



Neoplasie



VERSAMENTI CON CELLULE MALIGNE

- **Neoplasie metastatiche**

- Adenocarcinomi
- Carcinomi a piccole cellule
- Carcinomi squamocellulari
- Linfomi
- Melanomi
- Sarcomi

- **Neoplasie primitive**

- Mesoteliomi



VERSAMENTI CON CELLULE MALIGNE

PLEURA

- Polmone
- Mammella
- Ovaia
- Tratto G.I.
(esofago,
stomaco, colon)
- Linfomi

PERITONEO

- Tratto G.I.
(stomaco,
pancreas, colon)
- Ovaia
- Mammella
- Linfomi



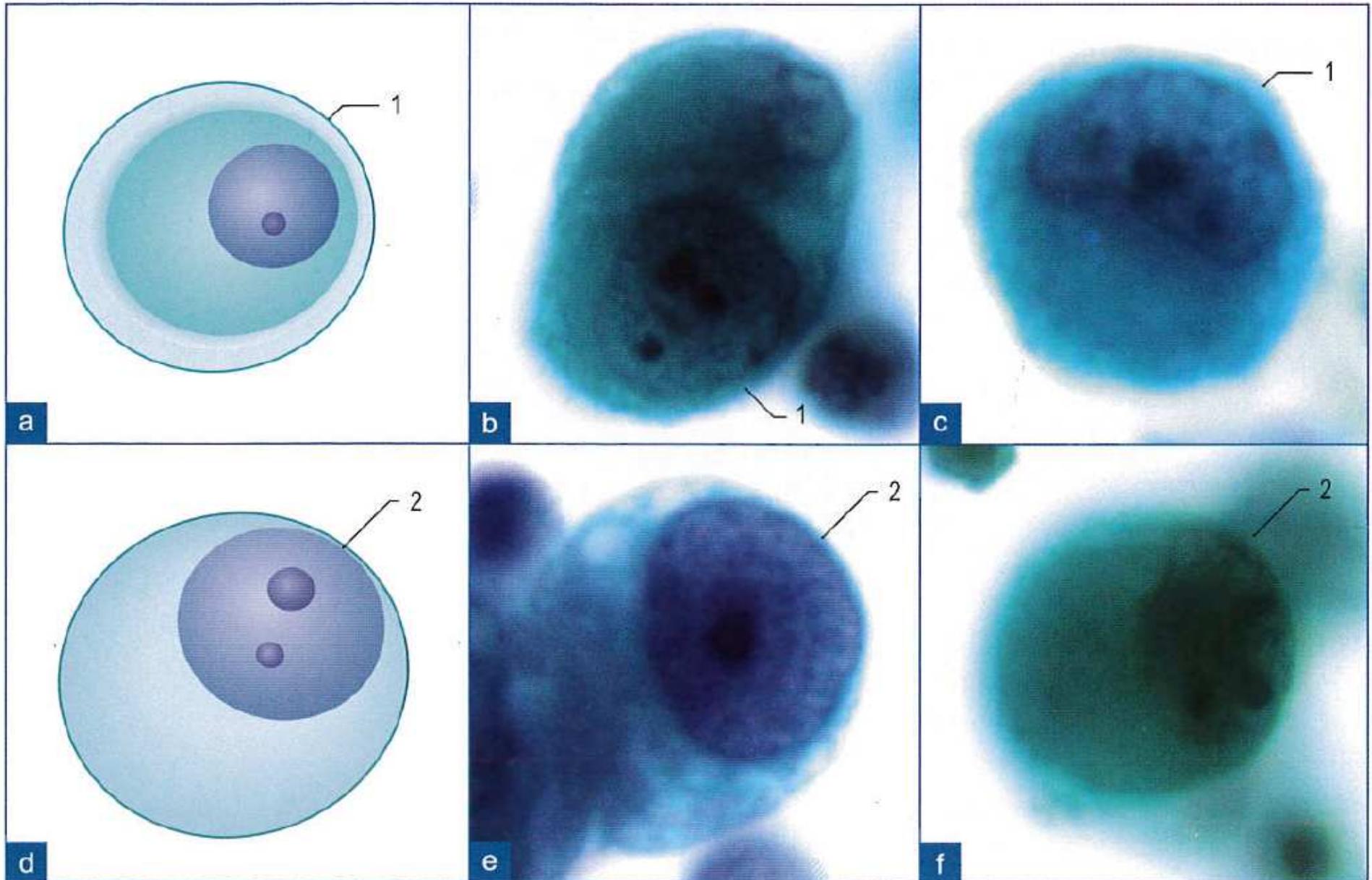
VERSAMENTI CON CELLULE MALIGNE

- L'infiltrazione di una sierosa da parte di cellule maligne causa differenti reazioni:
 - frequentemente **versamenti emorragici**
 - versamenti infiammatori non purulenti o a prevalenza linfocitaria
 - versamenti infiammatori eosinofili (rari).



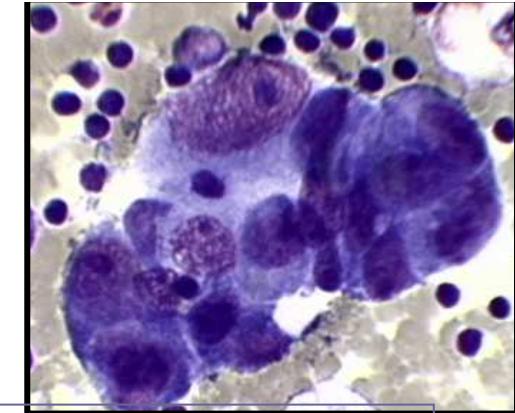
VERSAMENTI CON CELLULE MALIGNE

- Deve essere presente una **popolazione cellulare chiaramente estranea alle sierose** che mostra caratteristiche di malignità.





CARCINOMI: QUADRO CITOLOGICO

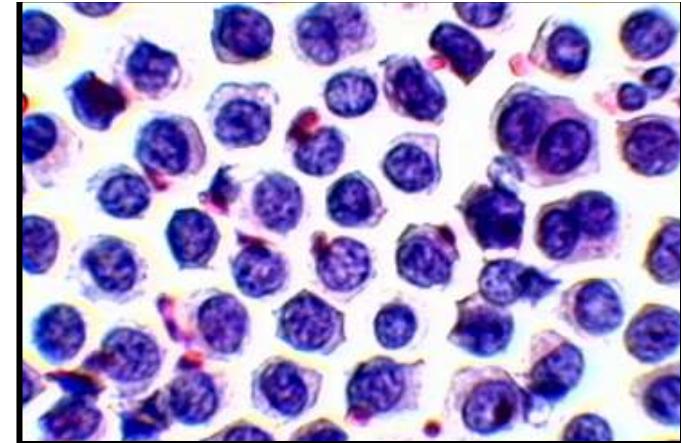


- Aggregati di cellule pleomorfe, con caratteri nucleari di malignità, e talora vacuoli citoplasmatici contenenti muco (polmone, ovaio, tratto gastroenterico).

