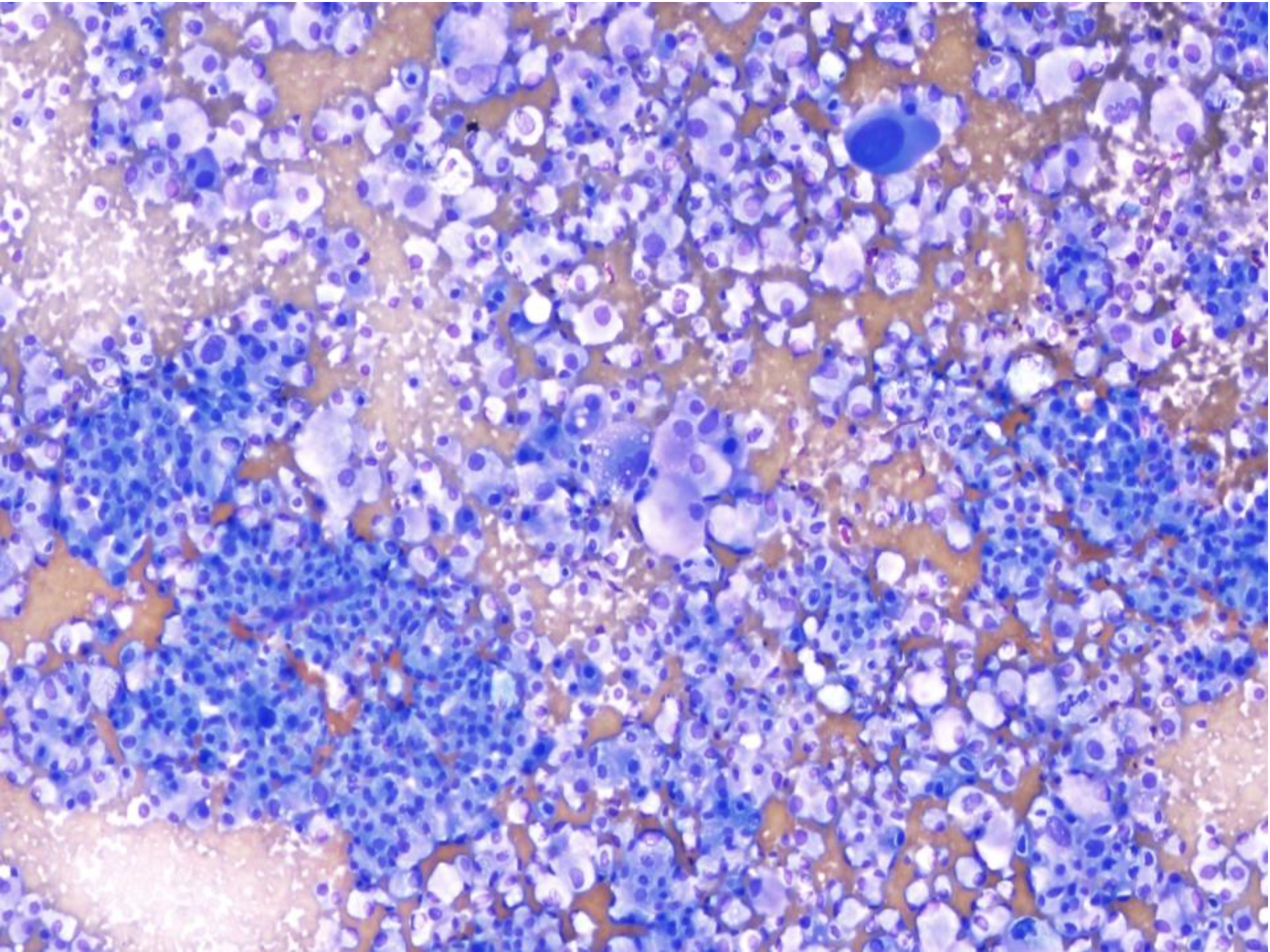


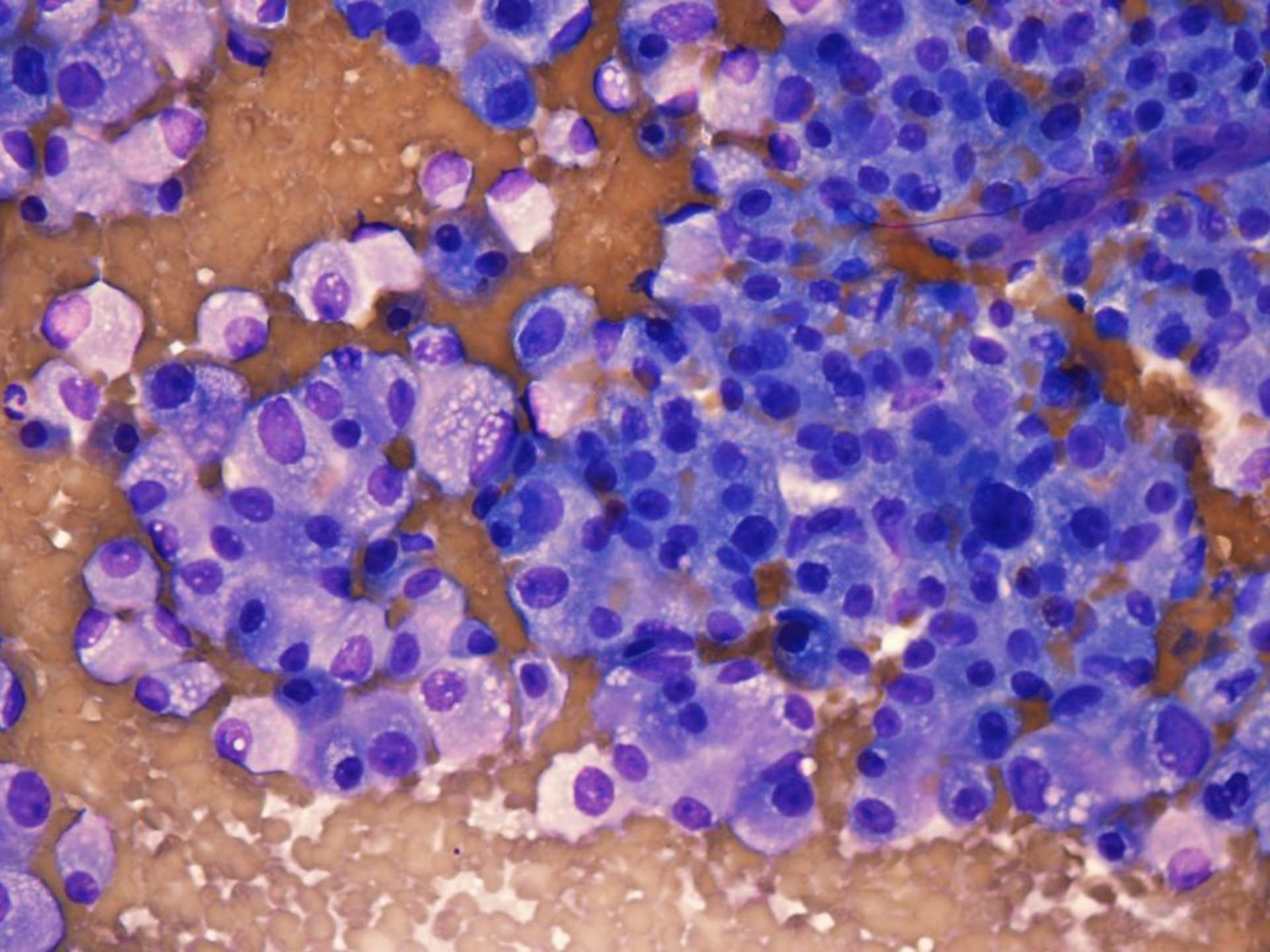
Interesting Case Conference

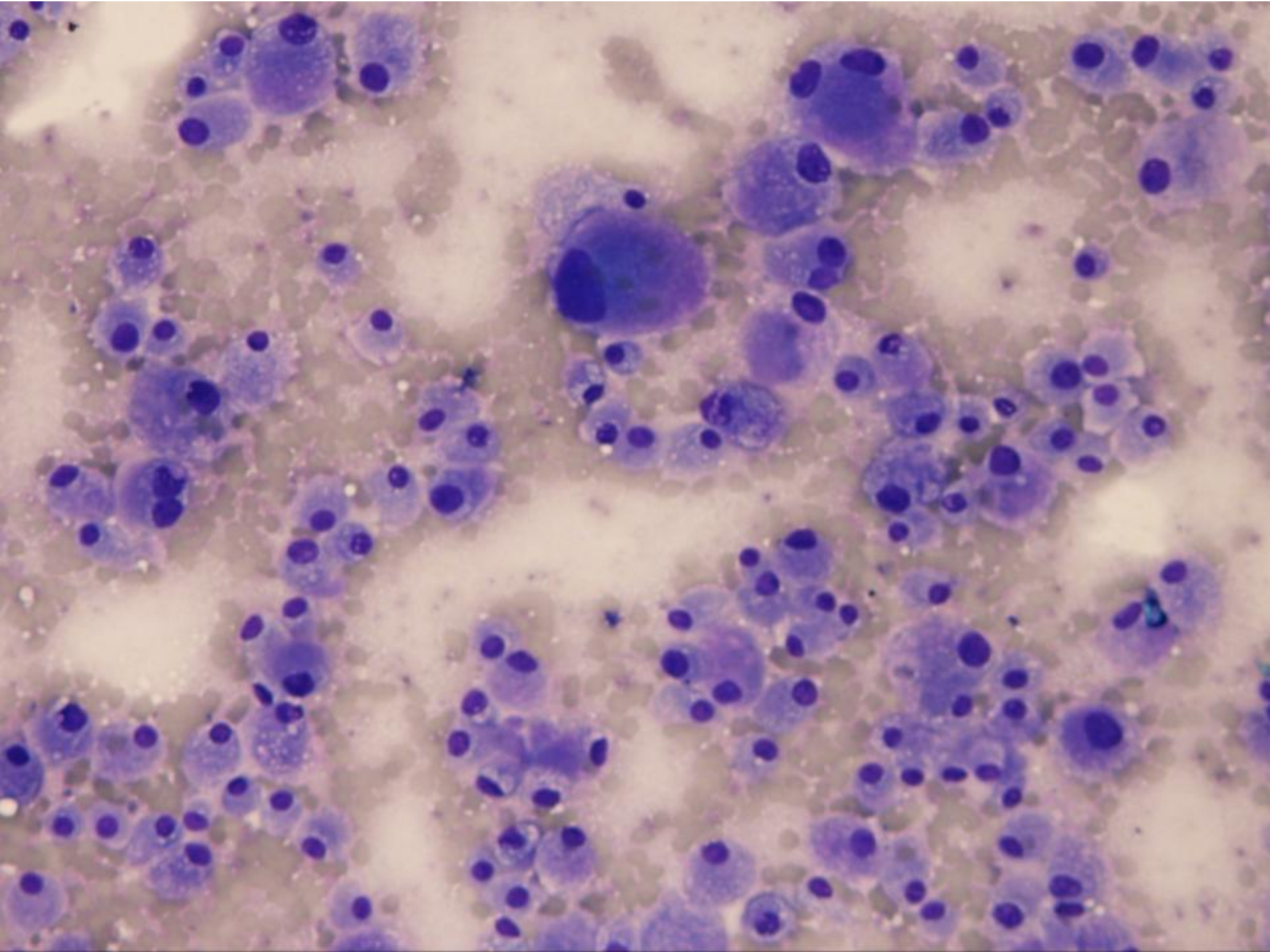
1/6/14

History

- 79 yo female with a positive history of cancer
- Now presenting with 2.2 x 1.7 cm pancreatic head mass
- DDx: metastasis vs primary pancreatic neoplasm







Primary vs Met?

Differential Diagnosis:

