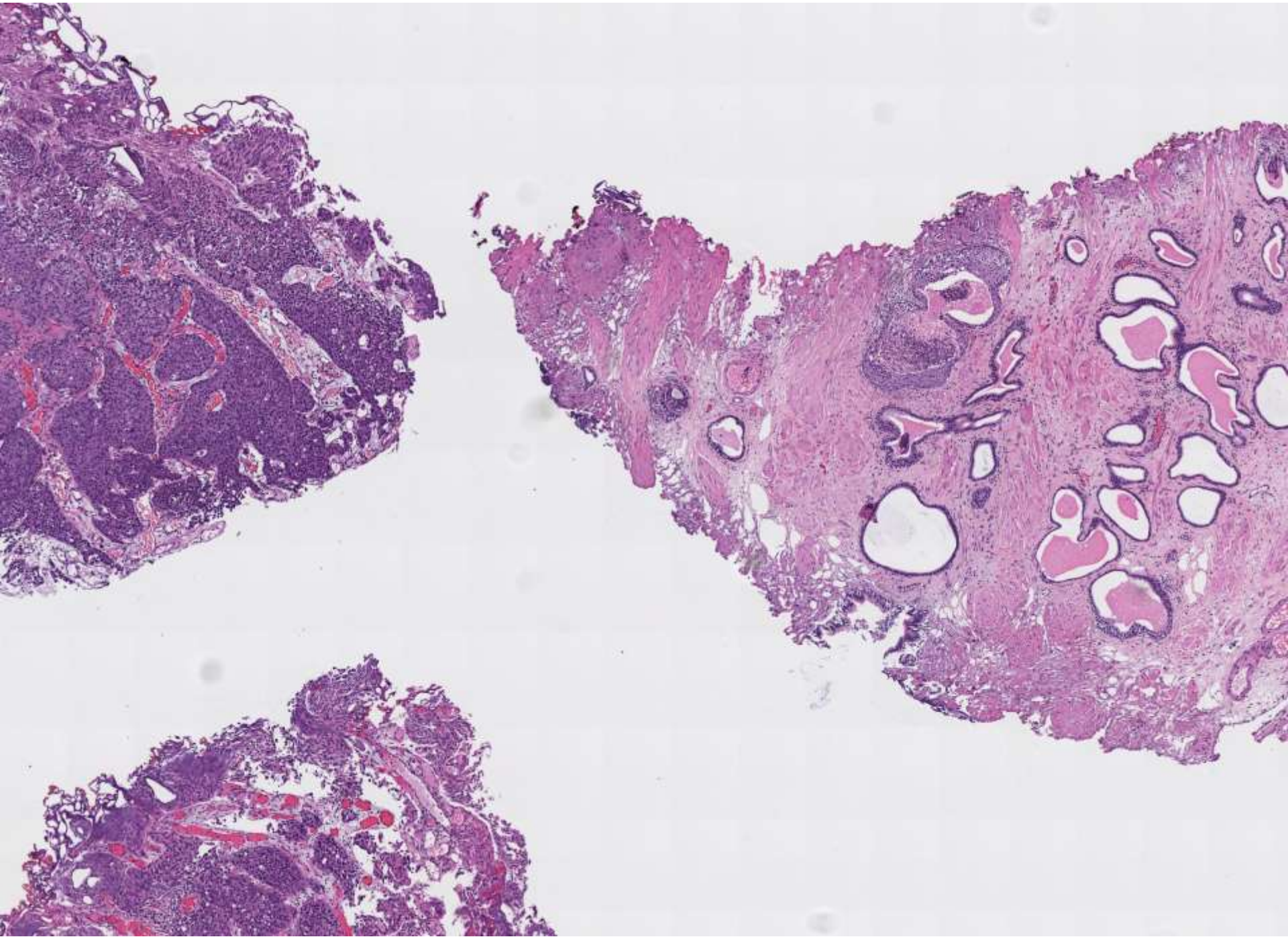
- Primary differential diagnosis is PanNET
  - May be histologically very similar
  - Stain with Synaptophysin or Chromogranin
- Pancreatoblastoma
  - Primarily pediatric tumor
  - Contain squamoid nests
- Solid Pseudopapilary Neoplasm
  - Pseudopapillae
  - Nuclear staining with β-catenin

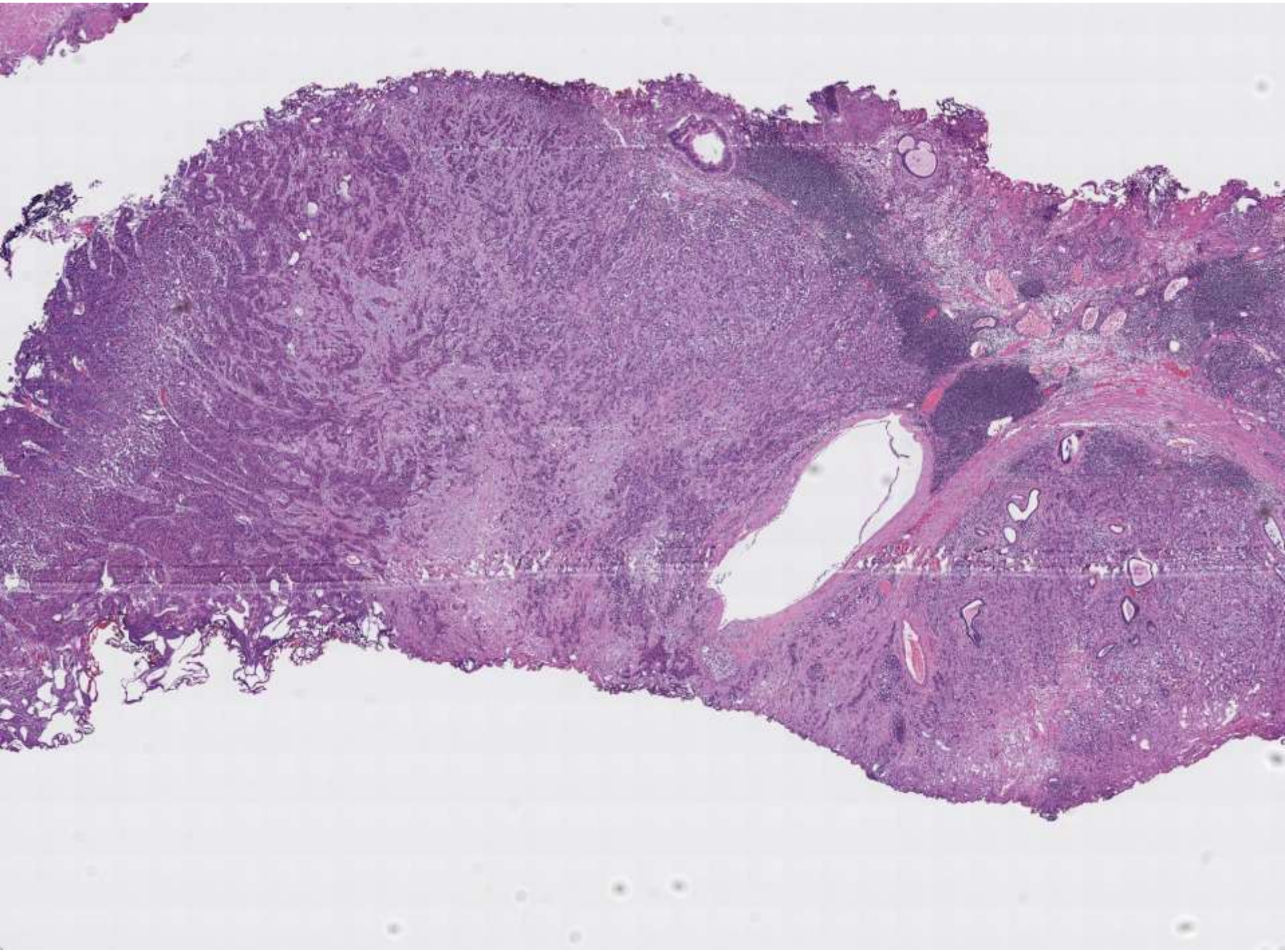
SB 5999

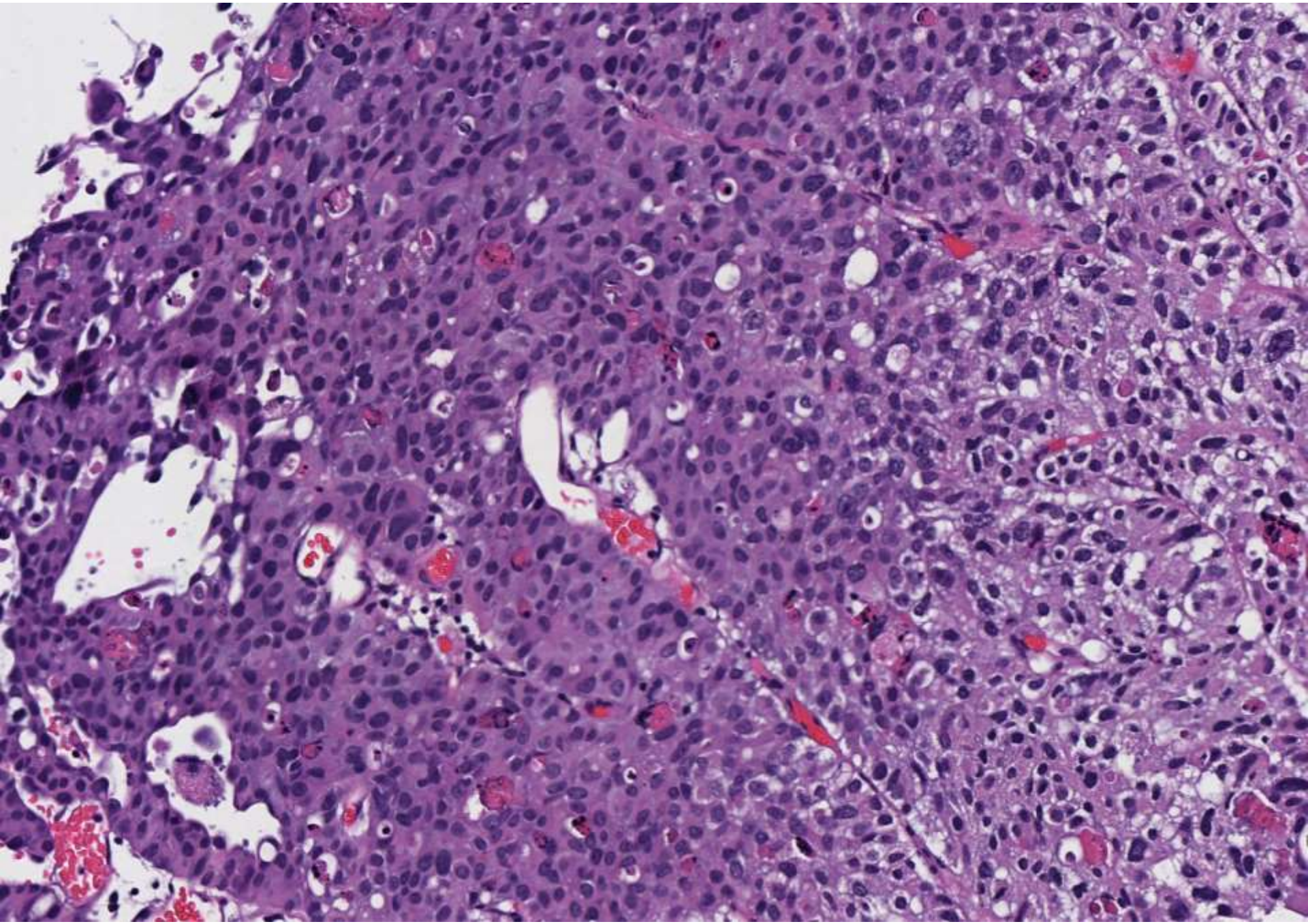
67-year-old man underwent TURP.
Pathologic stage of this urothelial cancer?