- Cell balls o proliferation spheres: enormi aggregati rotondeggianti di cellule maligne (mammella e ovaio, più raramente polmone e tratto gastroenterico).



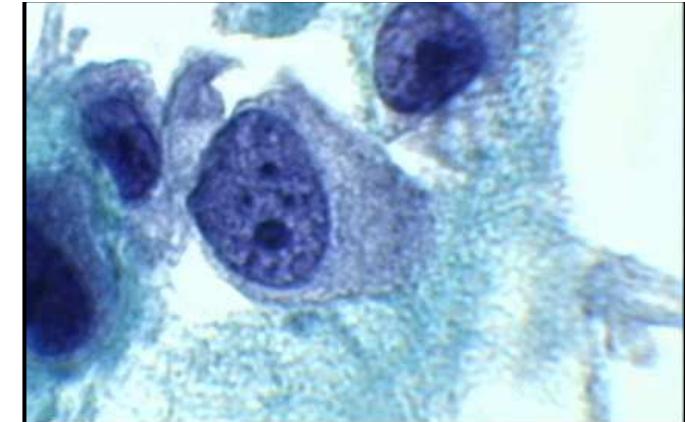
CARCINOMI: QUADRO CITOLOGICO



- Cellule isolate o in piccoli aggregati, con caratteri di malignità, di natura epiteliale (polmone, pancreas).
- Una popolazione predominante e monomorfa di cellule con caratteri di malignità, con lumi intracitoplasmatici (mammella).
- Cellule isolate, con caratteri di malignità, contenenti muco nel citoplasma: cellule ad anello con castone (stomaco, grosso intestino).



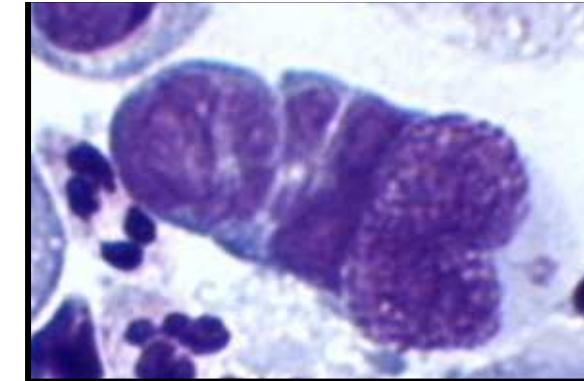
CARCINOMI: QUADRO CITOLOGICO



- Sottofondo spesso necrotico.
- Cellule di grandi dimensioni, isolate o in aggregati.
- Nuclei con ben evidenti caratteri di malignità, talora plurimi, talora picnotici.
- Citoplasmi talora vacuolati, raramente con aspetti di cheratinizzazione, più facilmente riconoscibile nel materiale incluso.



CARCINOMI: QUADRO CITOLOGICO



- Cellule piccole
- Isolate o in piccoli gruppi
- Nuclei con cromatina fine, “sale e pepe”.
- Modellamento dei nuclei nei gruppi.
- Nucleoli talora visibili.
- Citoplasmi lievemente basofili.