- Pancreatic endocrine neoplasm

- Pancreatic acinar cell carcinoma

- Pancreatic adenocarcinoma

- Metastasis

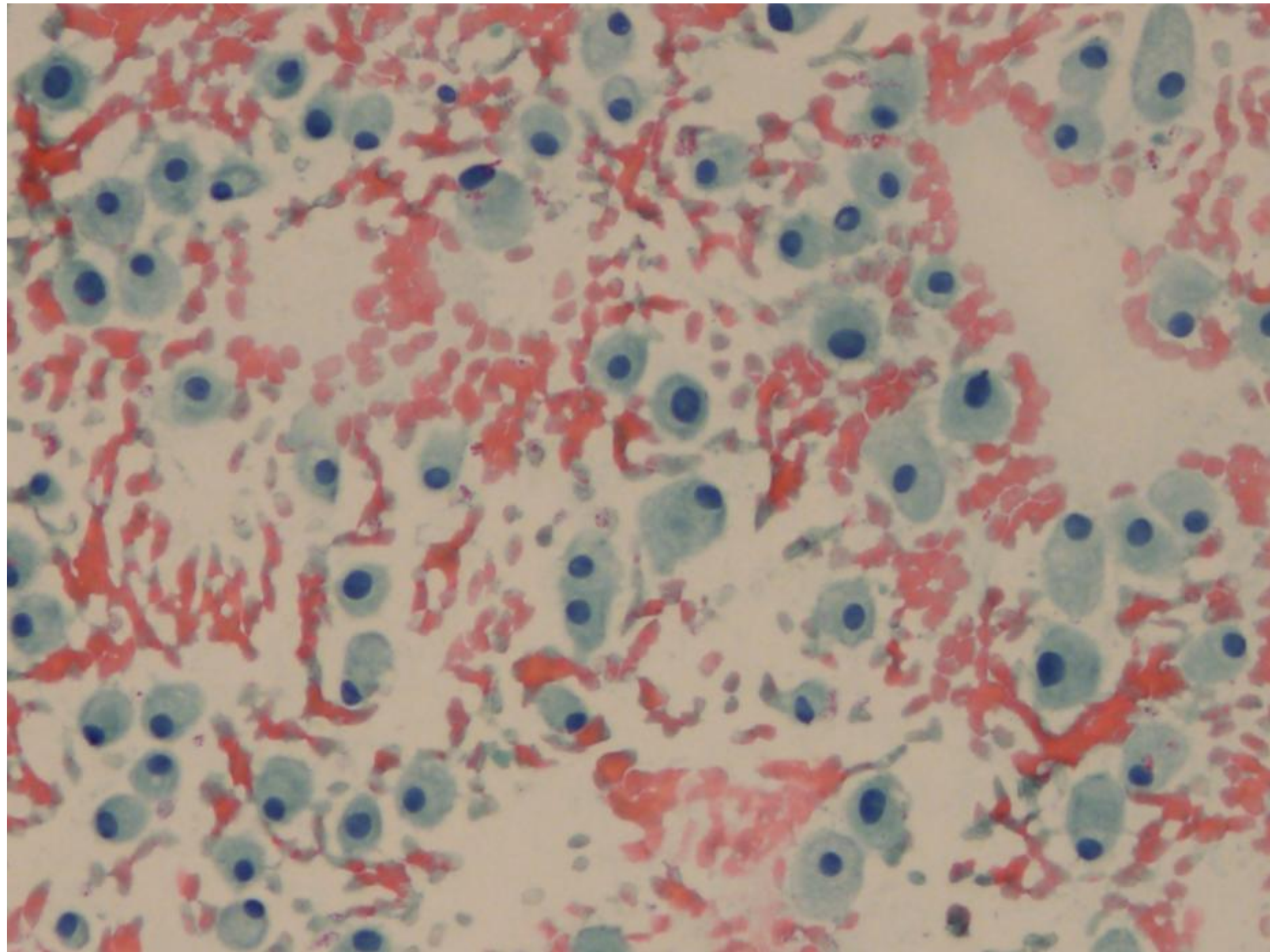
 - Melanoma

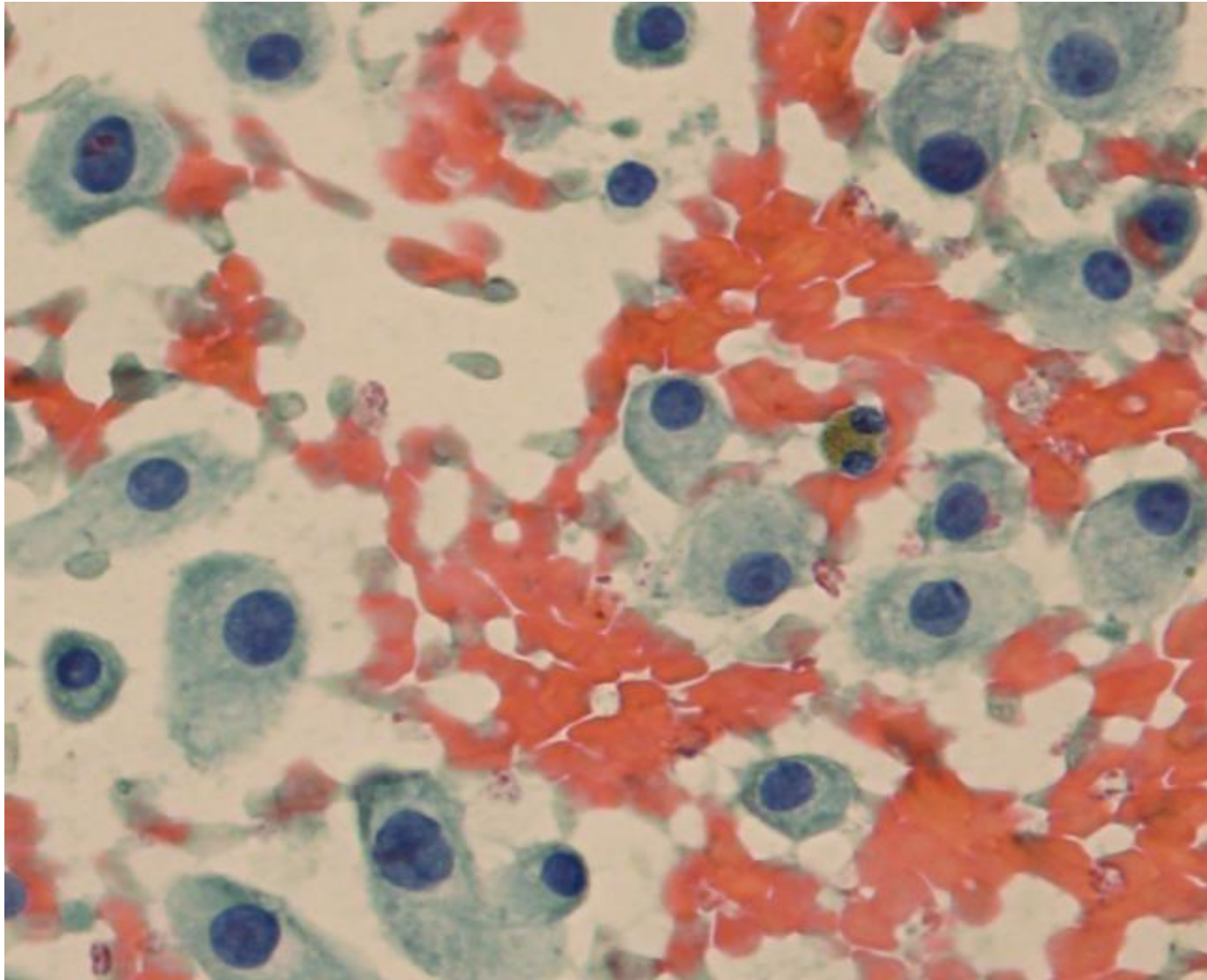
 - Metastatic carcinoma

On-site Assessment: Malignant cells present, consistent with the patient's history of...

Patient's cancer history

- Renal cell carcinoma (s/p Left nephrectomy in 2003).
- Slides/report unavailable – subtype unknown
- Outside hospital clinical notes mention recurrences/metastases (2009, 2011, 2013). They mention metastatic renal cell carcinoma with “granular histology” but do not specify exact subtype by name. Pathology reports not available for those cases.