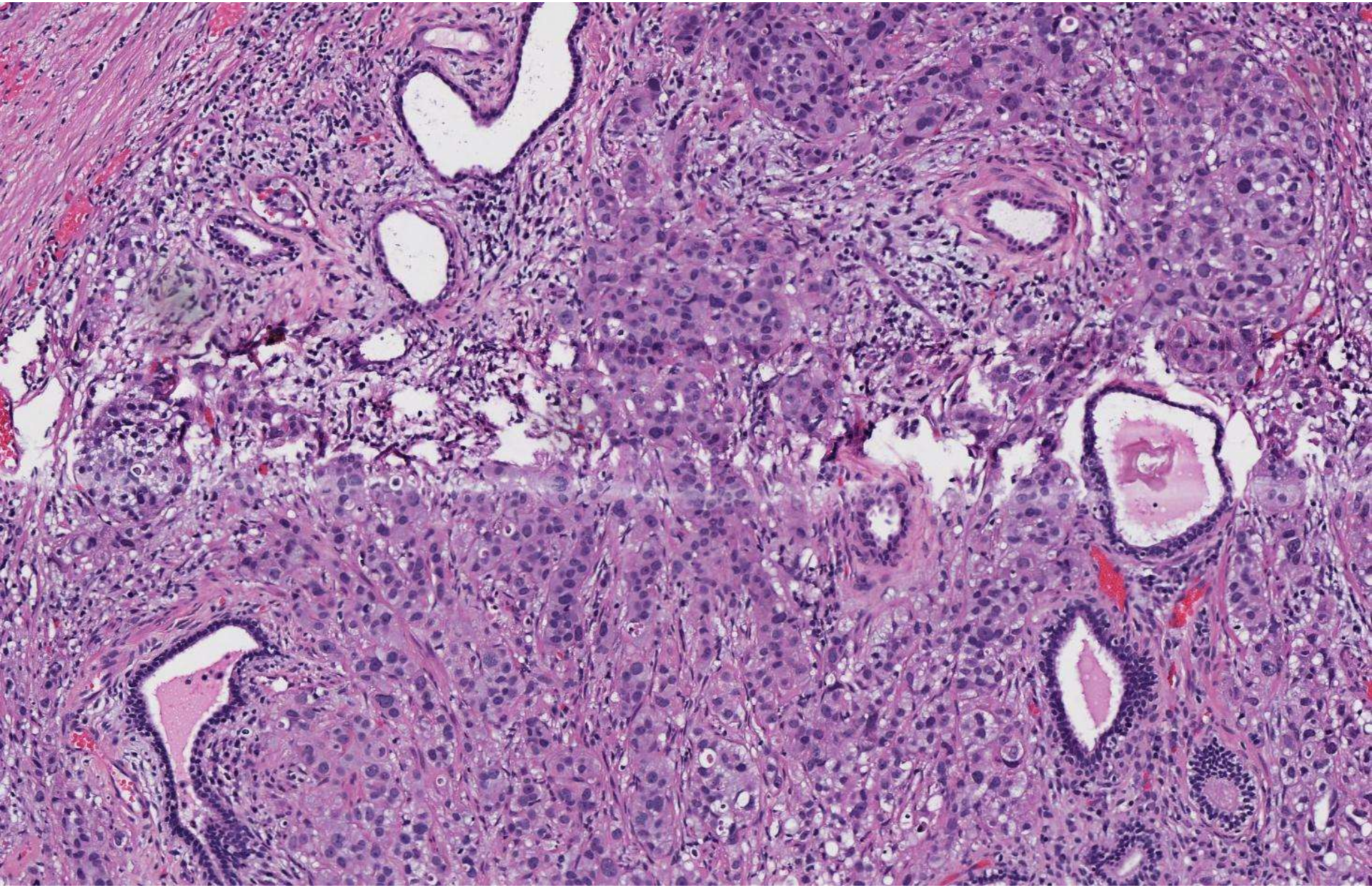
Ankur Sangoi; El Camino Hospital

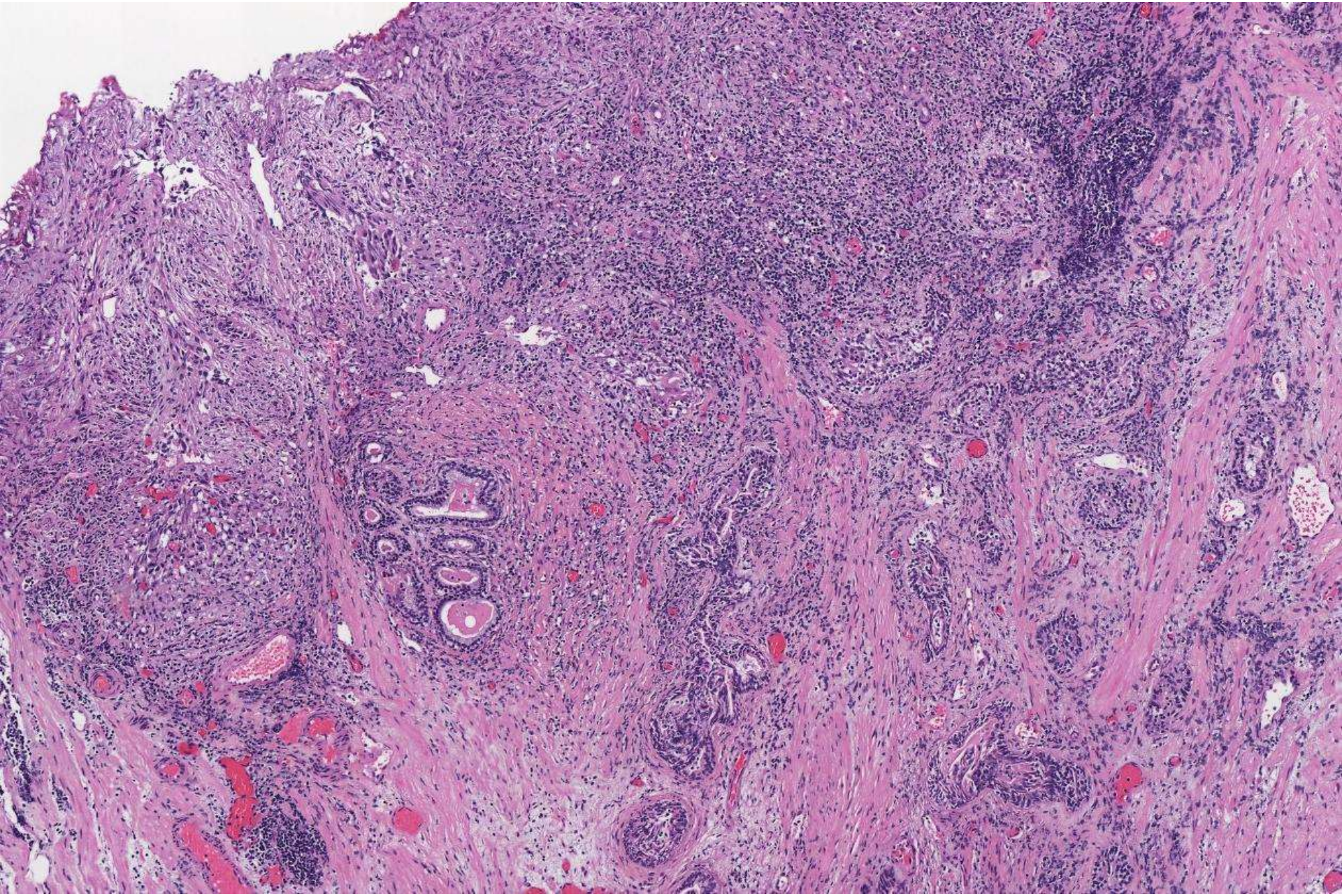


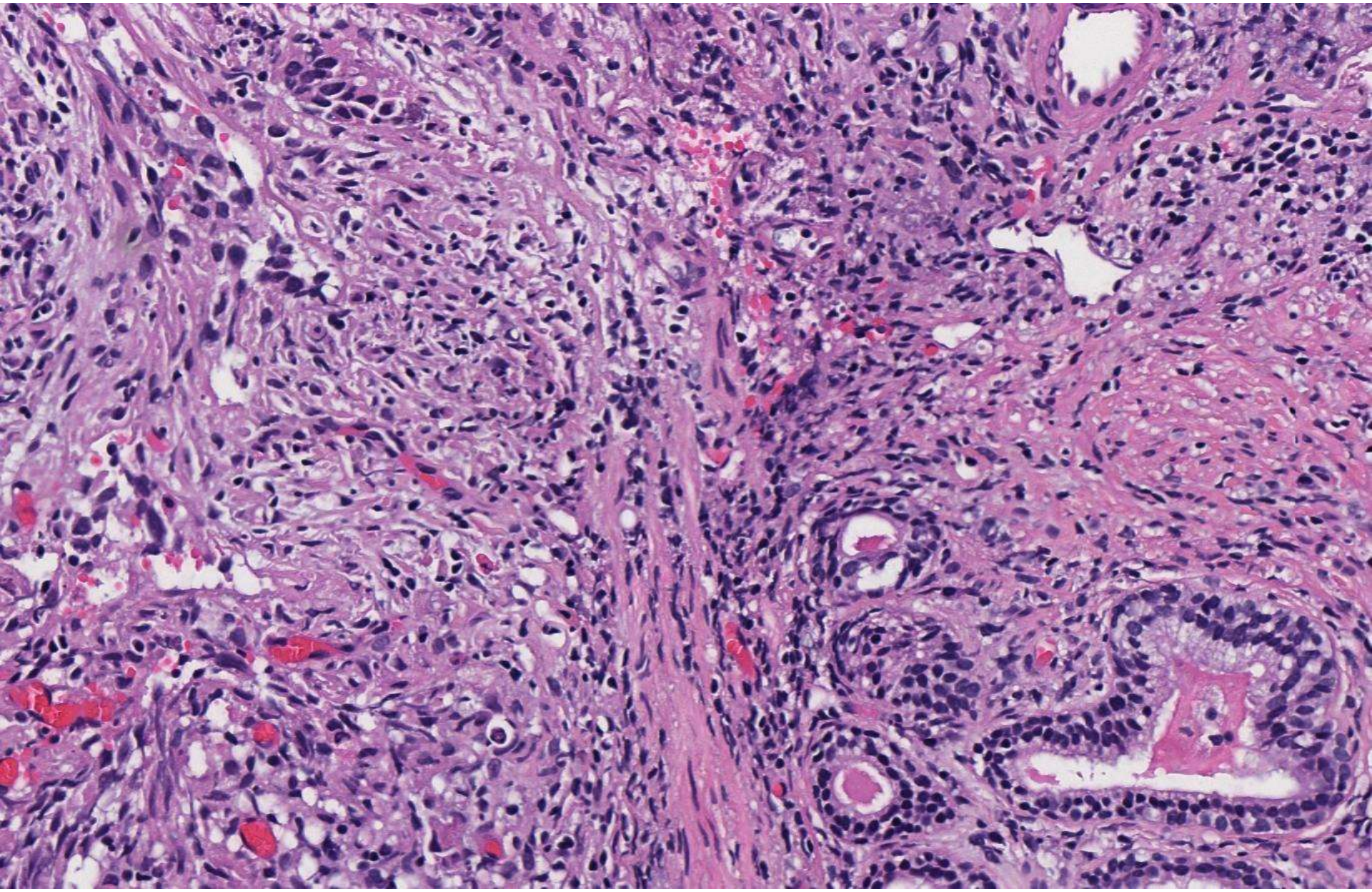












DIAGNOSIS?