Alcuni esempi pratici

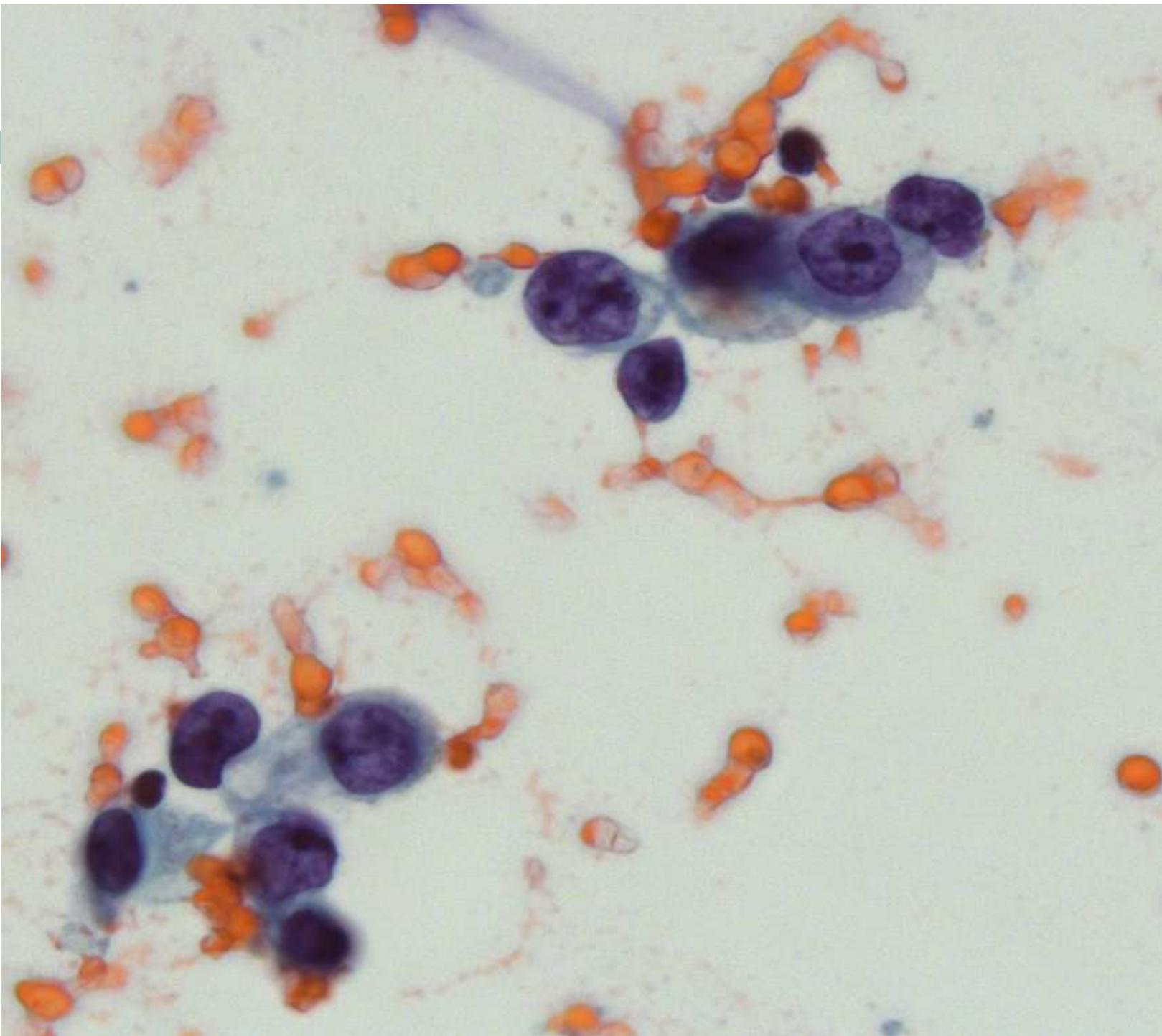
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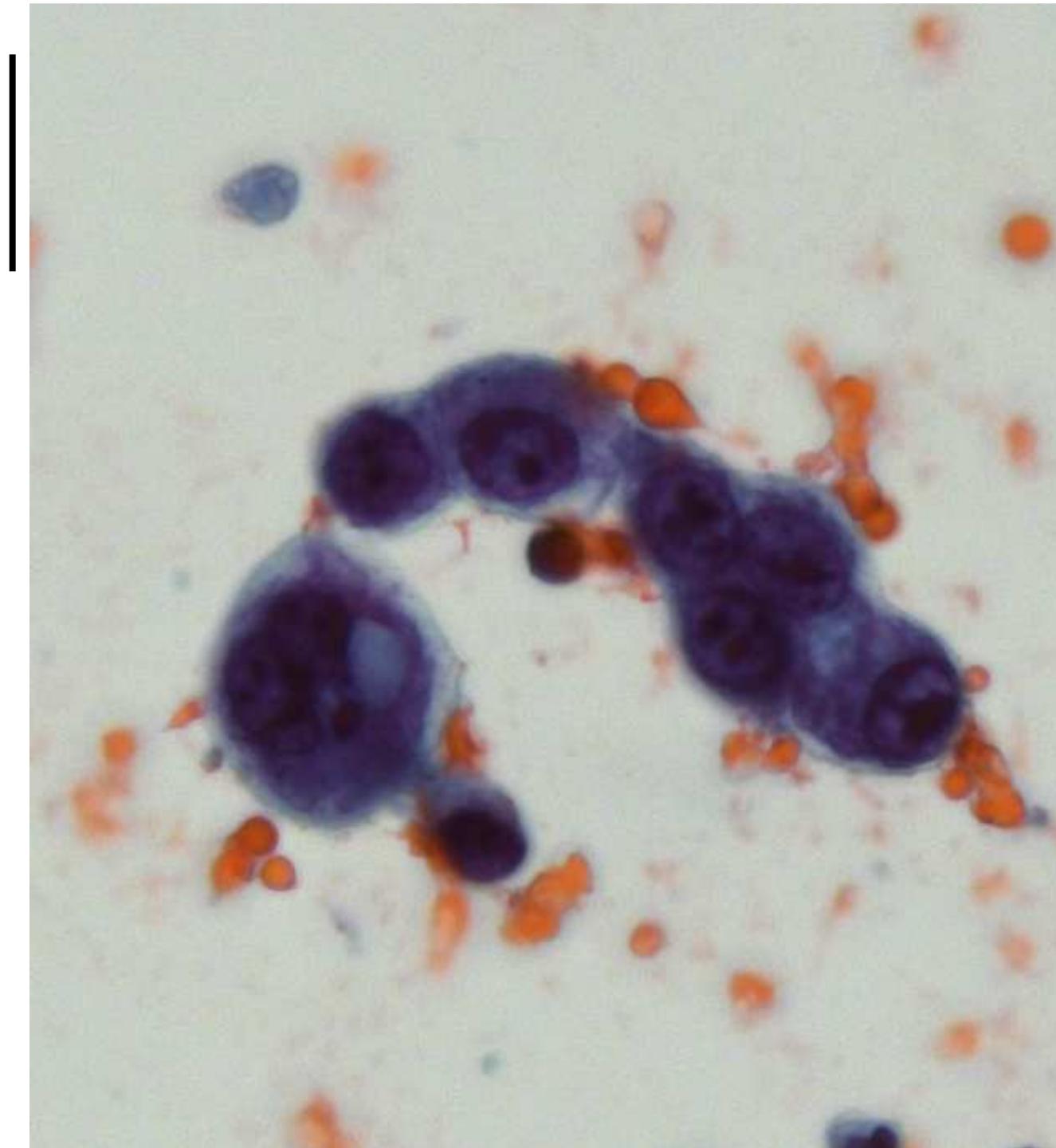