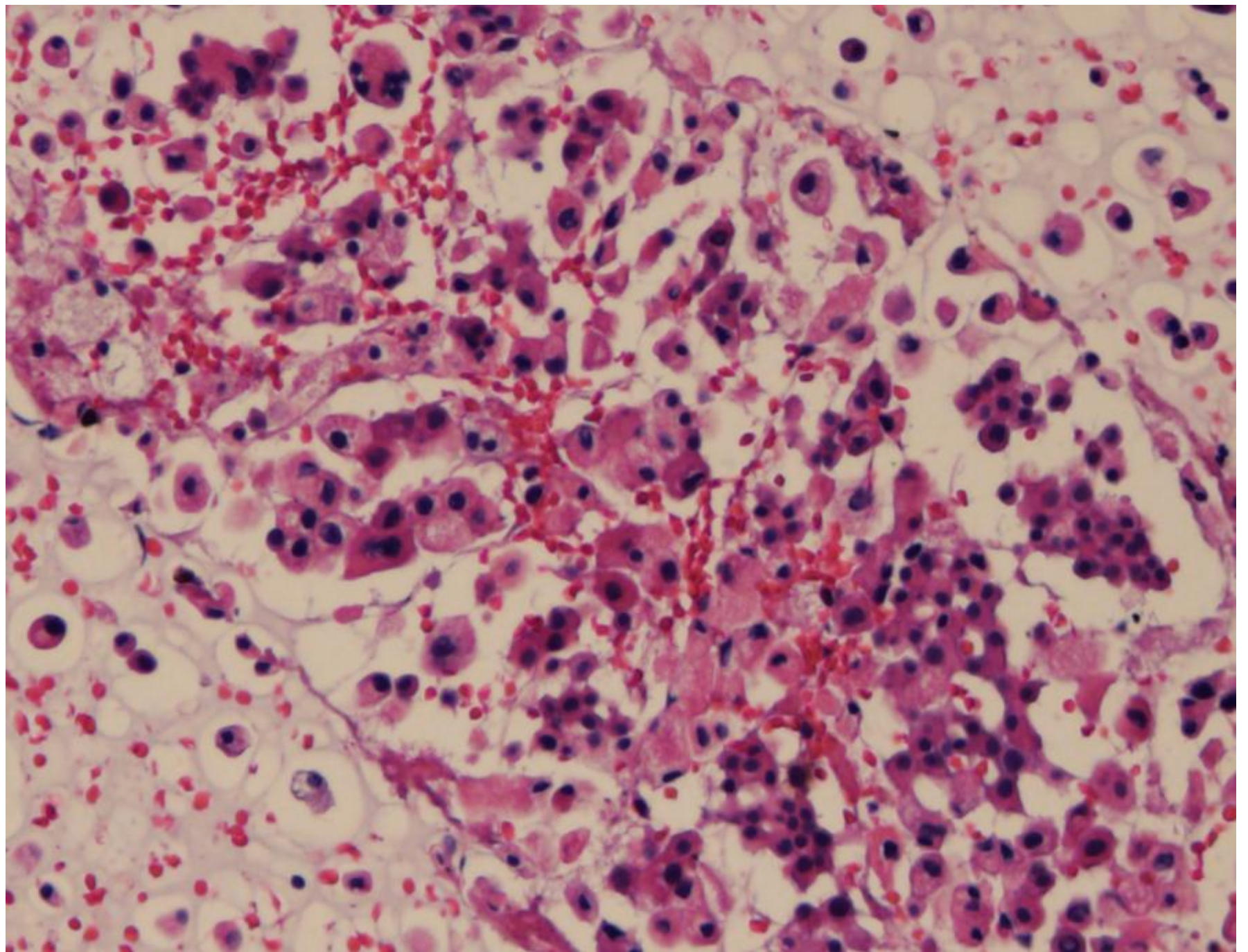


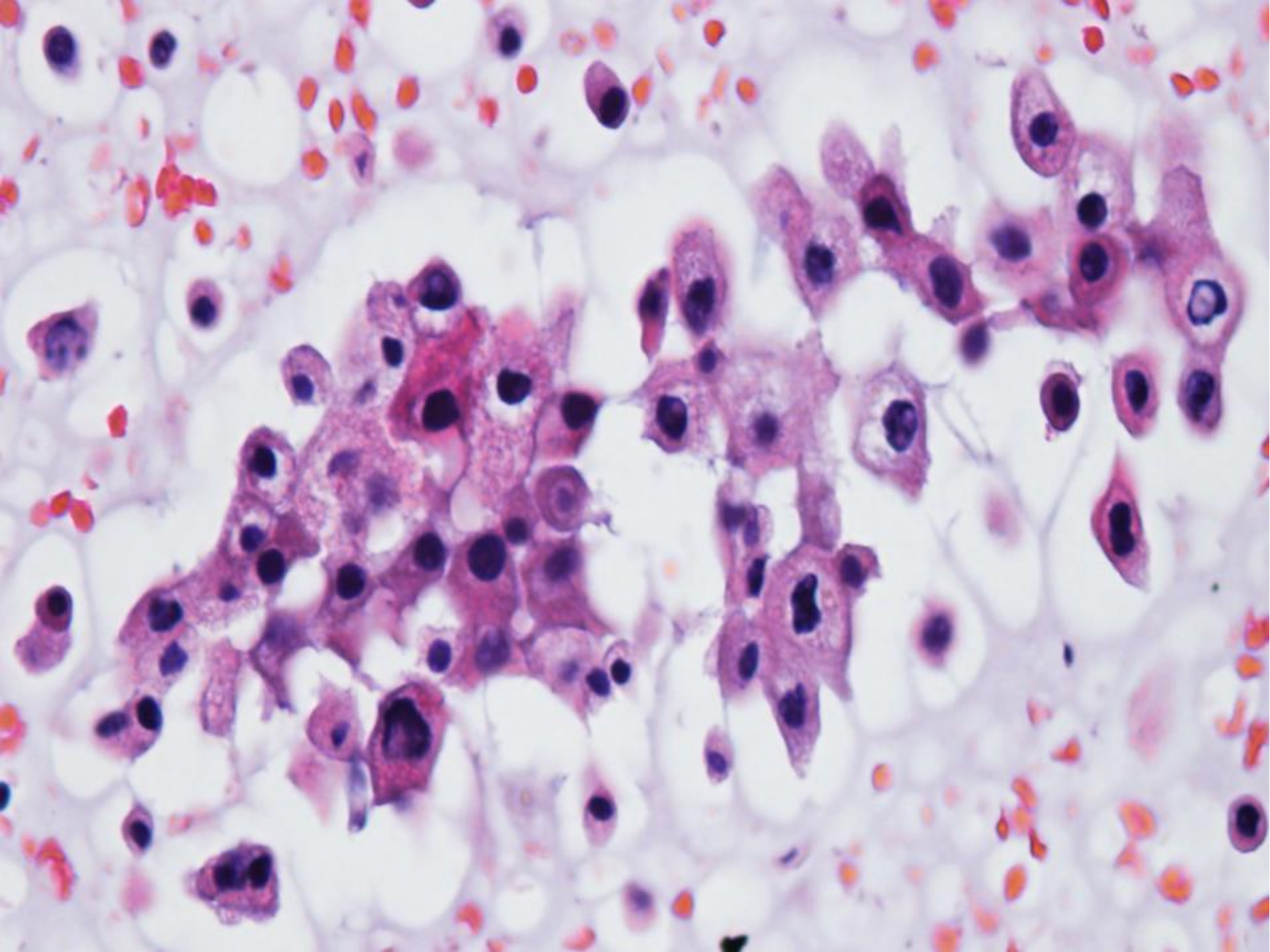
Flocculent

Latin:

floccus = tuft of wool

- Having or resembling tufts of wool.
- Having a loosely clumped texture.





Renal Epithelial Neoplasms: DDx

“Granular features”

Clear cell-eosinophilic variant

Chromophobe

Oncocytoma

Papillary

Epithelioid AML

RCC, unclassified

Table 42.6
Sternberg's Diagnostic
Surgical Pathology
5th edition. 2010