AJCC 7th ed Urinary Bladder

Primary Tumor (pT)

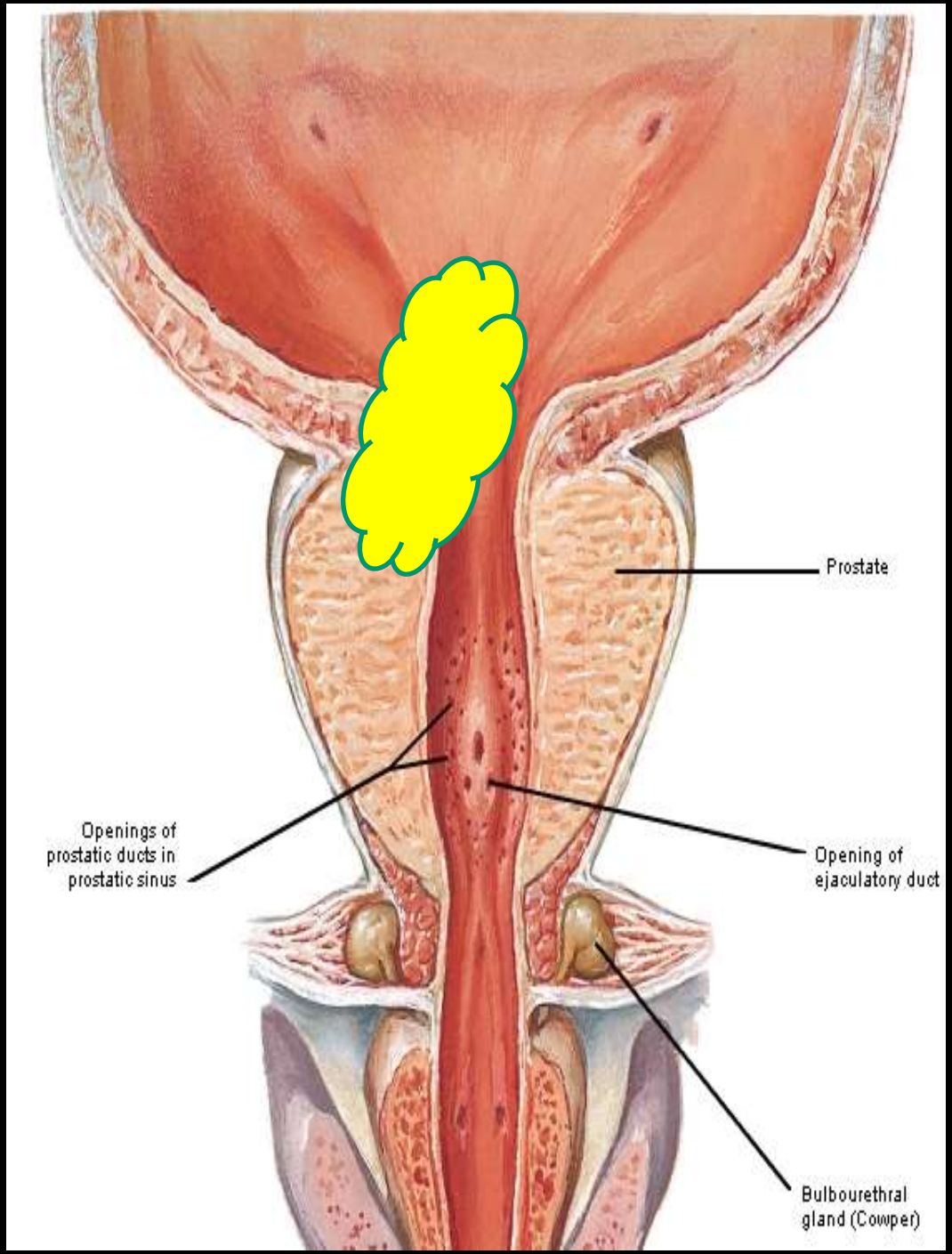
___ pTX: Primary tumor cannot be assessed
___ pT0: No evidence of primary tumor
___ pTa: Noninvasive papillary carcinoma
___ pTis: Carcinoma in situ: "flat tumor"
___ pT1: Tumor invades subepithelial connective tissue (lamina propria)
pT2: Tumor invades muscularis propria (detrusor muscle)
___ pT2a: Tumor invades superficial muscularis propria (inner half)
___ pT2b: Tumor invades deep muscularis propria (outer half)
pT3: Tumor invades perivesical tissue
___ pT3a: Microscopically
___ pT3b: Macroscopically (extravesicular mass)
pT4: Tumor invades any of the following: prostatic stroma, seminal vesicles, uterus, vagina, pelvic wall, abdominal wall
___ pT4a: Tumor invades prostatic stroma or uterus or vagina
___ pT4b: Tumor invades pelvic wall or abdominal wall

AJCC 7th ed Urethra

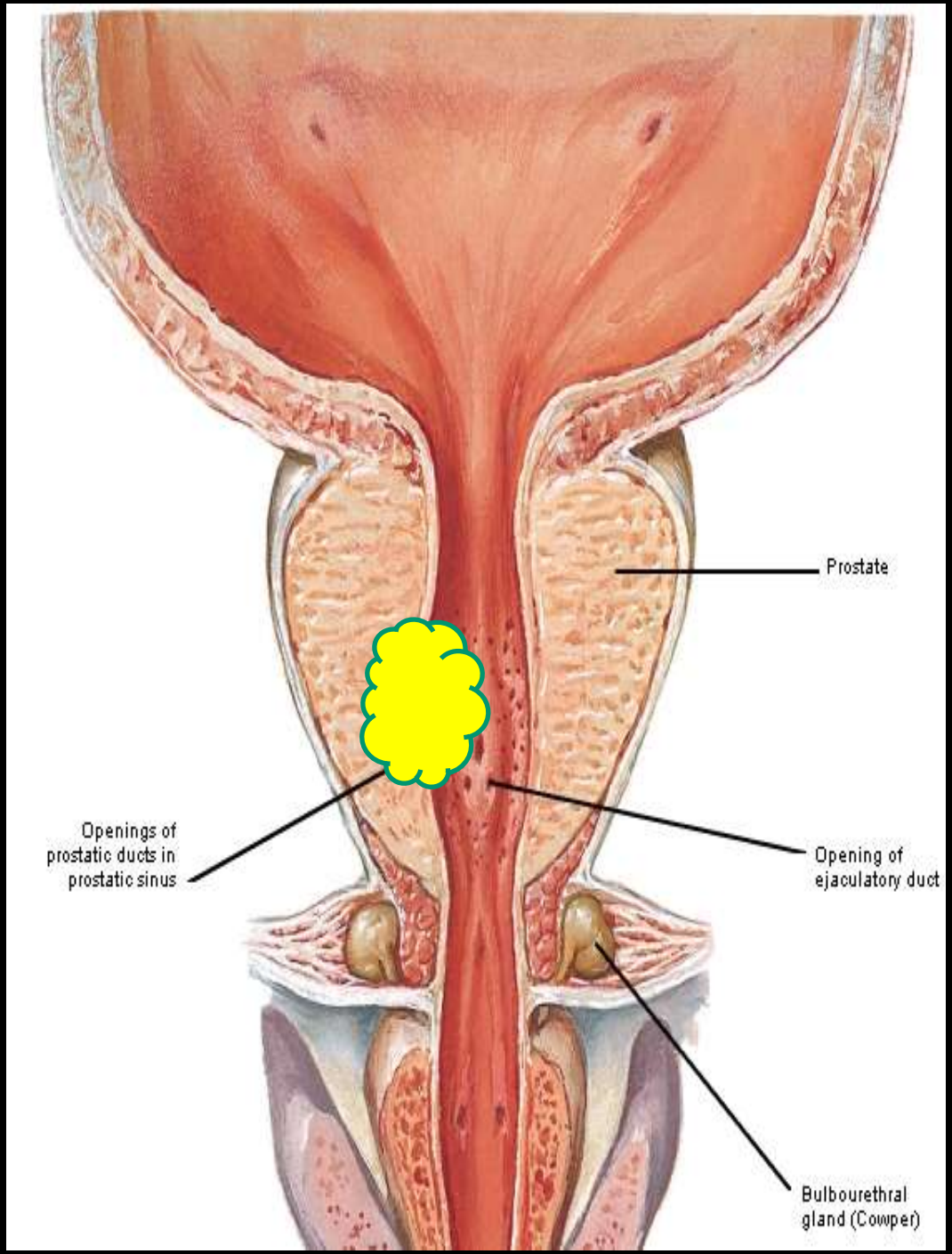
Primary Tumor (pT) (urothelial [transitional cell] carcinoma of the prostate)

___ pTX:	Cannot be assessed
___ pT0:	No evidence of primary tumor
___ pTa:	Noninvasive papillary, polypoid, or verrucous carcinoma
___ pTis pu:	Carcinoma in situ, involvement of prostatic urethra
___ pTis pd:	Carcinoma in situ, involvement of prostatic ducts
___ pT1:	Tumor invades subepithelial connective tissue (only applied to tumors invading from the urethral lumen)#
___ pT2:	Tumor invades any of the following: prostatic stroma, corpus spongiosum, periurethral muscle
___ pT3:	Tumor invades any of the following: corpus cavernosum, beyond prostatic capsule, bladder neck (extraprostatic extension)
___ pT4:	Tumor invades other adjacent organs (invasion of the bladder)

pT4a


Prostate
Openings of prostatic ducts in prostatic sinus
Opening of ejaculatory duct
Bulbourethral gland (Cowper)

pT2


Prostate
Openings of prostatic ducts in prostatic sinus
Opening of ejaculatory duct
Bulbourethral gland (Cowper)