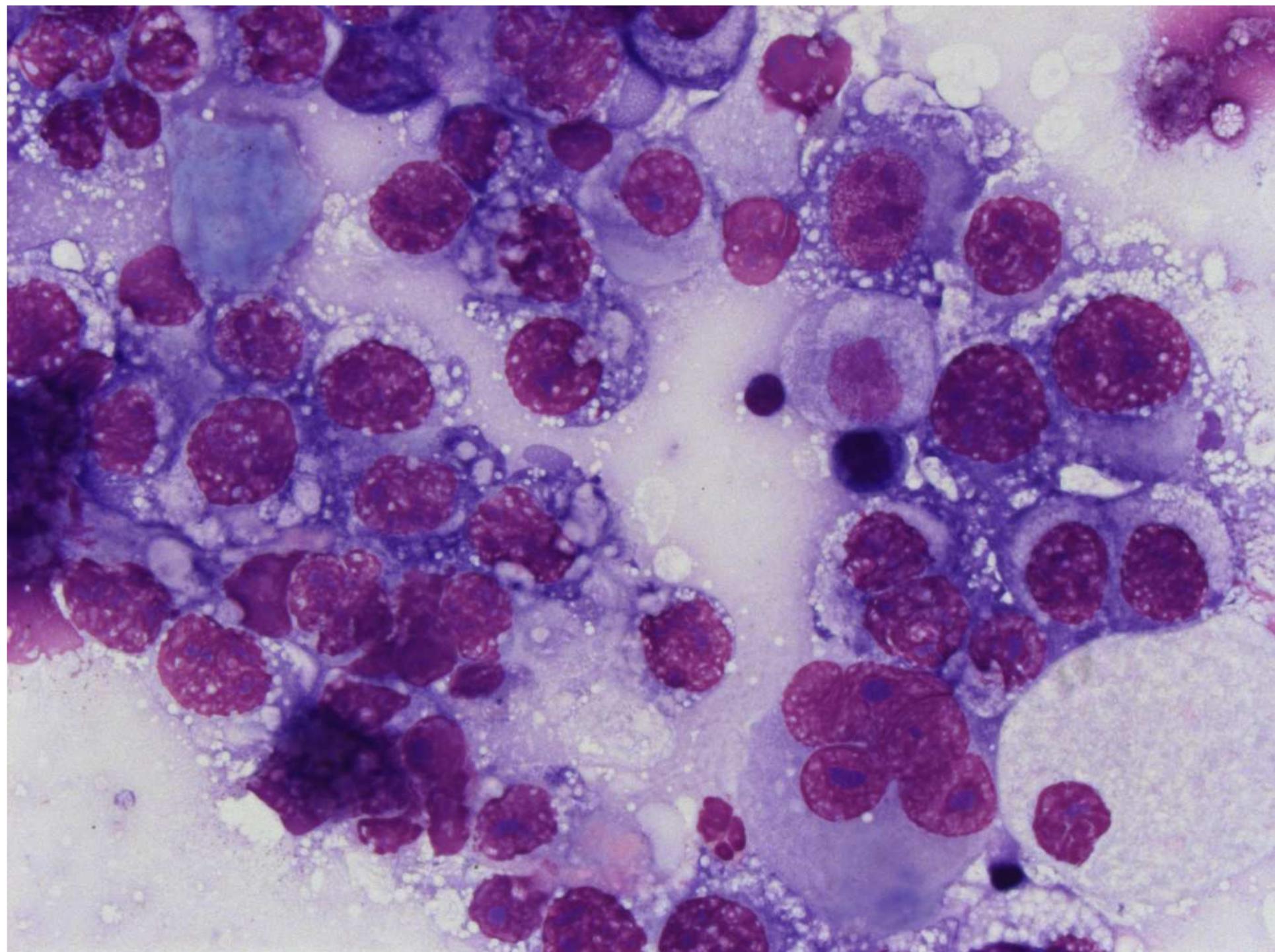
**Donna, 74 anni
ascite**

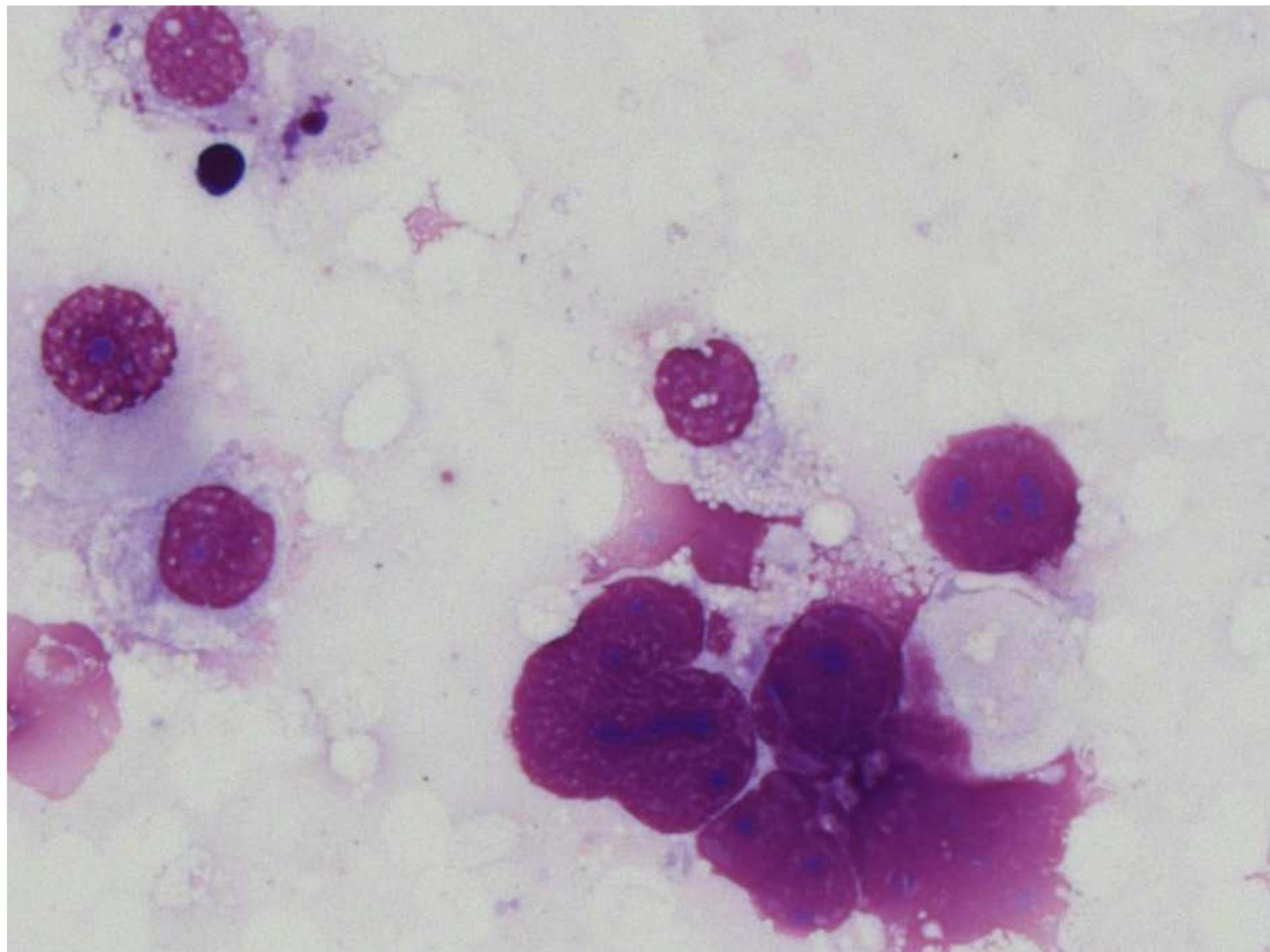
**Sospetto versamento neoplastico
in progresso K gastrico**

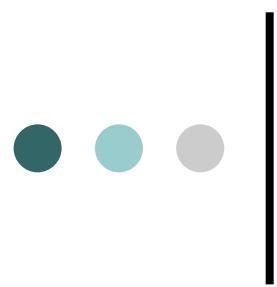
25 ml, giallognolo











Diagnosi:

**presenza di cellule maligne;
aspetto compatibile con carcinoma
gastrico**

2.