TABLE II. *Immunohistochemical Features of Renal Cell Carcinoma Variants and Oncocytoma.**

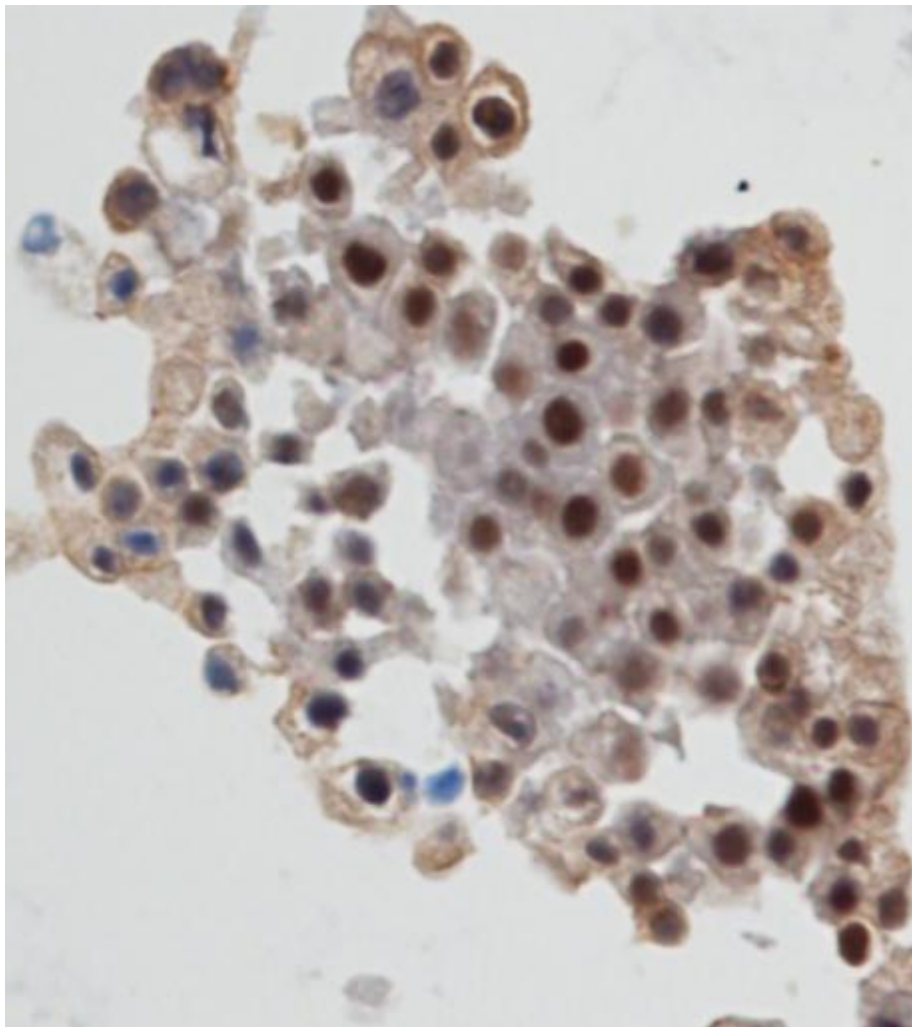
<i>Marker</i>	<i>CC-RCC</i>	<i>CR-RCC</i>	<i>P-RCC</i>	<i>ONC</i>
→ Vimentin	+	—	+	—
Pan-CK (AE1/AE3)	+	+	+	+
→ CK7 ^{7,†}	—	+	+	—
CD10 ^{7,10}	+	—/+	—/+	—/+
RCC-Ma ¹⁰	+	—	+	—
→ Pax-2 ^{5,7,8,†}	+	—	+	+
Aquaporin1 ⁷	+	—	+	—
γ-H2AX ³	+	N/A	+	N/A
→ CD117 [†]	—	+	—	+
AMACR [‡]	—	—	+	—
→ CA IX ⁸	+	—	+	—