PICK UP THE

AND MAKE SOMETHING HAPPEN

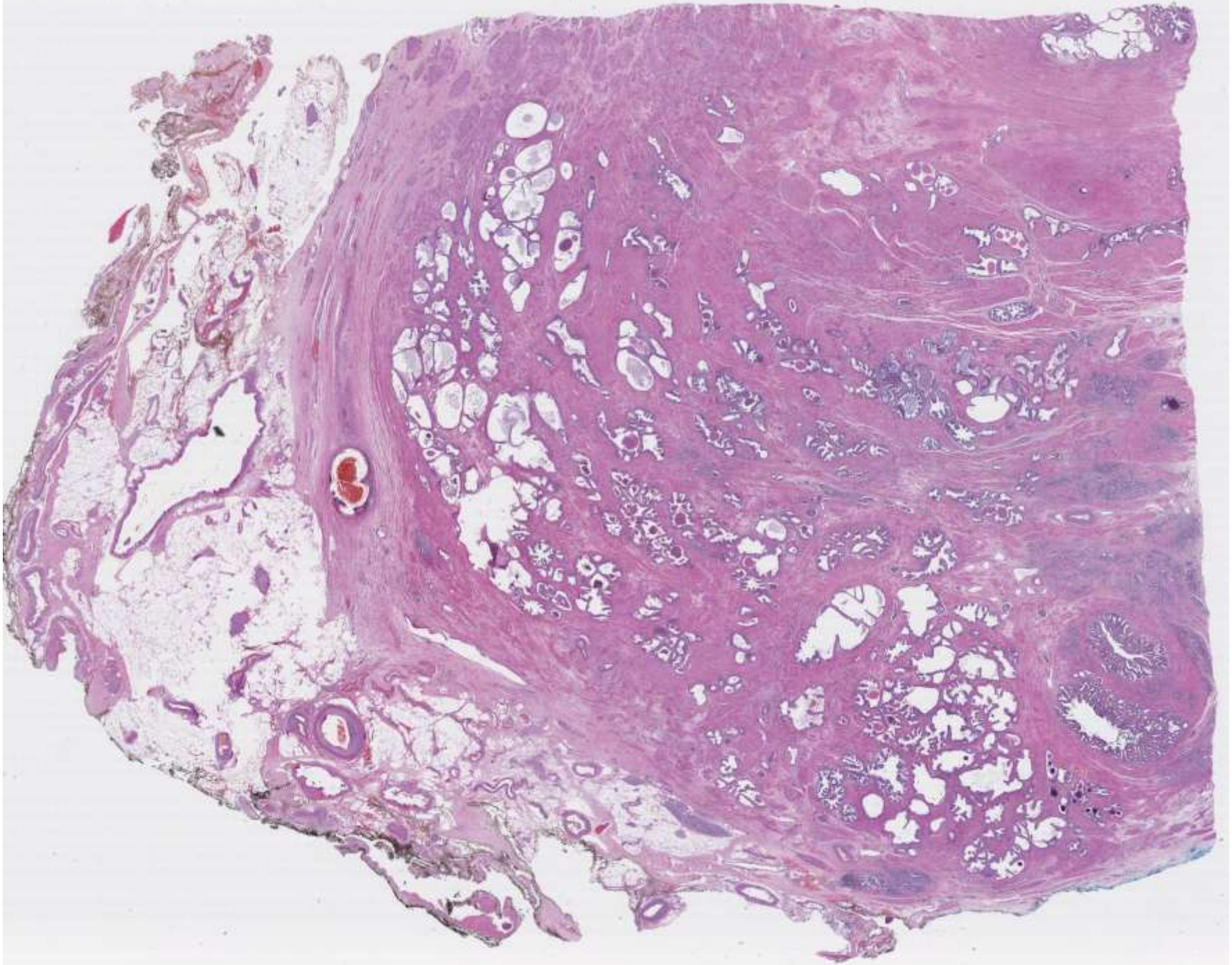
DIAGNOSIS

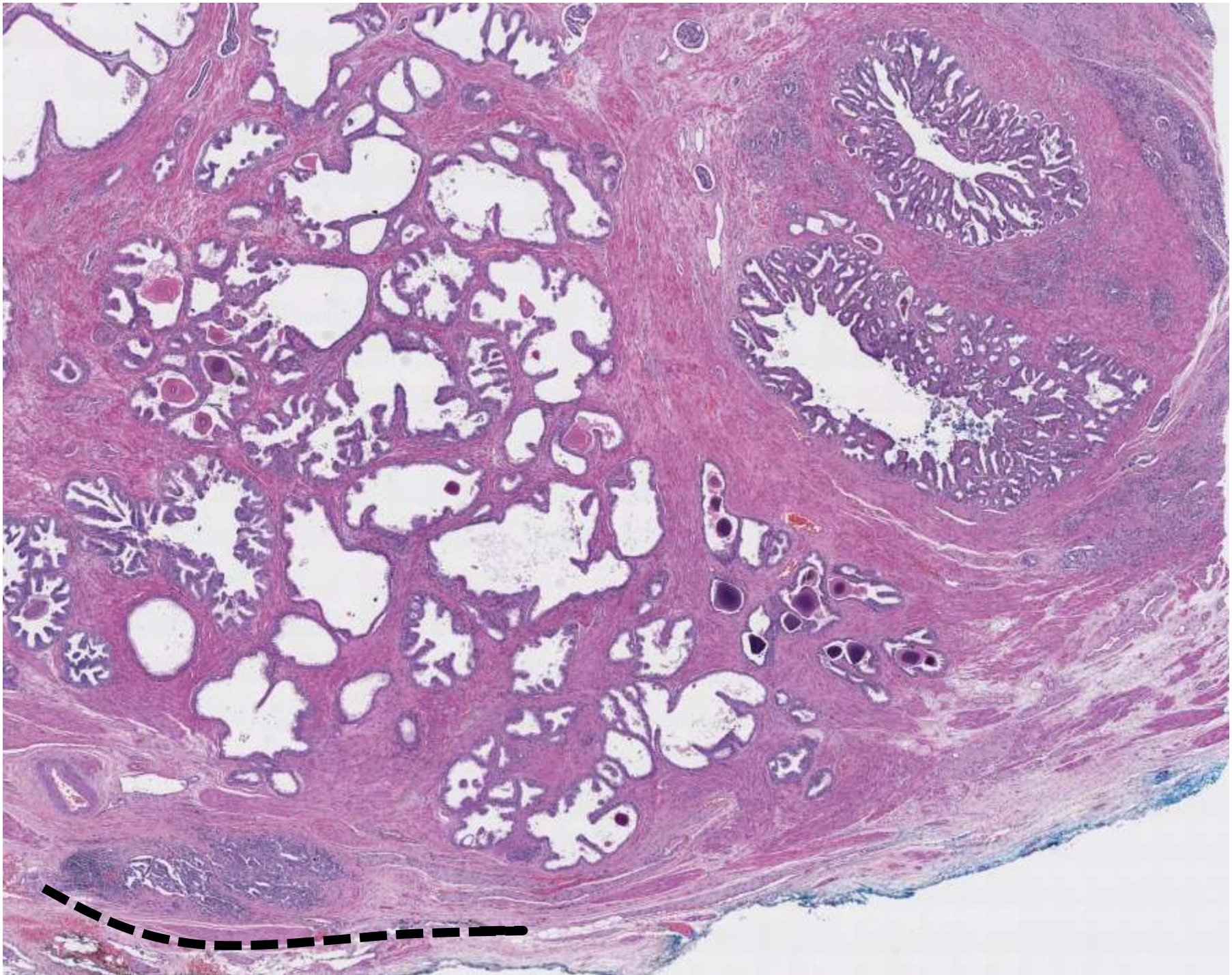
- **Urinary bladder, TUR:**
  - High grade urothelial carcinoma
    - Invading prostatic stroma
    - pT4a (clinically bladder mass invading prostate)