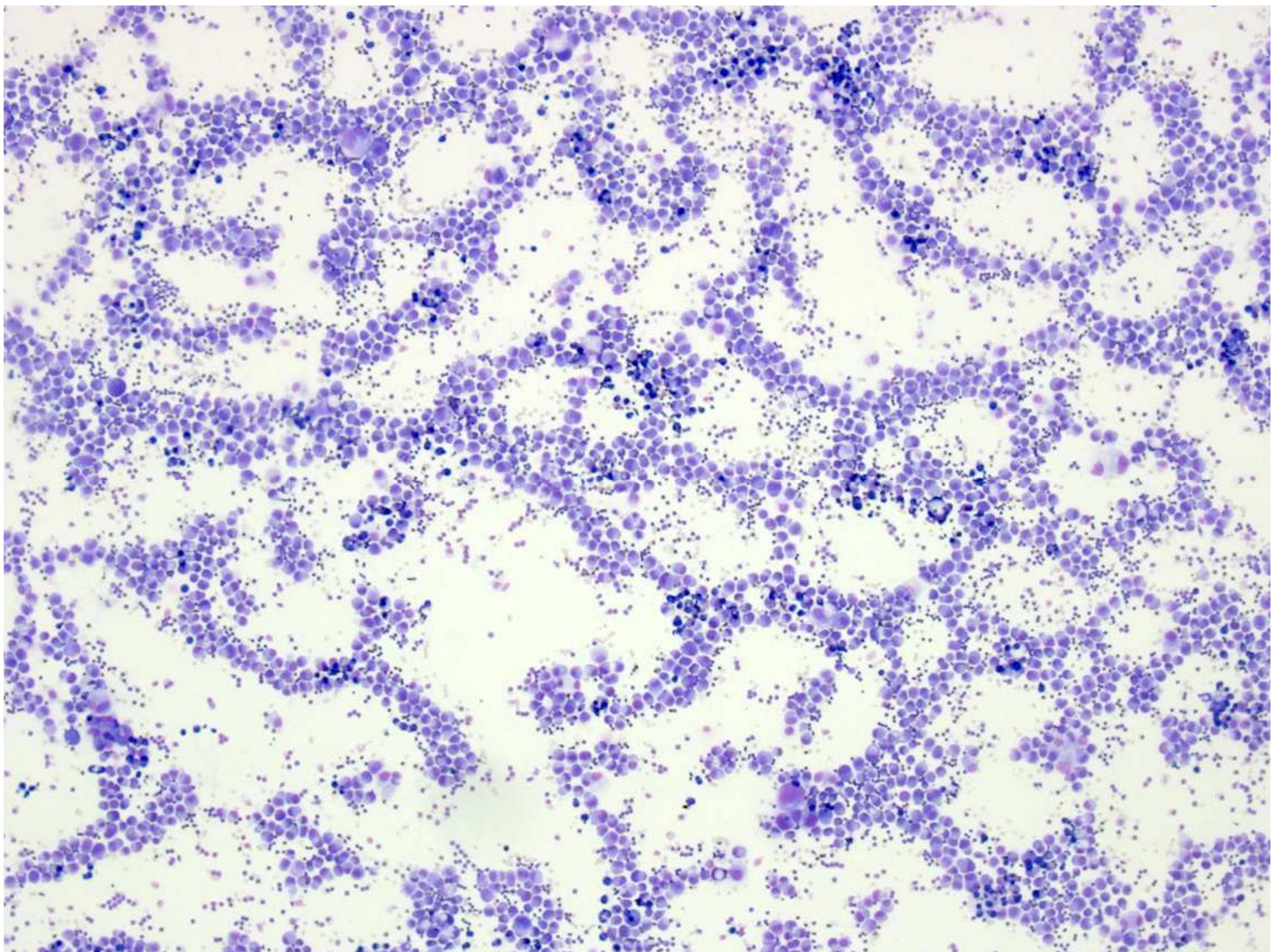


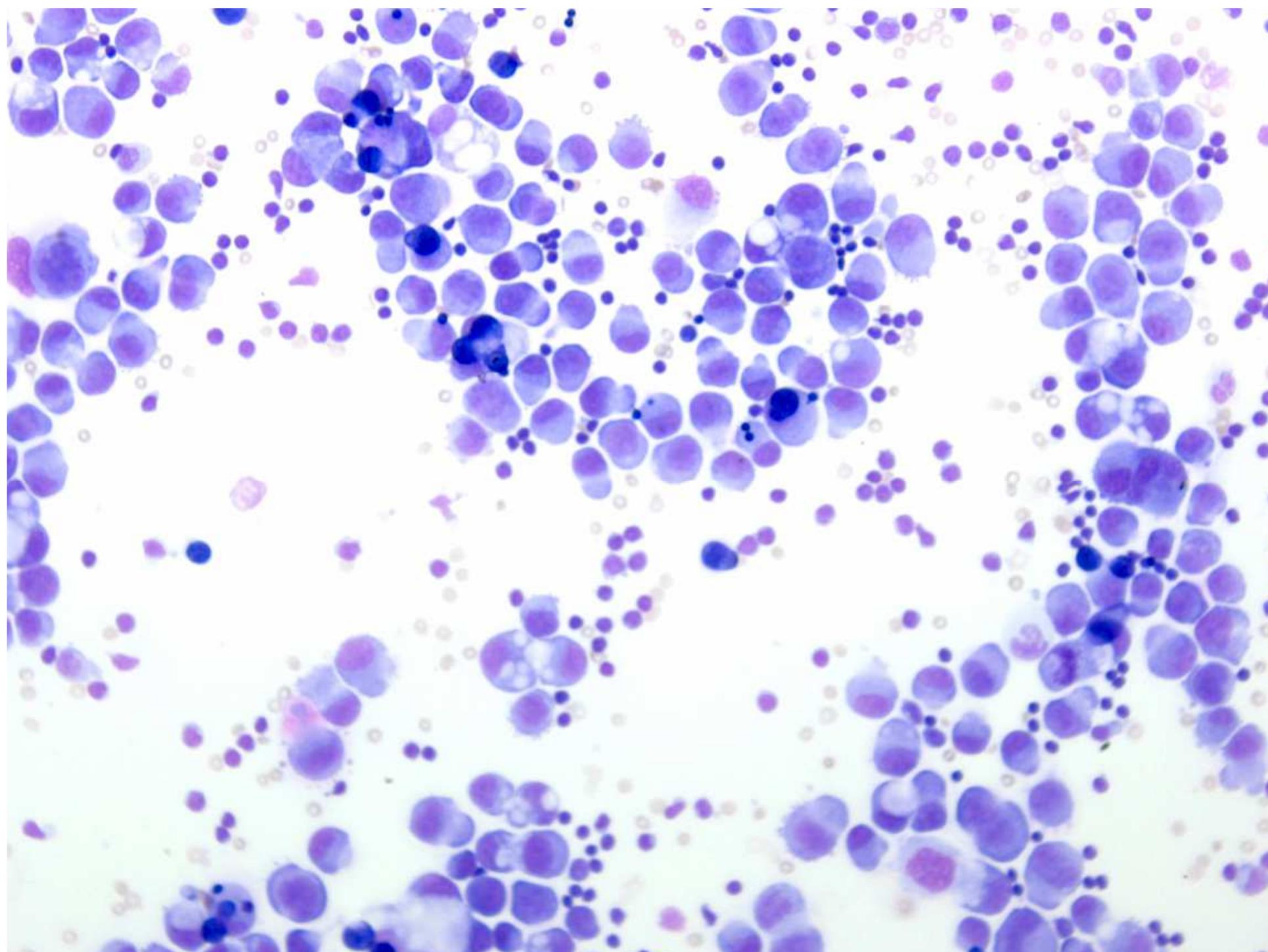
Donna, 67 anni ascite e v. pleurico