* Data are based largely on the results of tissue/microarray-based studies. Cytologic data are available mainly for clear cell and papillary renal cell carcinomas.

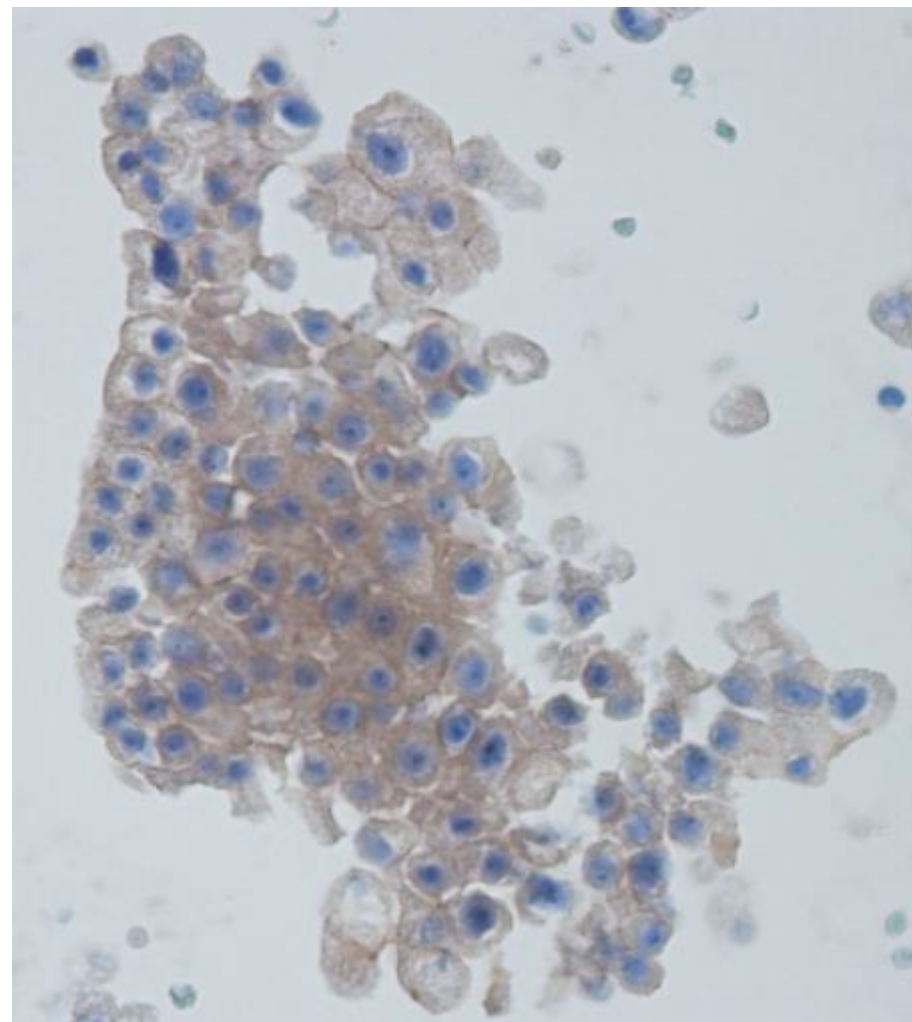
CC-RCC indicates clear cell renal cell carcinoma; EGC-RCC, RCC with eosinophilic granular cells; CR-RCC, chromophobe RCC; ONC, oncocytoma; P-RCC, papillary RCC; RCC-Ma, renal cell carcinoma marker; N/A, data not available; AMACR, alpha-methylacyl-CoA racemase; CA IX, carbonic anhydrase IX; CK, cytokeratin.

† Memeo L, Jhang J, Assaad AM, et al. Immunohistochemical analysis for cytokeratin 7, KIT, and PAX2: value in the differential diagnosis of chromophobe cell carcinoma. *Am J Clin Pathol.* 2007;127:225-229.

‡ Tretiakova MS, Sahoo S, Takahashi M, et al. Expression of alpha-methylacyl-CoA racemase in papillary renal cell carcinoma. *Am J Surg Pathol.* 2004;28:69-76.