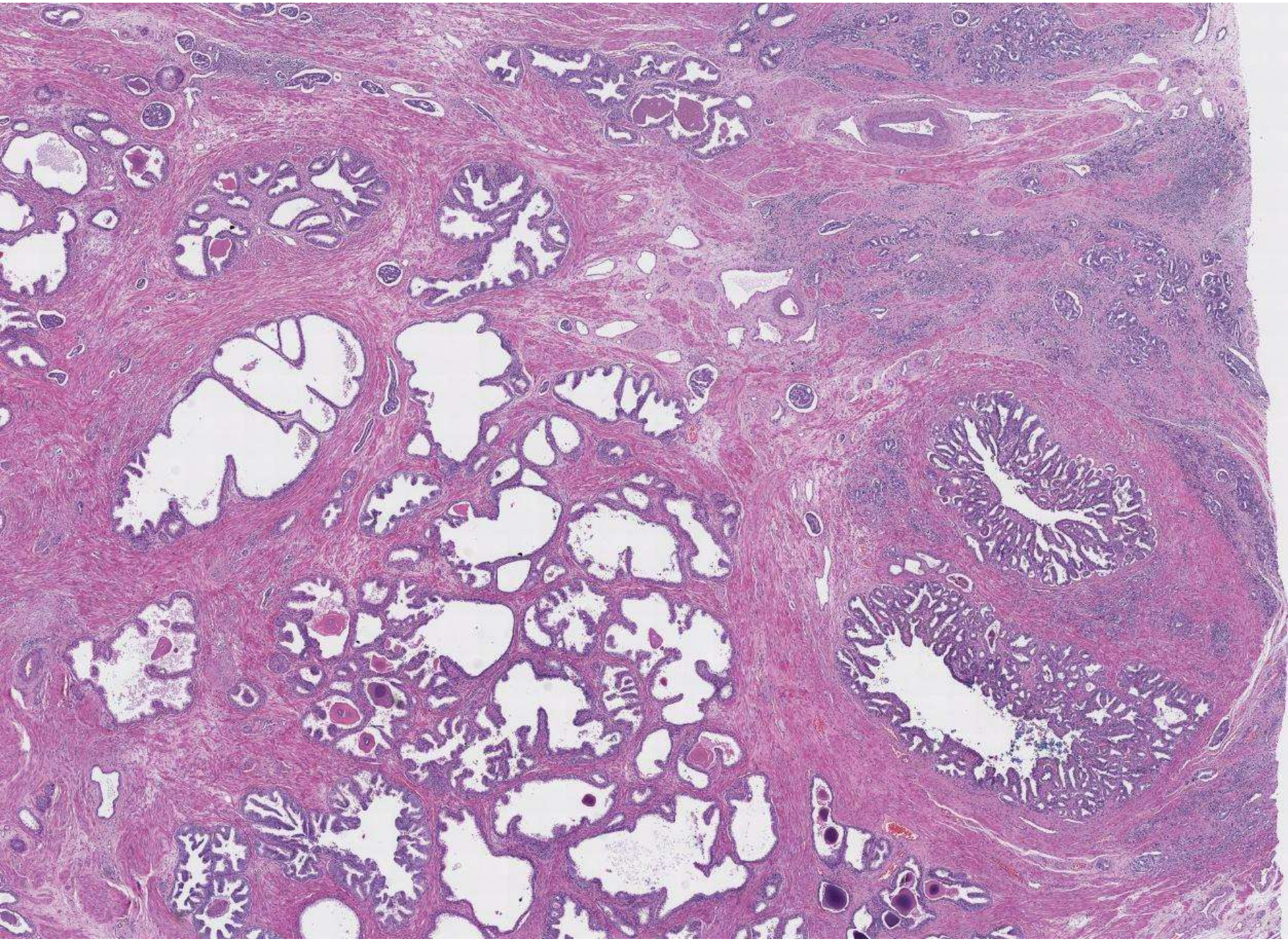
SB 6000

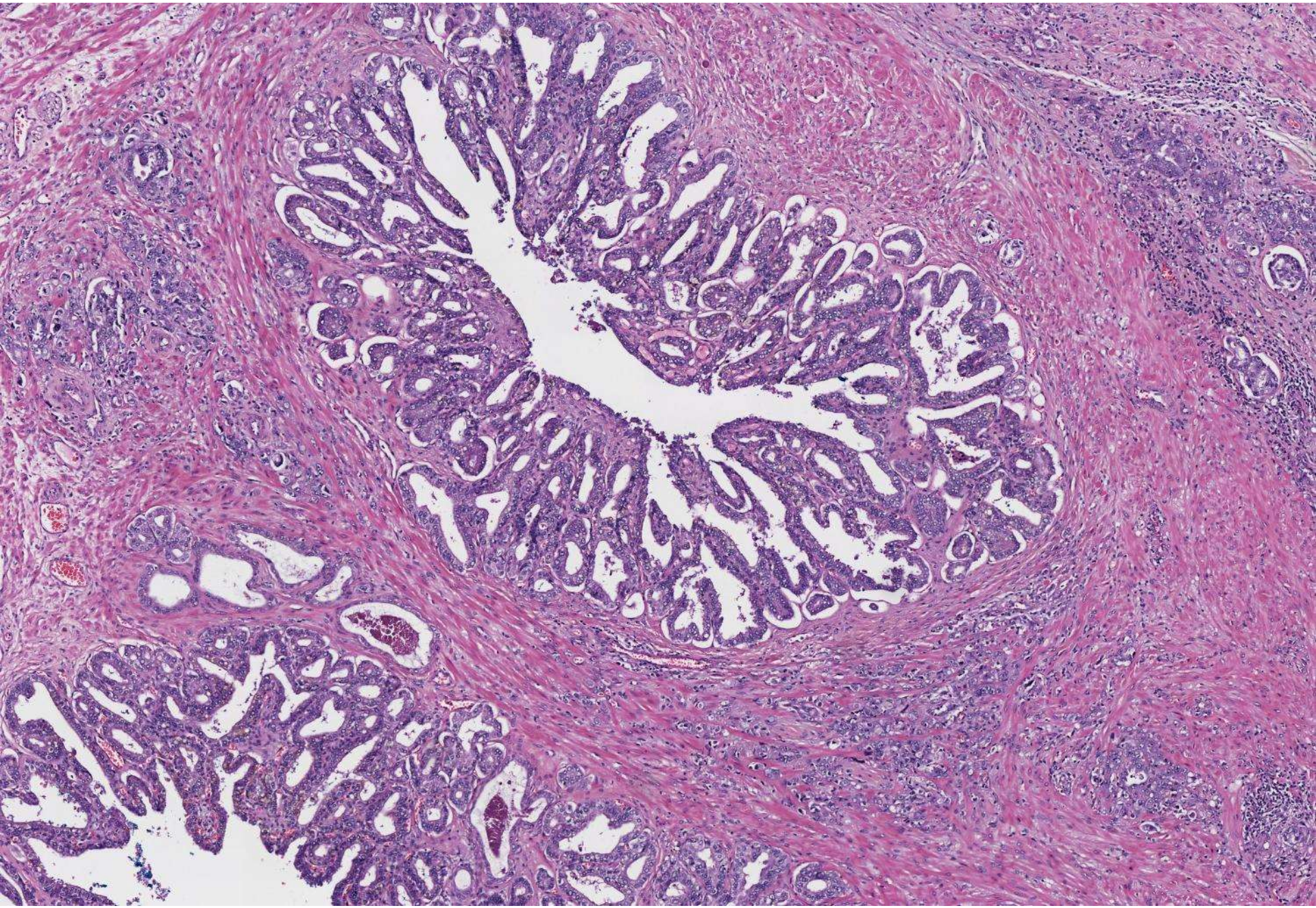
64-year-old man underwent radical prostatectomy. Pathologic stage of this prostate cancer?

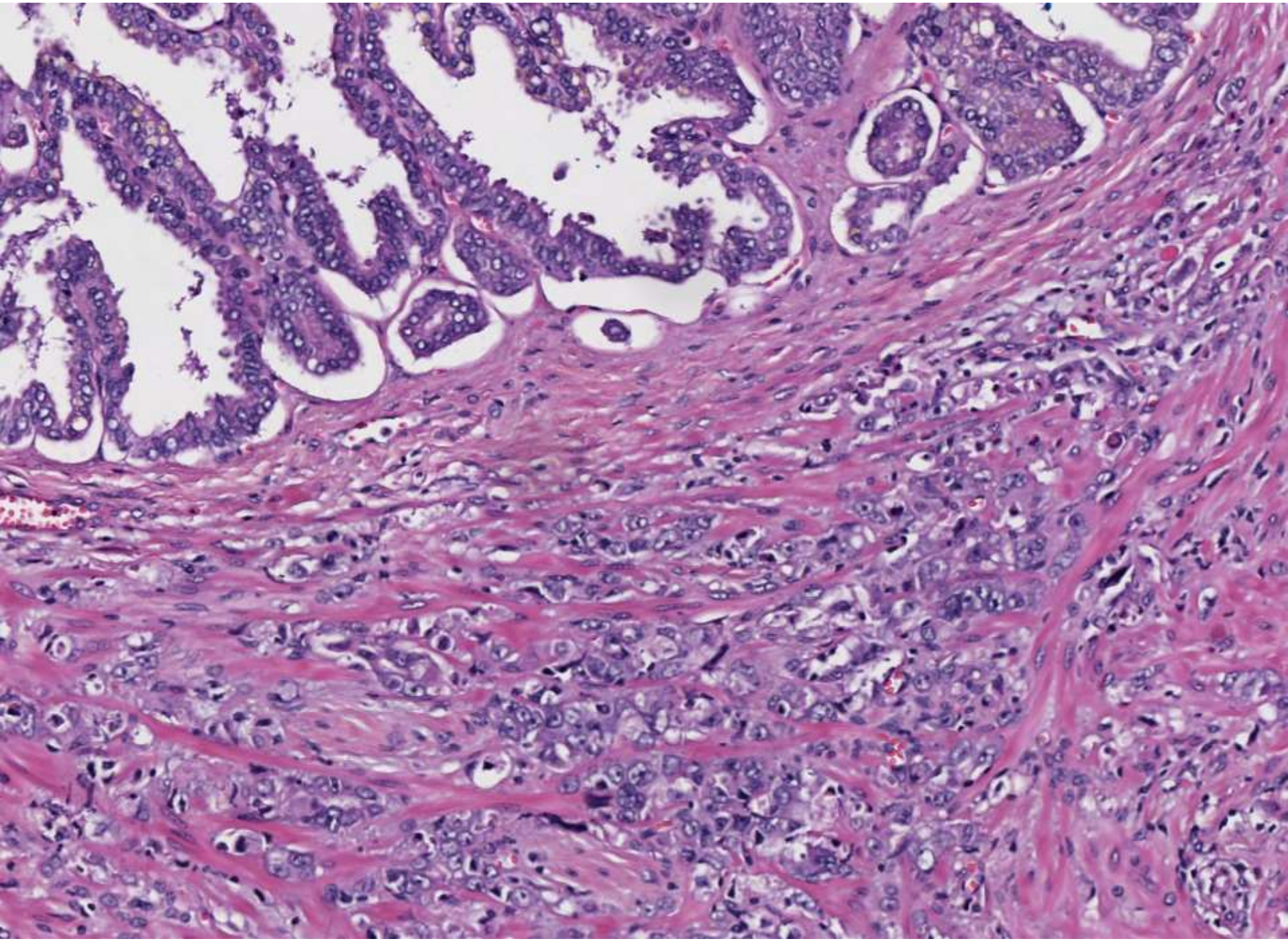
Ankur Sangoi; El Camino Hospital

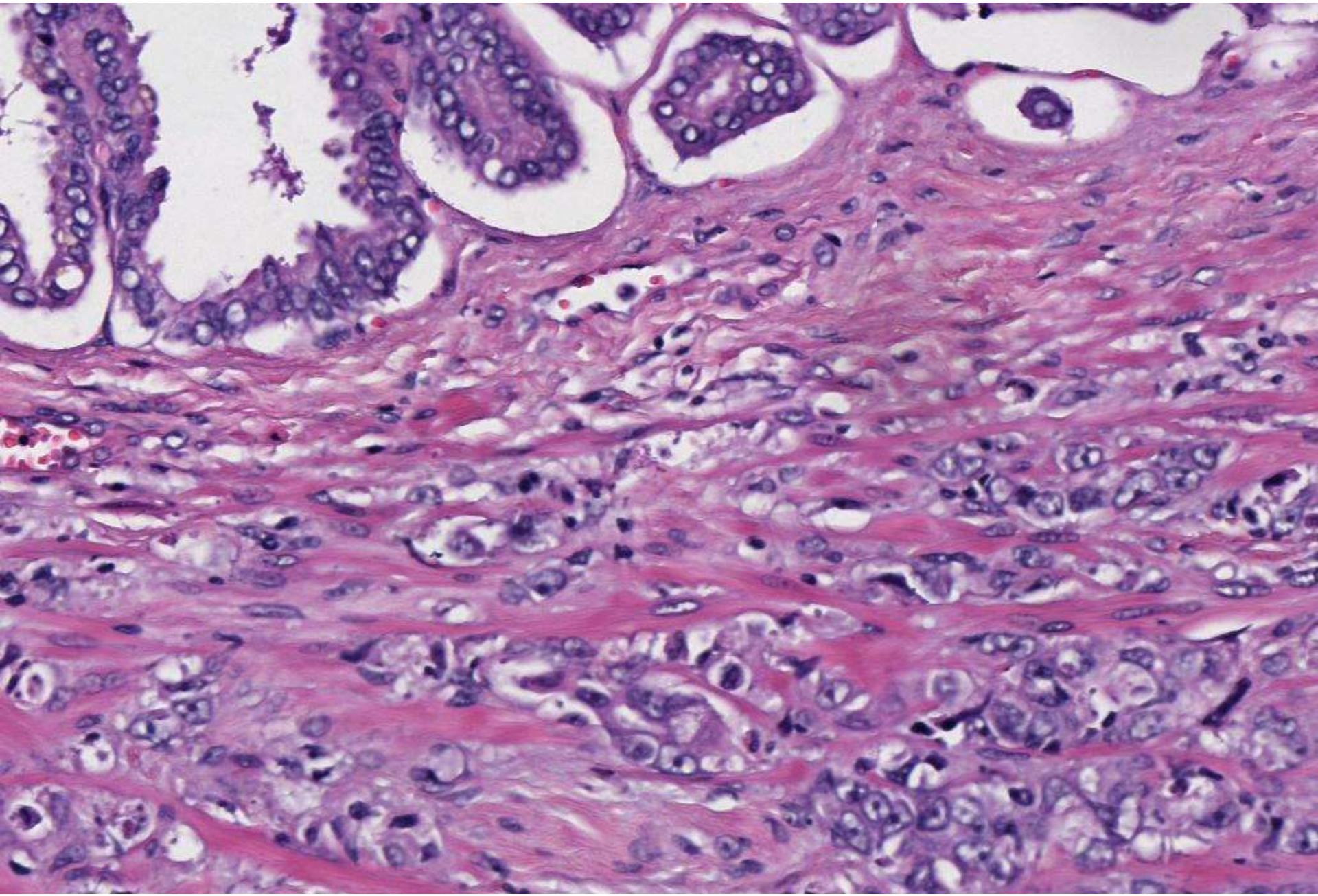












DIAGNOSIS?