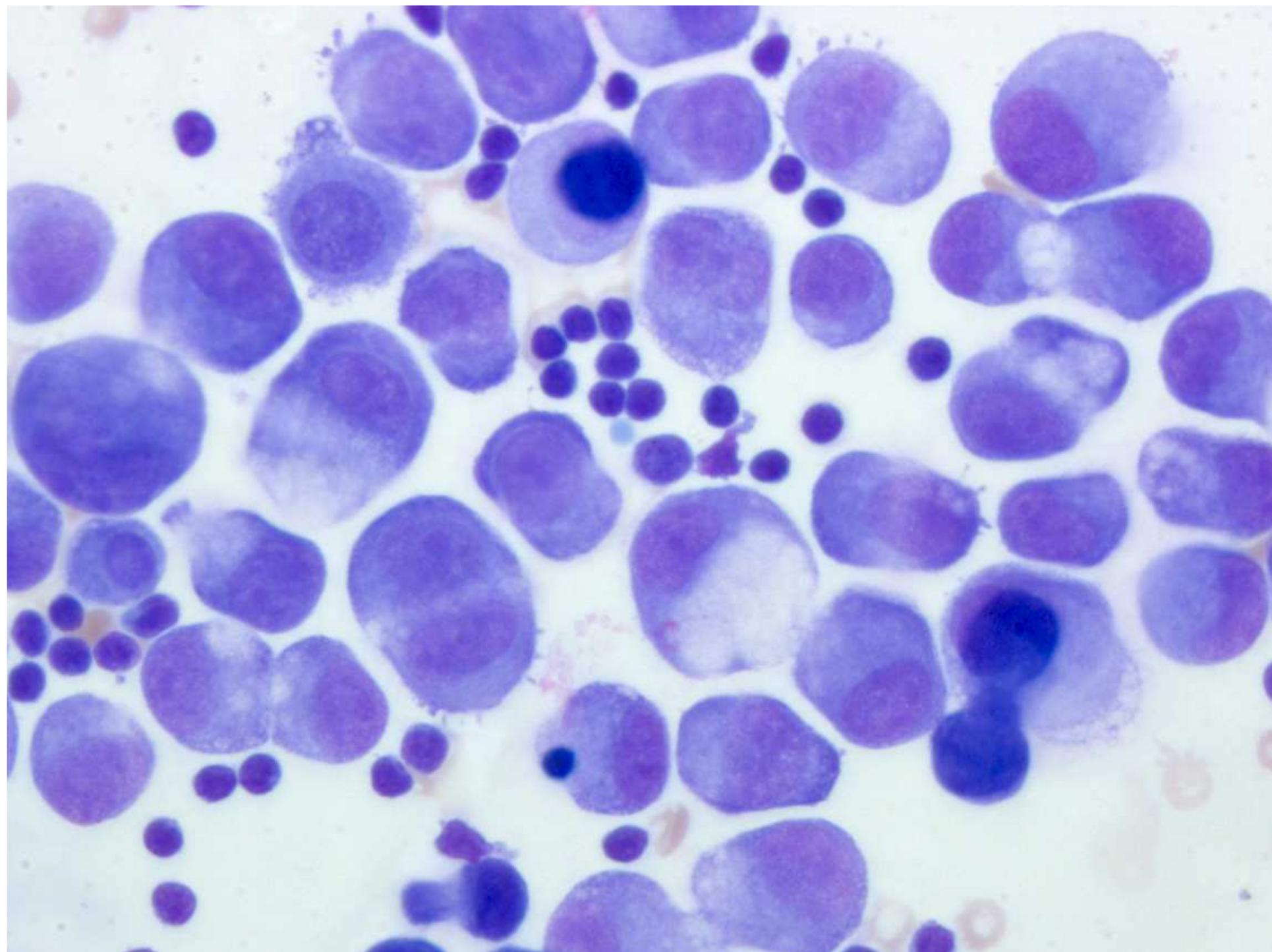
Dolori addominali con TAC
sospetta per carcinosi peritoneale
Ca 125: ↑↑↑