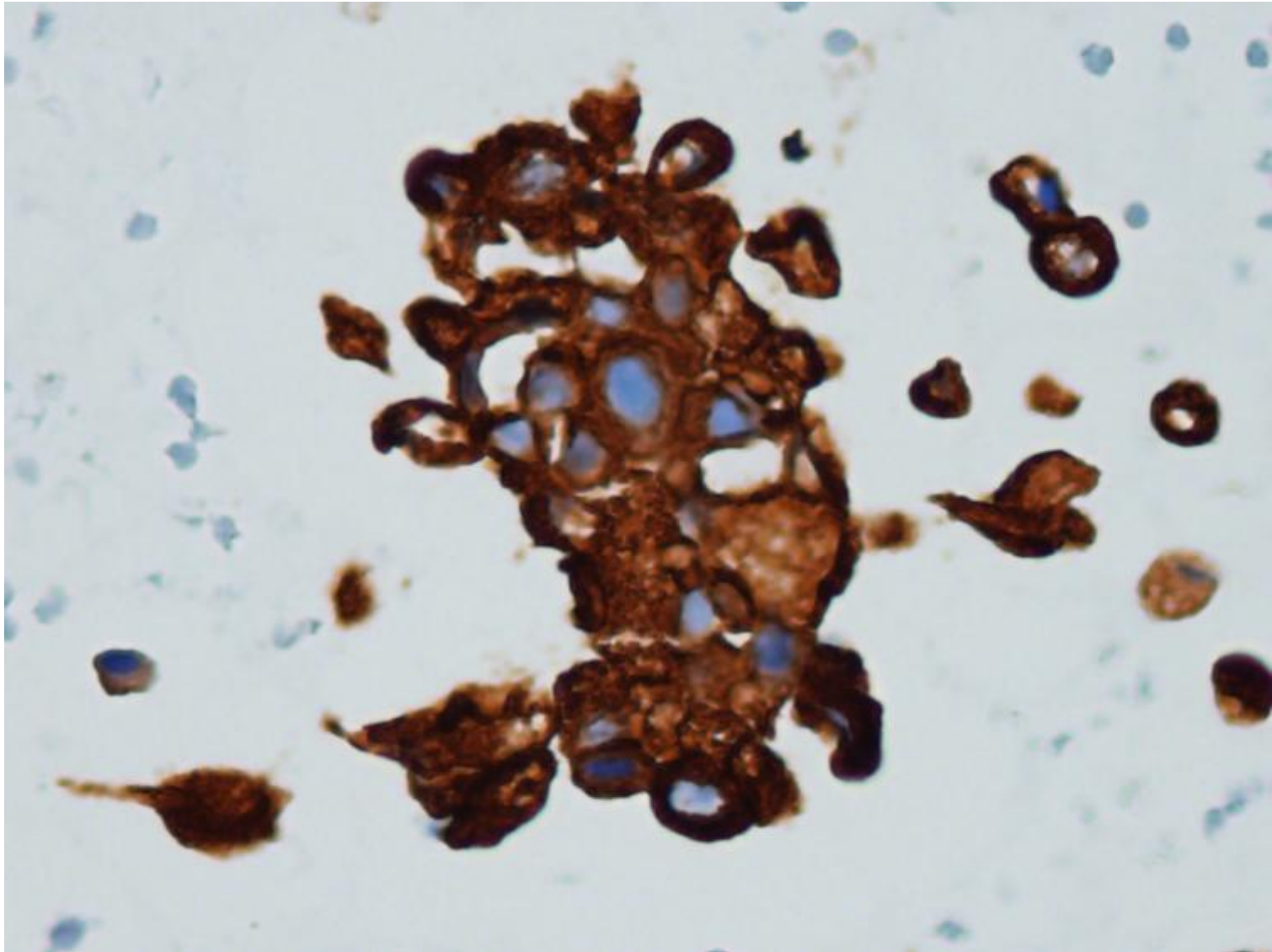


Pax-8 (+)

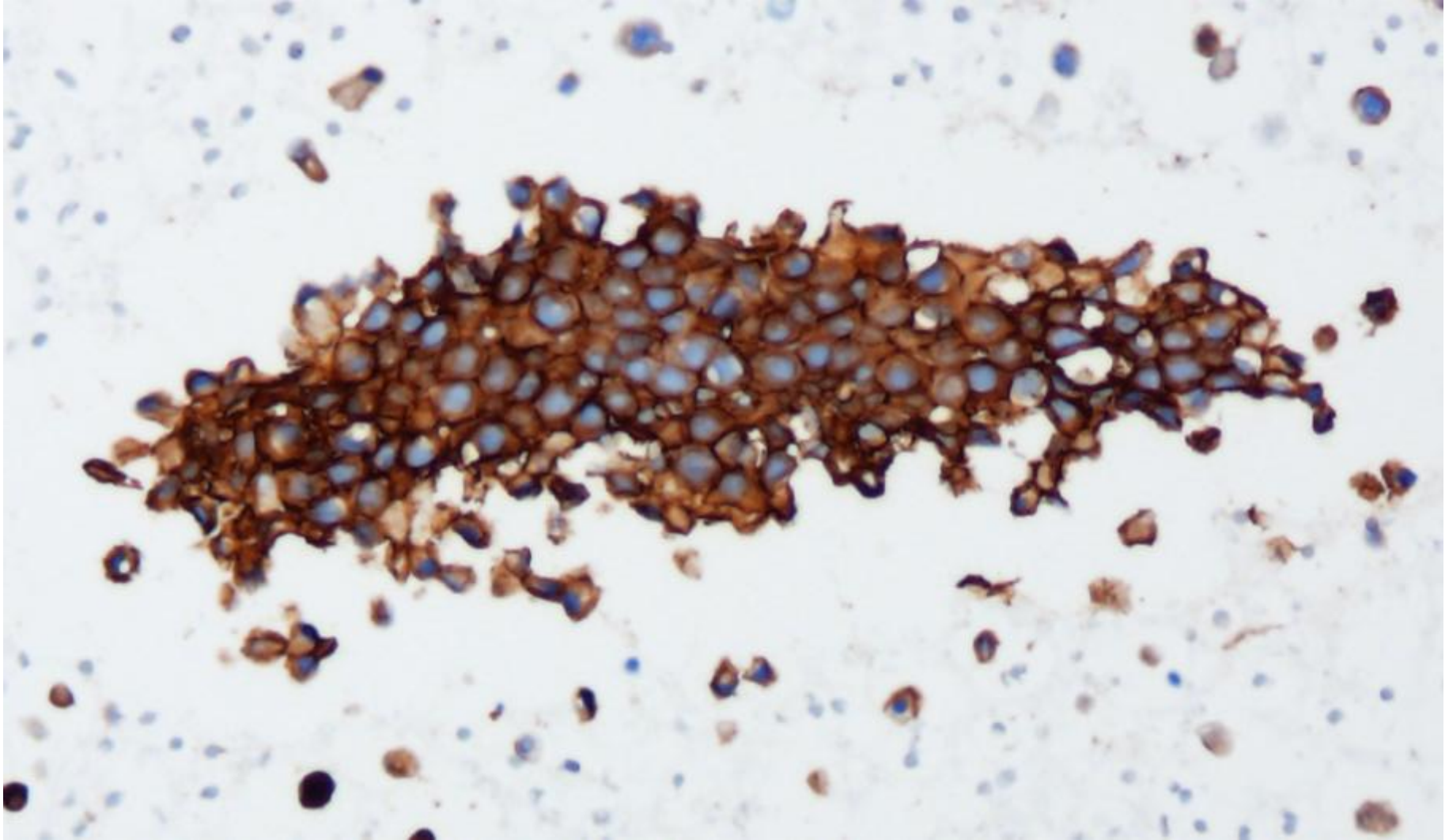


Pax-2 (-)