AJCC 7th ed Prostate

Primary Tumor (pT)

___ Not identified

___ pT2: Organ confined

+ ___ pT2a: Unilateral, involving one-half of 1 side or less

+ ___ pT2b: Unilateral, involving more than one-half of 1 side but not both sides

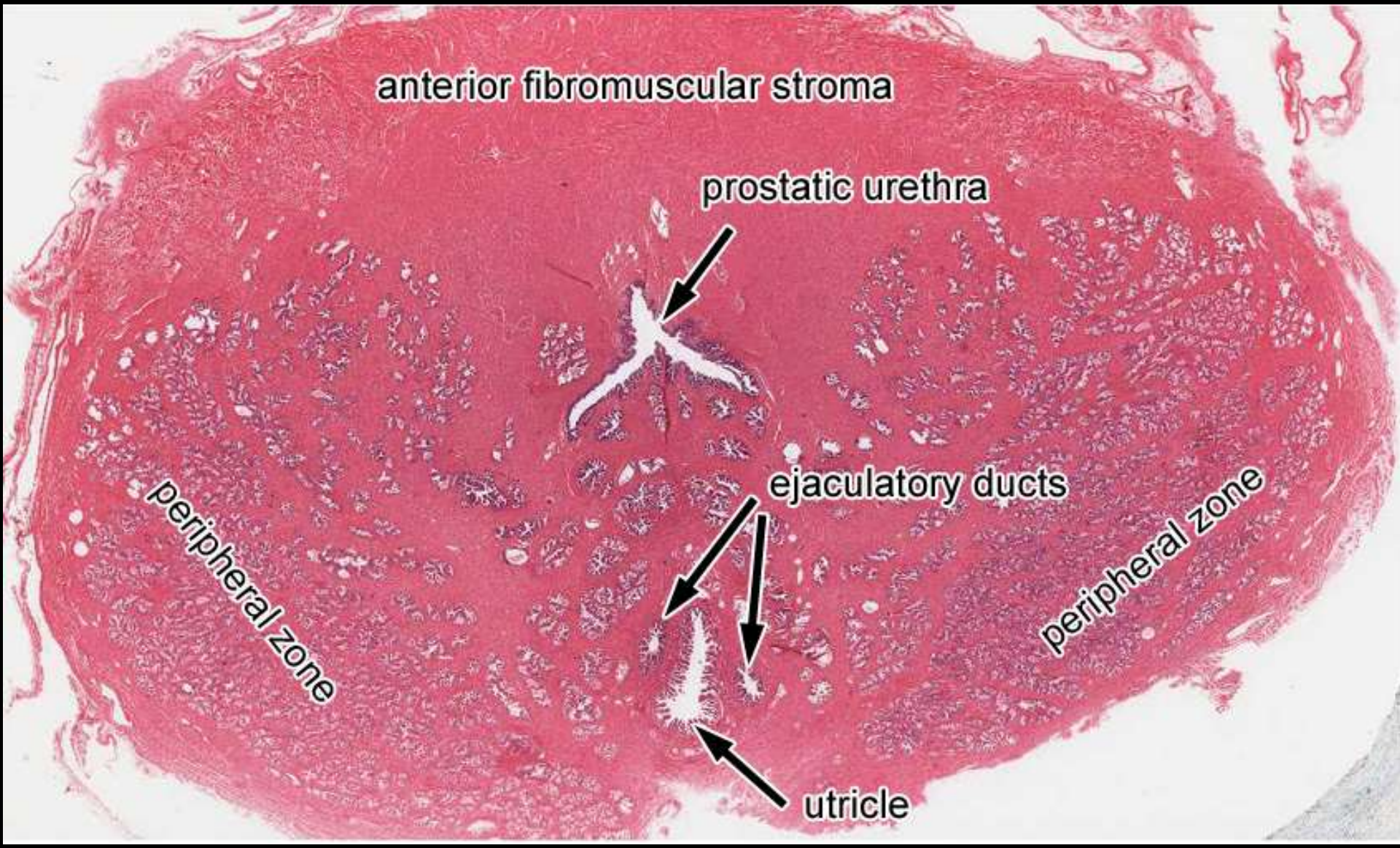
+ ___ pT2c: Bilateral disease

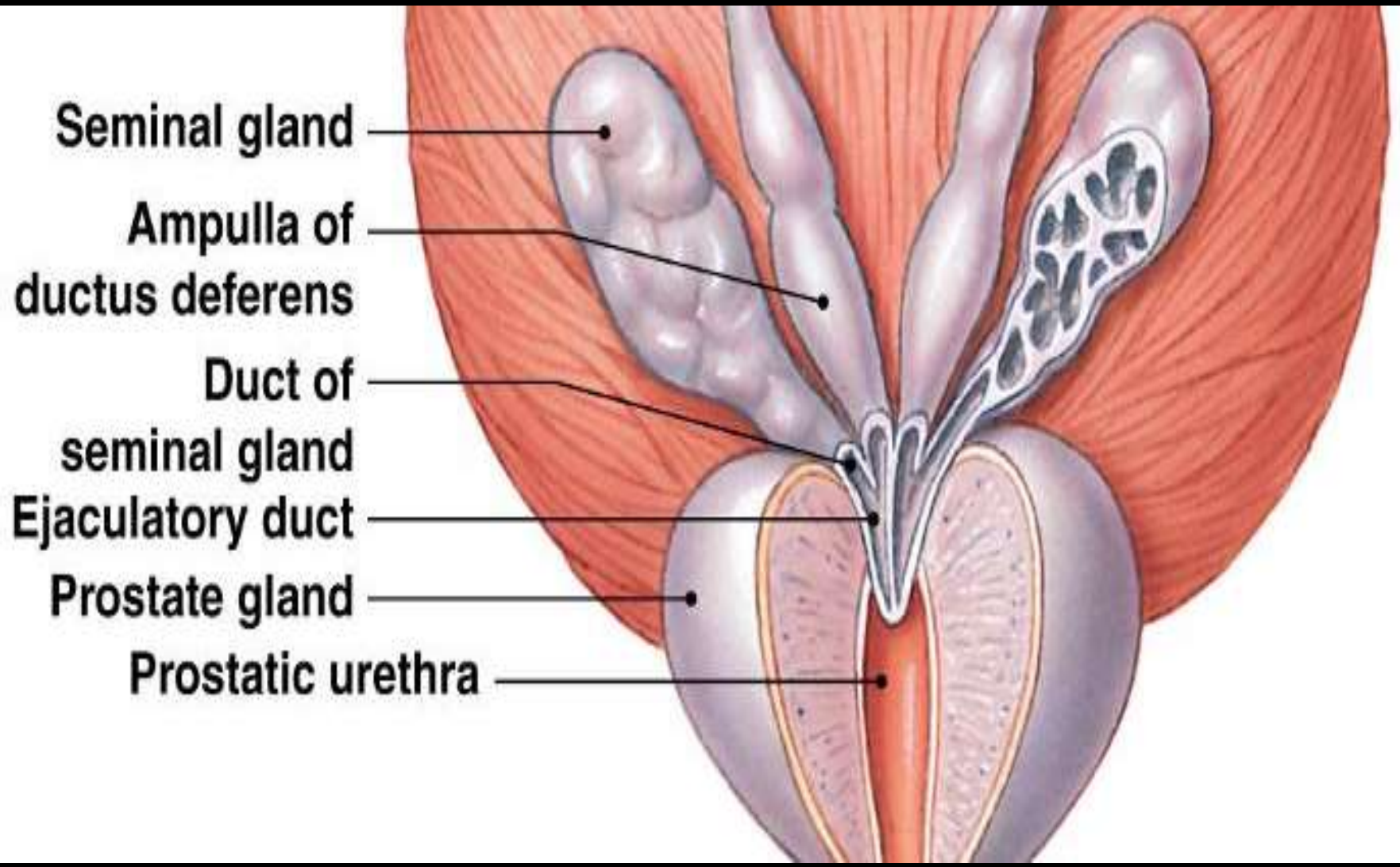
pT3: Extraprostatic extension

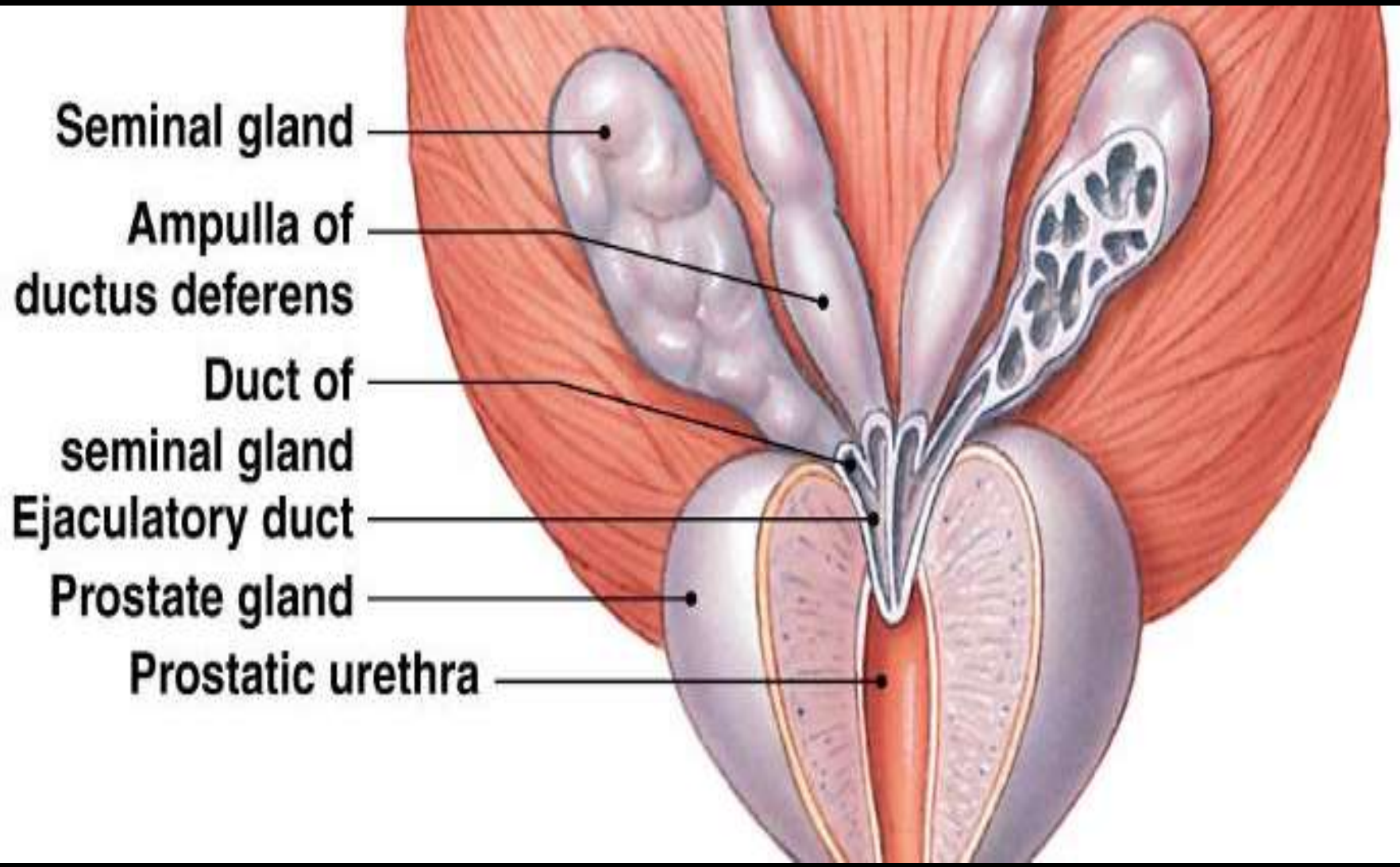
___ pT3a: Extraprostatic extension or microscopic invasion of bladder neck