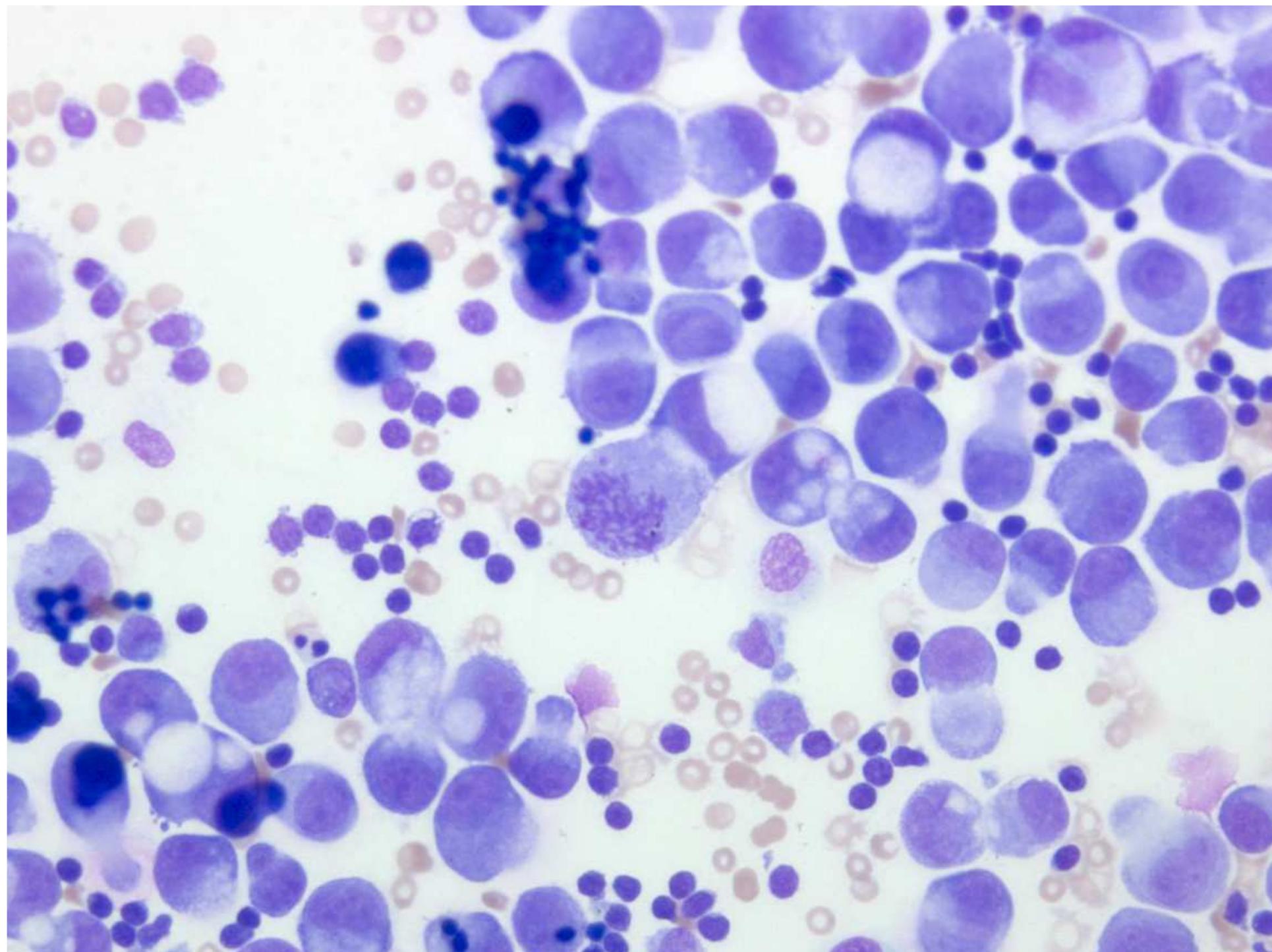
2100 ml, arancione torbido

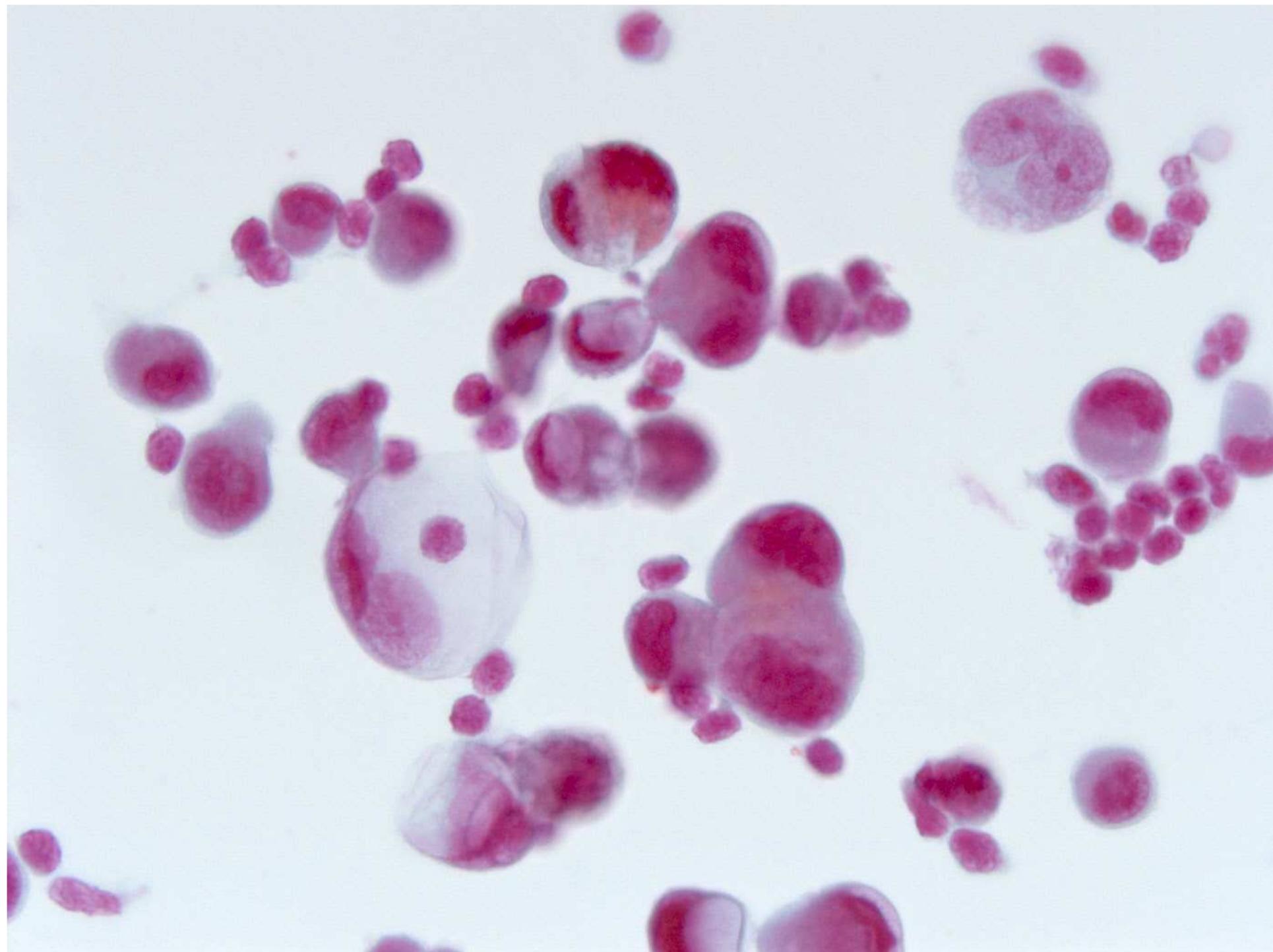