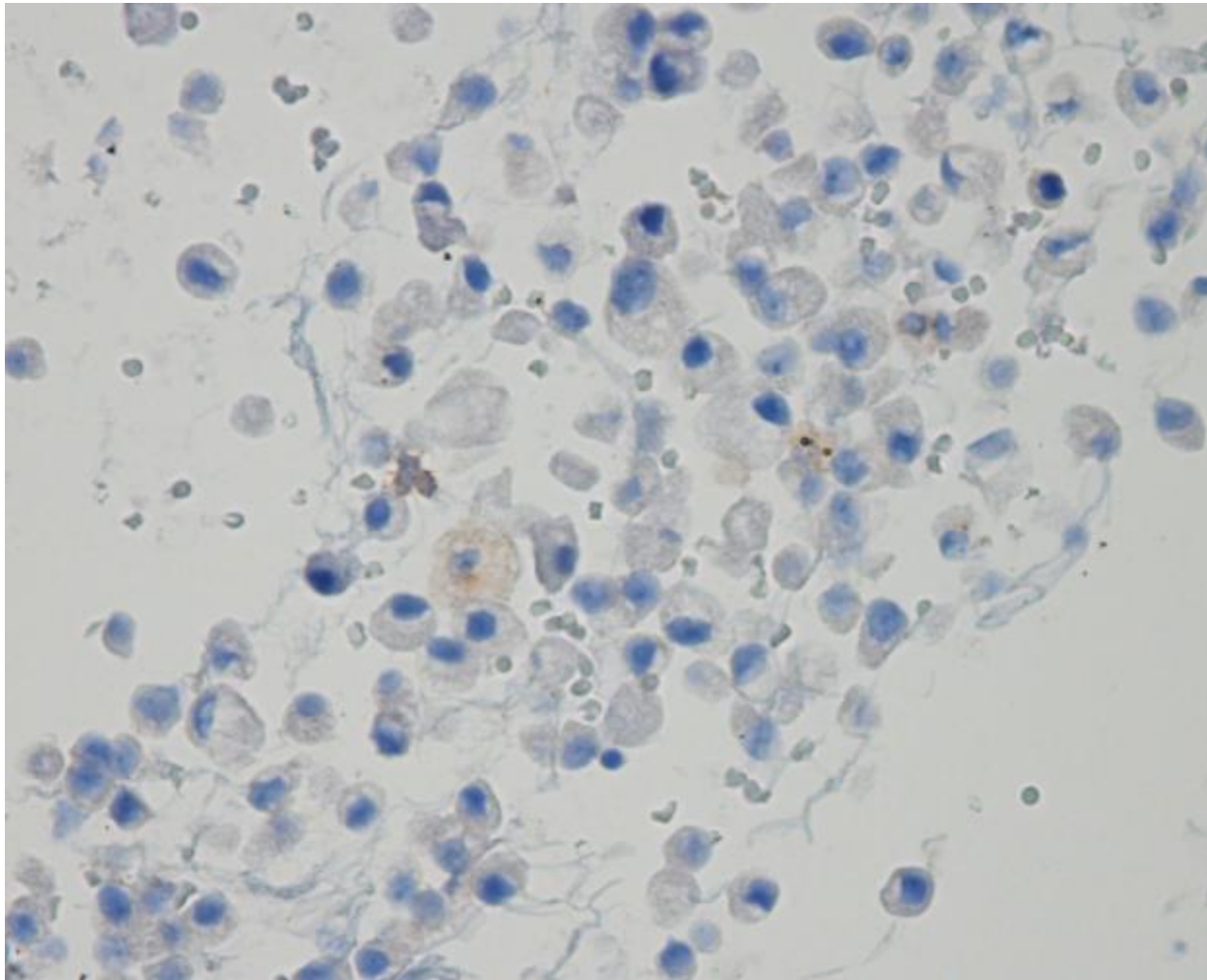
CK-7 (+)



CD-117 (+)



CA-IX (-)



membranous stain

Vimentin (+/-)

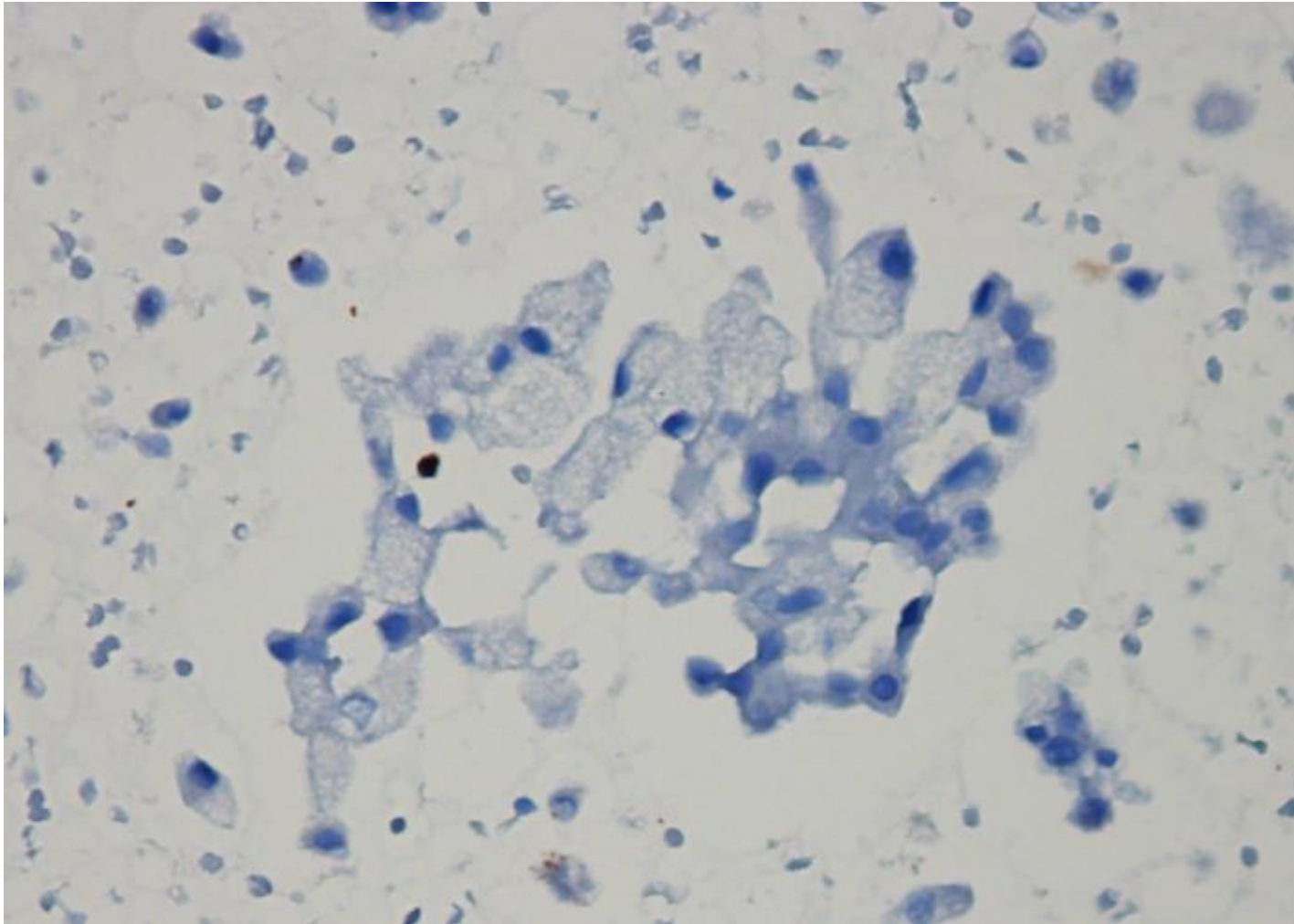


TABLE II. *Immunohistochemical Features of Renal Cell Carcinoma Variants and Oncocytoma.**

<i>Marker</i>	<i>CC-RCC</i>	<i>CR-RCC</i>	<i>P-RCC</i>	<i>ONC</i>
Vimentin	+	−	+	−
Pan-CK (AE1/AE3)	+	+	+	+
CK7 ^{7,†}	−	+	+	−
CD10 ^{7,10}	+	−/+	−/+	−/+
RCC-Ma ¹⁰	+	−	+	−
Pax-2 ^{5,7,8,†}	+	−	+	+
Aquaporin1 ⁷	+	−	+	−
γ-H2AX ³	+	N/A	+	N/A
CD117 [†]	−	+	−	+
AMACR [‡]	−	−	+	−
CA IX ⁸	+	−	+	−

PAX-8 (+)