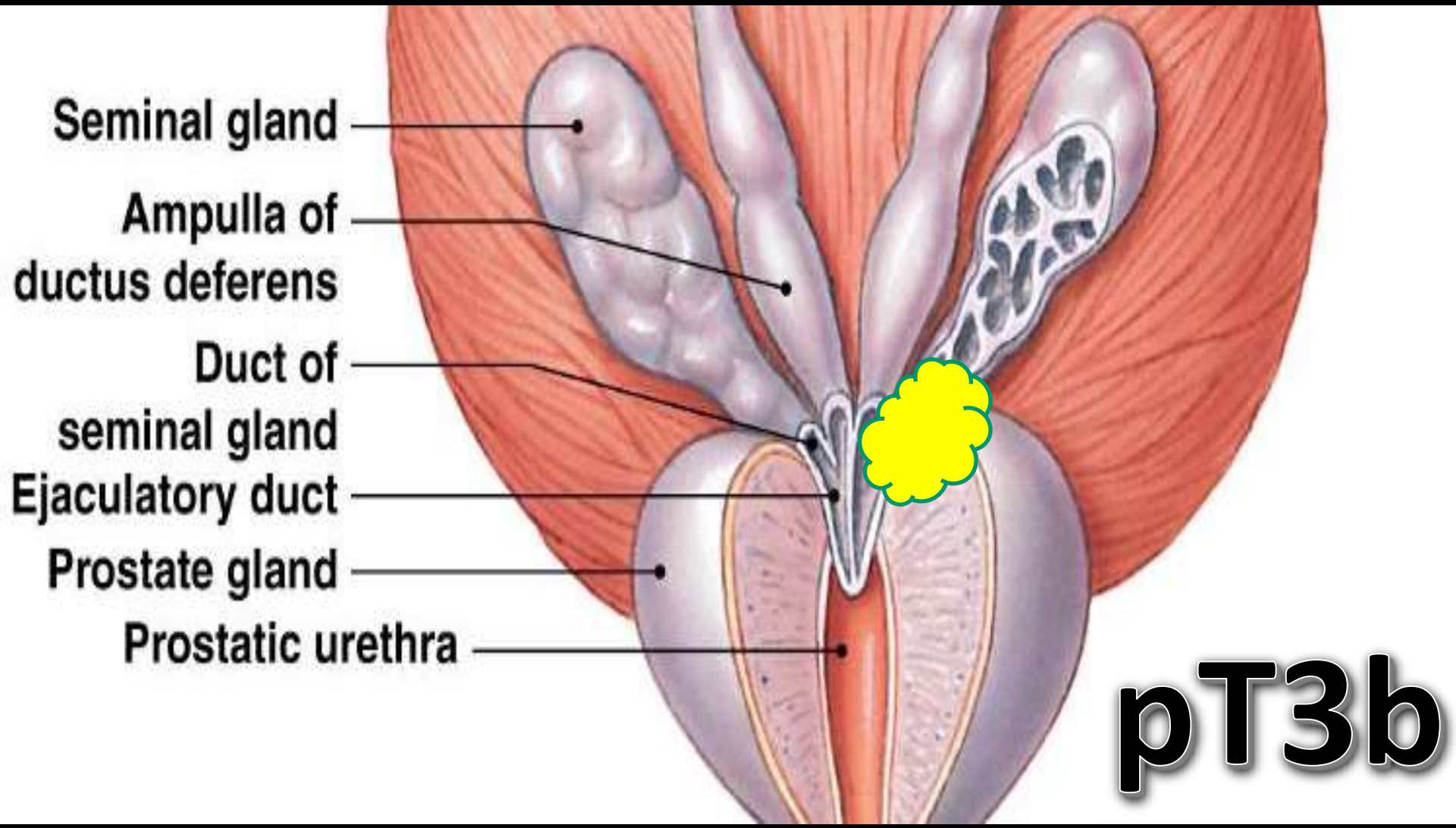
___ pT3b: Seminal vesicle invasion

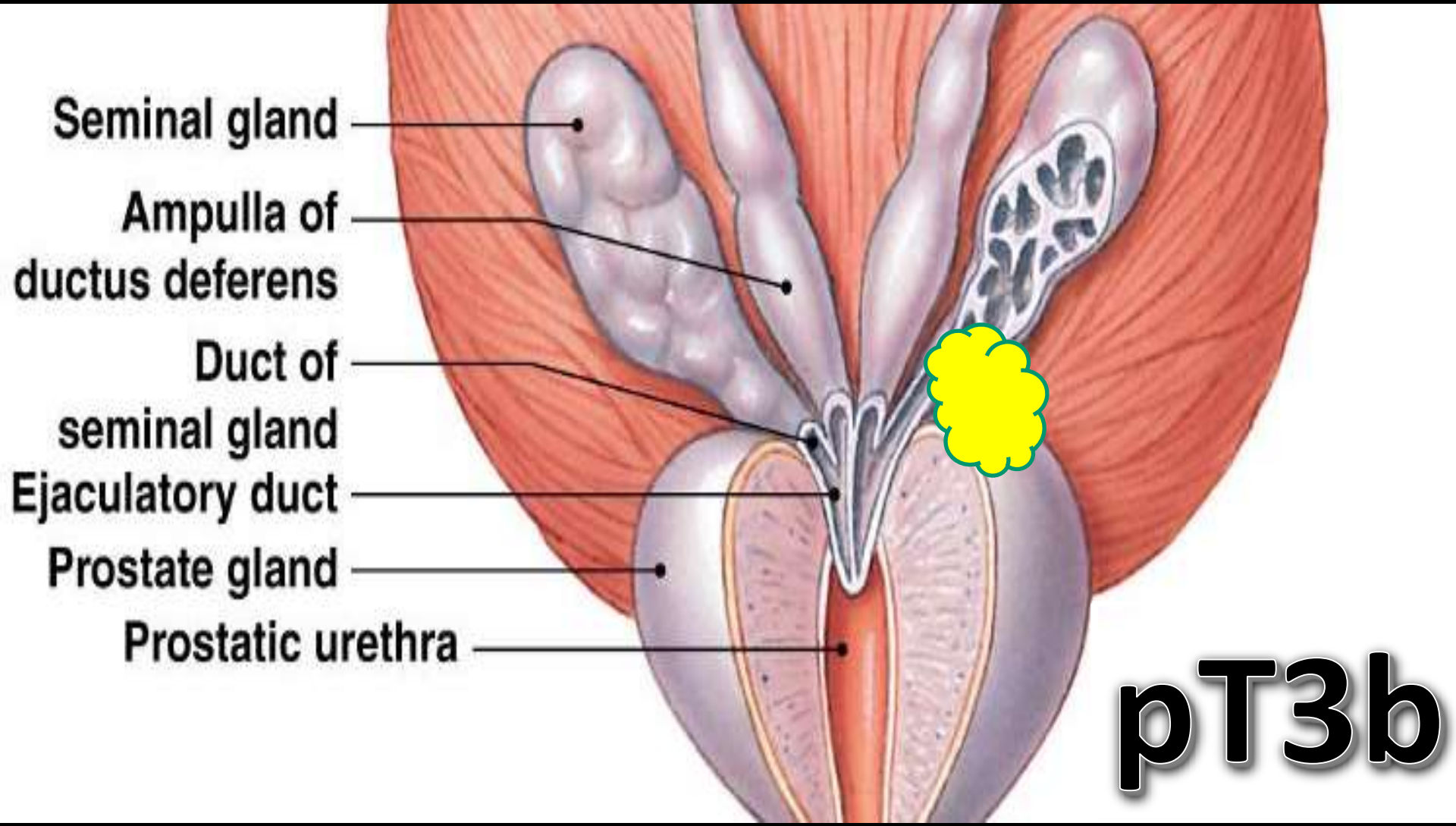
___ pT4: Invasion of rectum, levator muscles and/or pelvic wall (Note J)

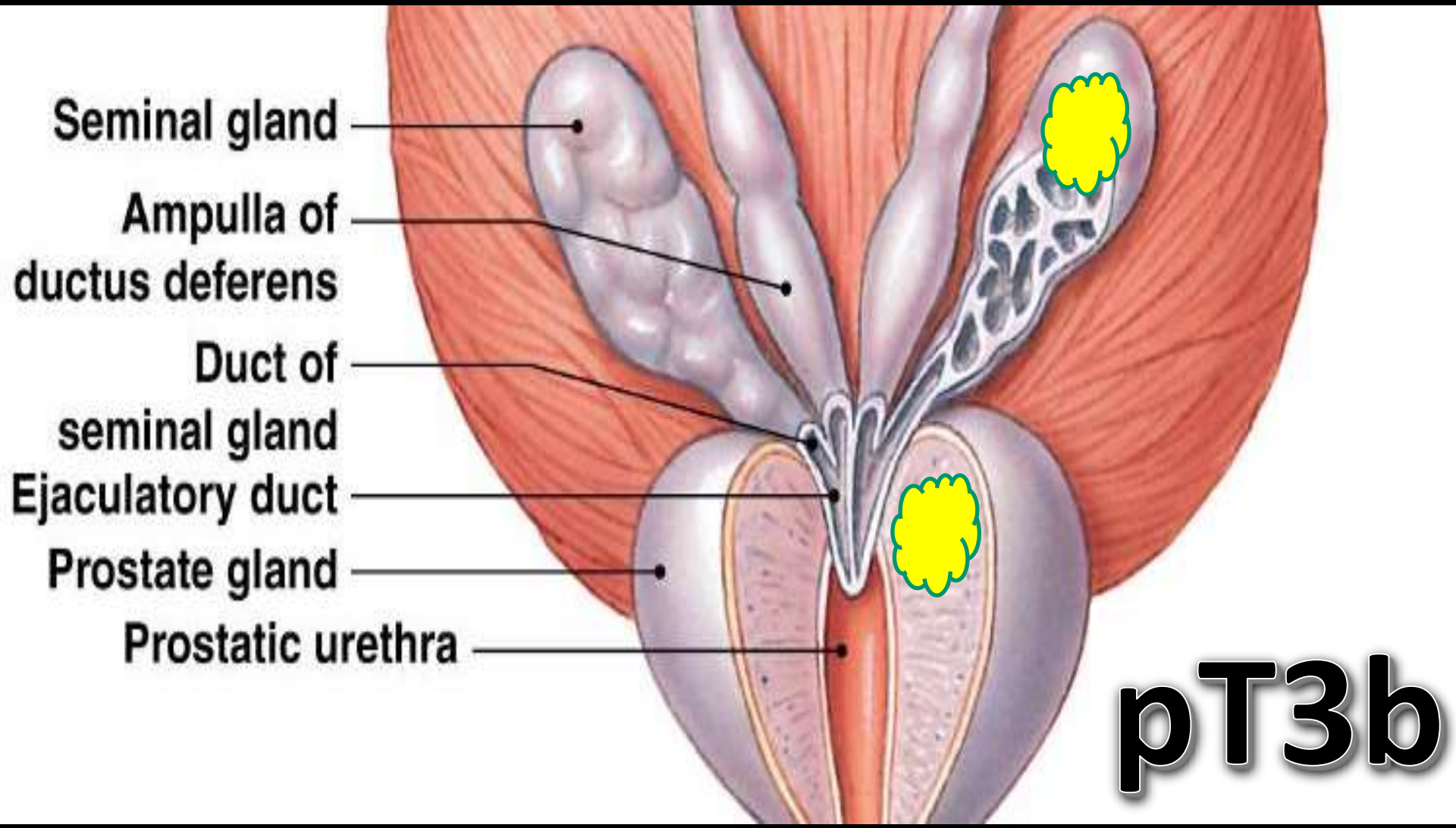

anterior fibromuscular stroma
prostatic urethra
ejaculatory ducts
peripheral zone
peripheral zone
utricle