Hale's Colloidal Iron

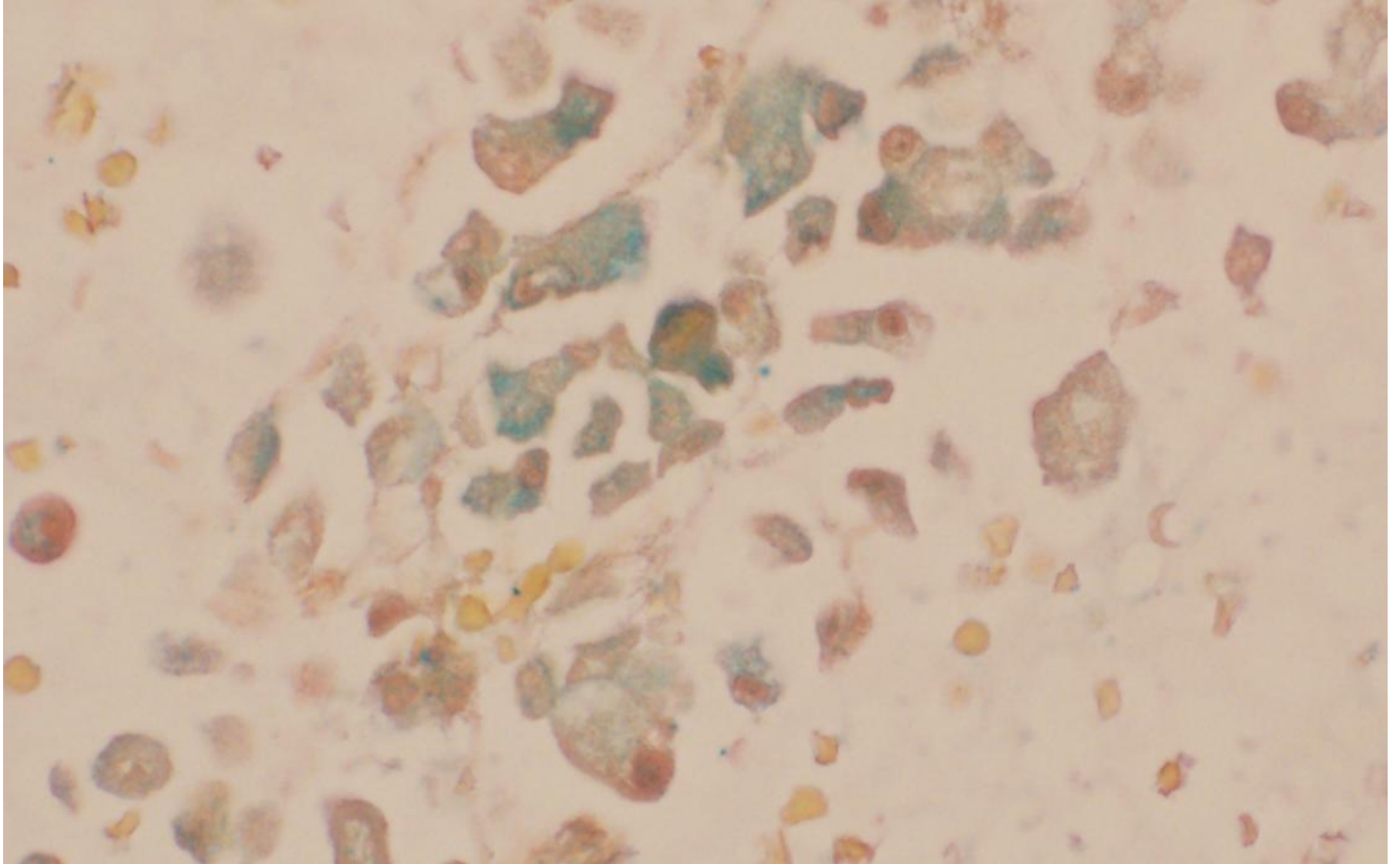


TABLE 3. *Pathologic prognostic features and prognostic information in the different types of renal cell carcinoma*

	Conventional (clear cell) RCC*	Papillary RCC	Chromo- phobe RCC	RCC unclassified	RCC all combined
Fuhrman nuclear grade (%)	n = 251	n = 73	n = 24	n = 15	n = 363
1	15 (6)	1 (1.4)	0 (0)	0 (0)	16 (4.4)
2	54 (21.6)	8 (10.9)	5 (20.8)	1 (6.7)	68 (18.7)
3	133 (53.2)	57 (78.1)	17 (70.8)	6 (48)	213 (58.7)
4	49 (19.6)	7 (9.6)	2 (9.6)	8 (53.3)	66 (18.2)
Sarcomatoid change (%)	14 (5.5)	4 (5.4)	1 (4.2)	6 (26)	25 (6.6)
1997 TNM stage (%)	n = 241	n = 71	n = 24	n = 18	n = 354
I	125 (51.9)	43 (60.6)	12 (50)	2 (11.1)	182 (51.4)
II	26 (10.8)	13 (18.3)	9 (37.5)	1 (5.6)	49 (13.9)
III	61 (25.3)	11 (15.5)	3 (12.5)	5 (27.8)	80 (22.6)
IV	29 (12)	4 (5.6)	0 (0)	10 (55.5)	43 (12.1)
Metastasis (%)	27.4	12	4.2	69.6	25.5
Outcome (DOD) (%)	24	14	4.2	65	21.7
Disease-specific survival					
5-year	76	86	100	24	77
7-year	74	82	90	12	73
10-year	70	82	90	12	70
Progression-free survival					
5-year	70	88	94	18	72
7-year	67	88	94	18	70
10-year	64	83	94	18	66

RCC, renal cell carcinoma; DOD, dead of disease.

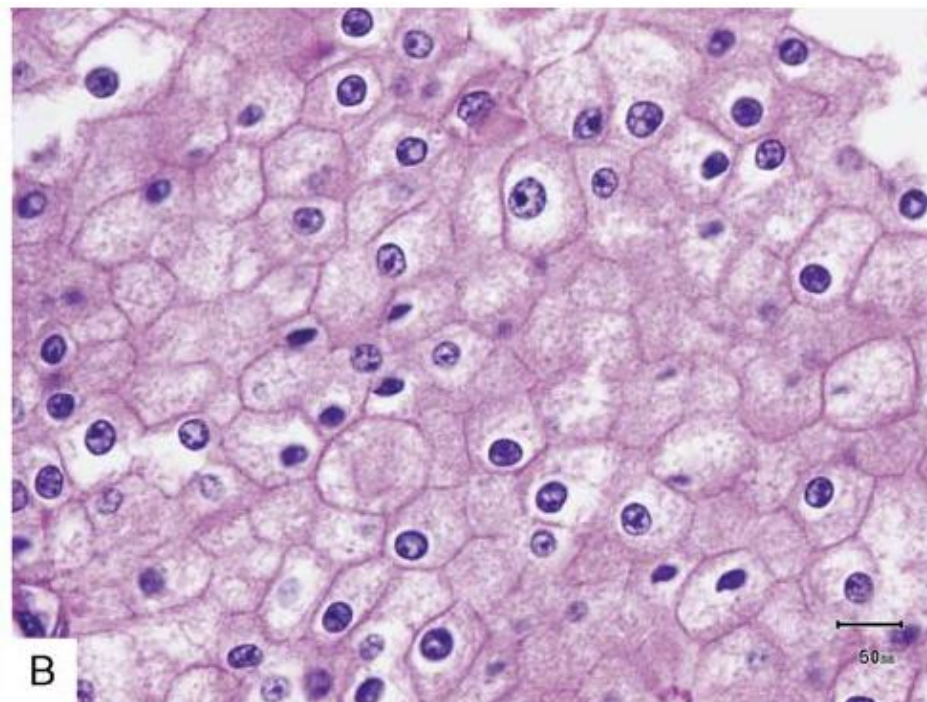
*****Not common for chromophobe RCCs to metastasize.*****

Prognostic Impact of Histologic Subtyping of Adult Renal Epithelial Neoplasms

An Experience of 405 Cases

The American Journal of Surgical Pathology 26(3): 281-291, 2002

- Tumor size, small-vessel invasion, sarcomatoid differentiation, and microscopic necrosis are the only features that are significantly associated with adverse outcome.



Chromophobe Renal Cell Carcinoma: A Clinicopathologic Study of 203 Tumors in 200 Patients With Primary Resection at a Single Institution

Christopher G. Przybycin, MD, Angel M. Cronin, MS,† Farbod Darvishian, MD,**