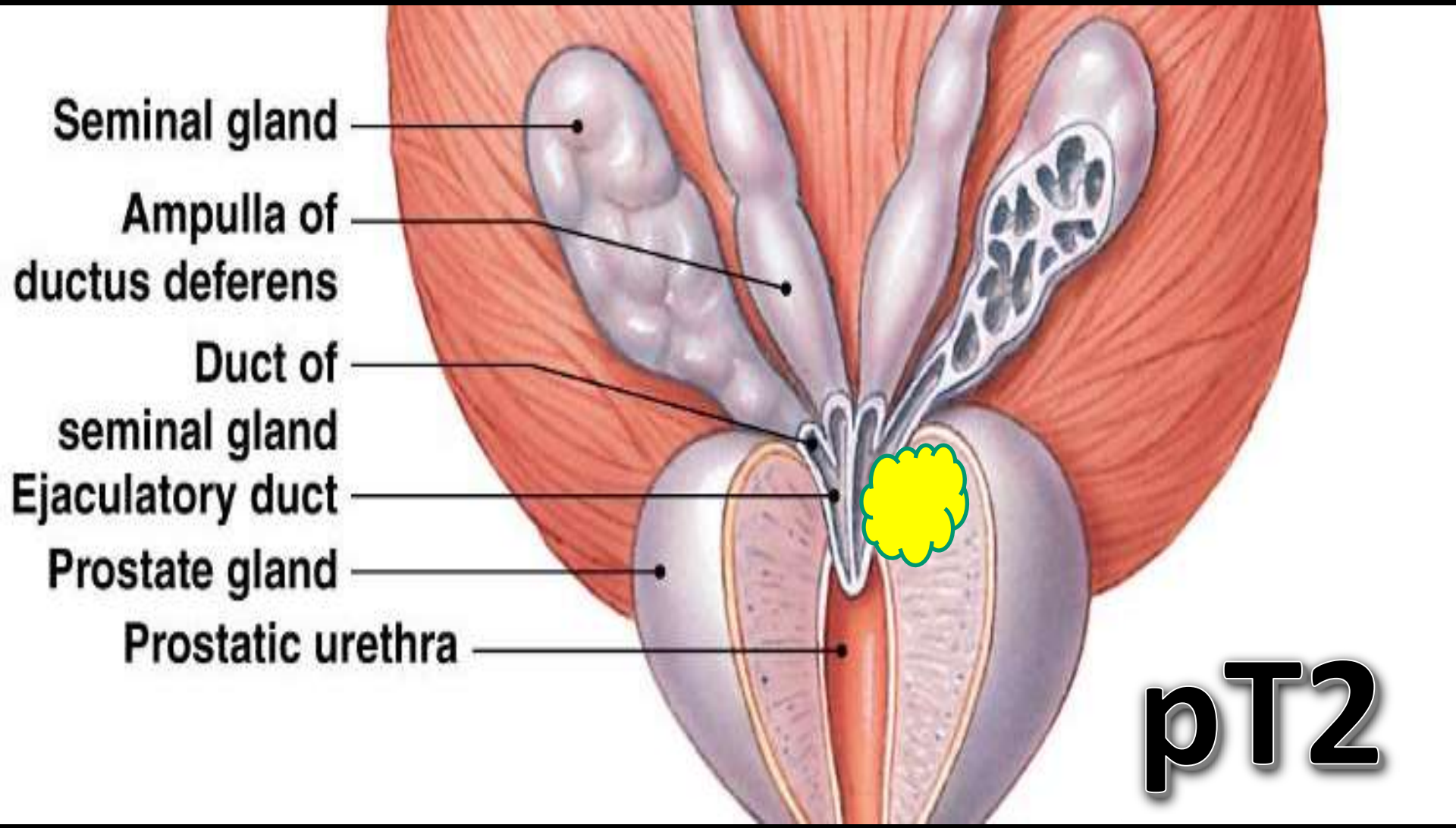

Seminal gland
Ampulla of ductus deferens
Duct of seminal gland
Ejaculatory duct
Prostate gland
Prostatic urethra

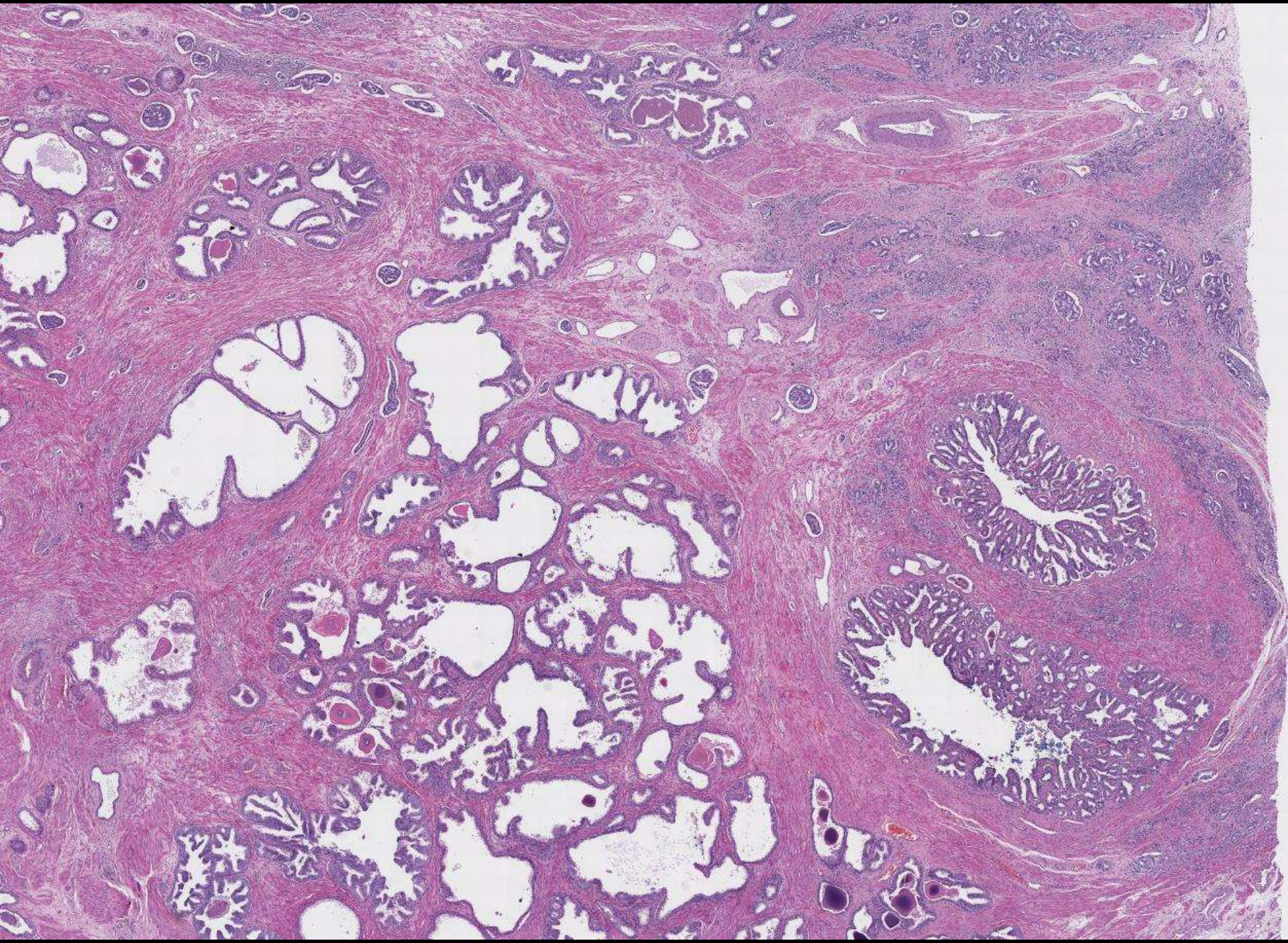

Seminal gland
Ampulla of ductus deferens
Duct of seminal gland
Ejaculatory duct
Prostate gland
Prostatic urethra


Seminal gland
Ampulla of ductus deferens
Duct of seminal gland
Ejaculatory duct
Prostate gland
Prostatic urethra
pT3b


Seminal gland
Ampulla of ductus deferens
Duct of seminal gland
Ejaculatory duct
Prostate gland
Prostatic urethra
pT3b


Seminal gland
Ampulla of ductus deferens
Duct of seminal gland
Ejaculatory duct
Prostate gland
Prostatic urethra
pT3b


Seminal gland
Ampulla of ductus deferens
Duct of seminal gland
Ejaculatory duct
Prostate gland
Prostatic urethra
pT2



DIAGNOSIS

- **Prostate, radical prostatectomy:**
  - Prostatic adenocarcinoma, Gleason grade 4+3 with tertiary pattern 5
  - Bilateral involvement
  - pT2c

International Society of Urological Pathology (ISUP) Consensus Conference on Handling and Staging of Radical Prostatectomy Specimens. Working group 4: seminal vesicles and lymph nodes

Daniel M Berney[1], Thomas M Wheeler[2], David J Grignon[3], Jonathan I Epstein[4], David F Griffiths[5], Peter A Humphrey[6], Theo van der Kwast[7], Rodolfo Montironi[8], Brett Delahunt[9], Lars Egevad[10], John R Srigley[11] and the ISUP Prostate Cancer Group*

Modern Pathology (2011) 24, 39–47

SV Grossing

- **SV sampling**
  - Selective (consensus) vs complete
- **Direction of SV sampling (no consensus)**
  - Transverse vs longitudinal vs combination
- **Junction of SV/prostate taken**
  - Consensus → YES

SV pT3b Staging (all consensus)

- SVI defined as muscular wall invasion
- Only extraprostatic SVI
- Ejaculatory duct not pT3b
- Method of SVI not recorded

SV pT3b Staging (no consensus)

- **Vascular invasion of SV only as pT3b**