aperio, foto

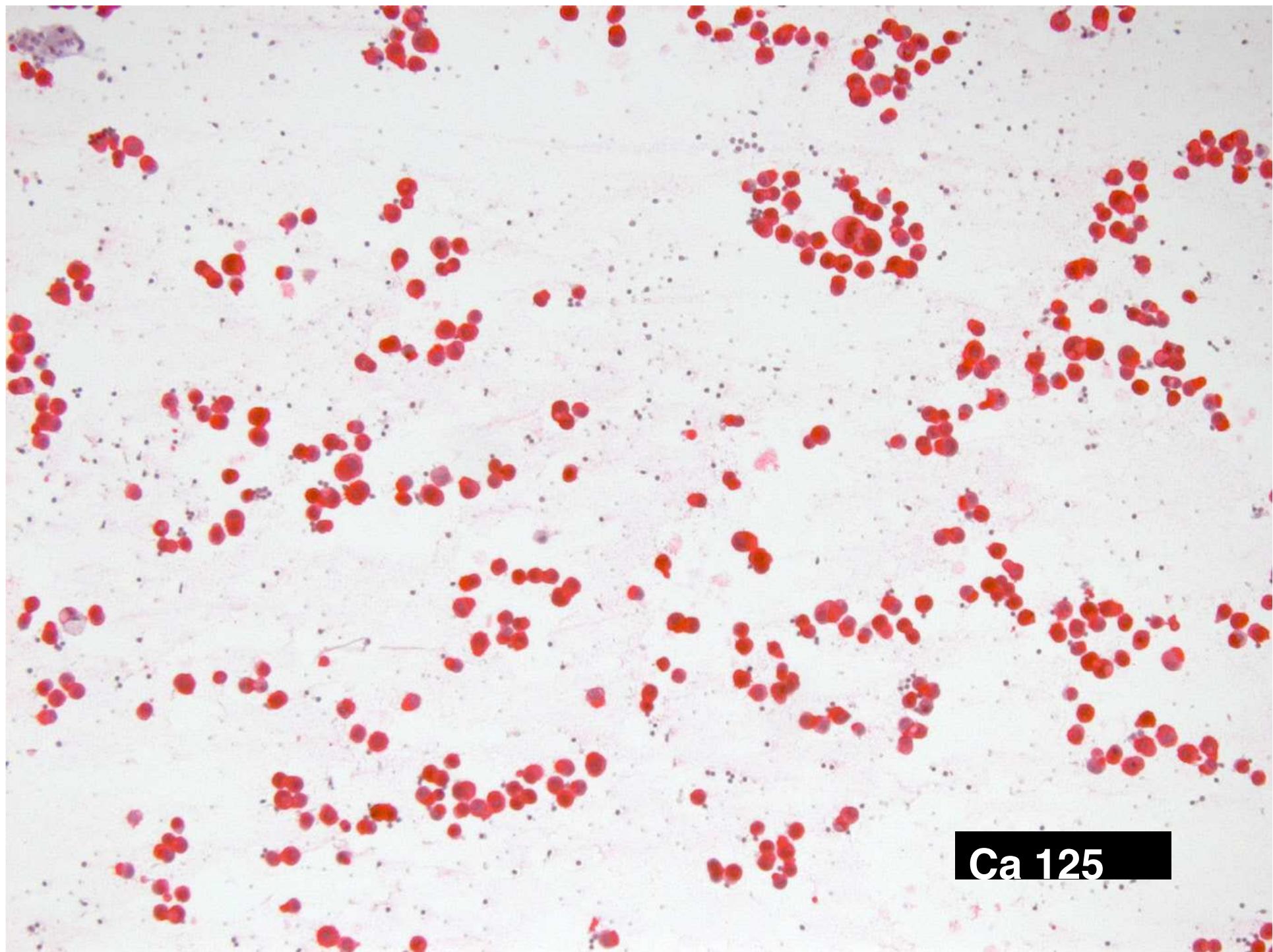




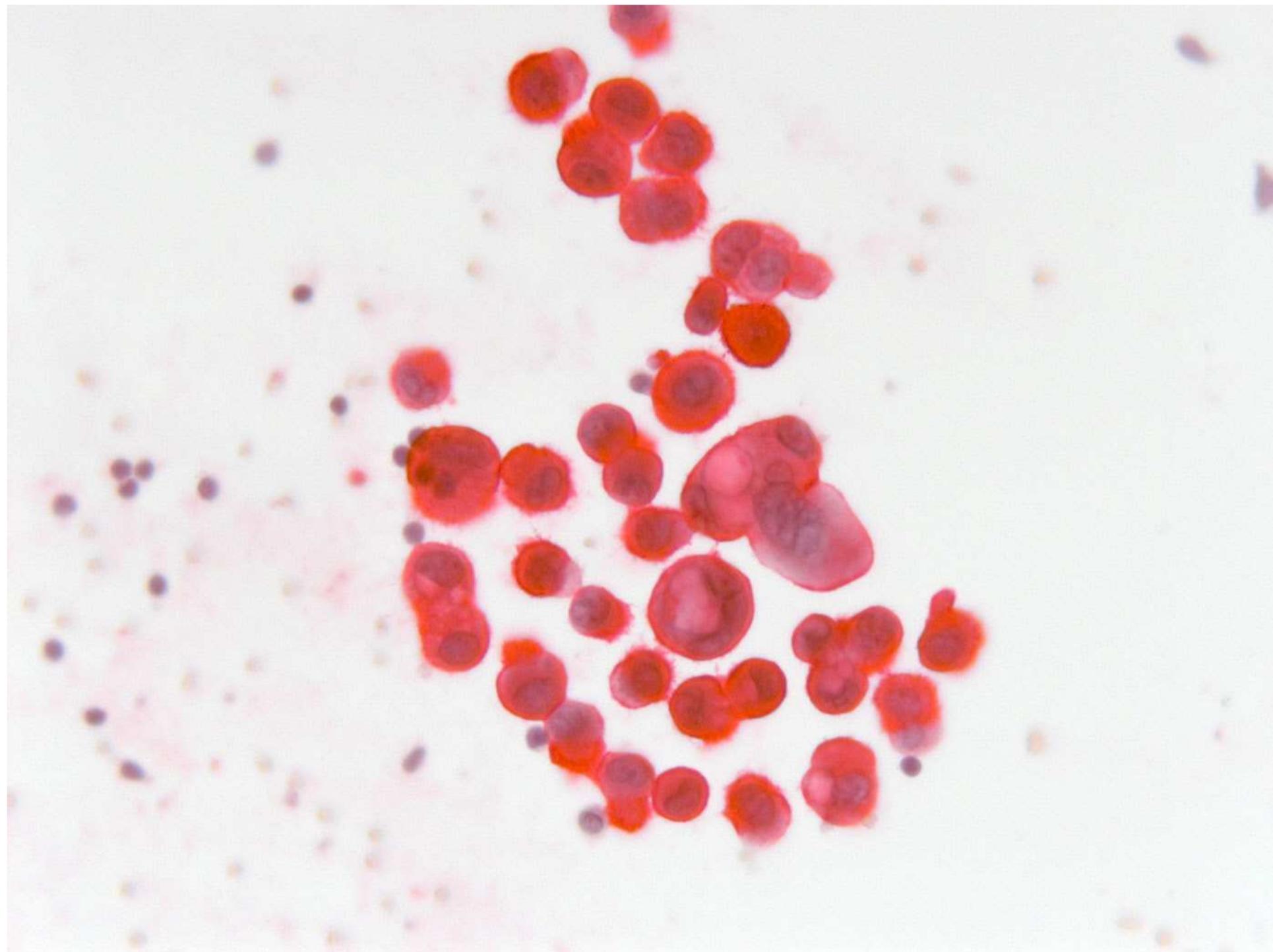


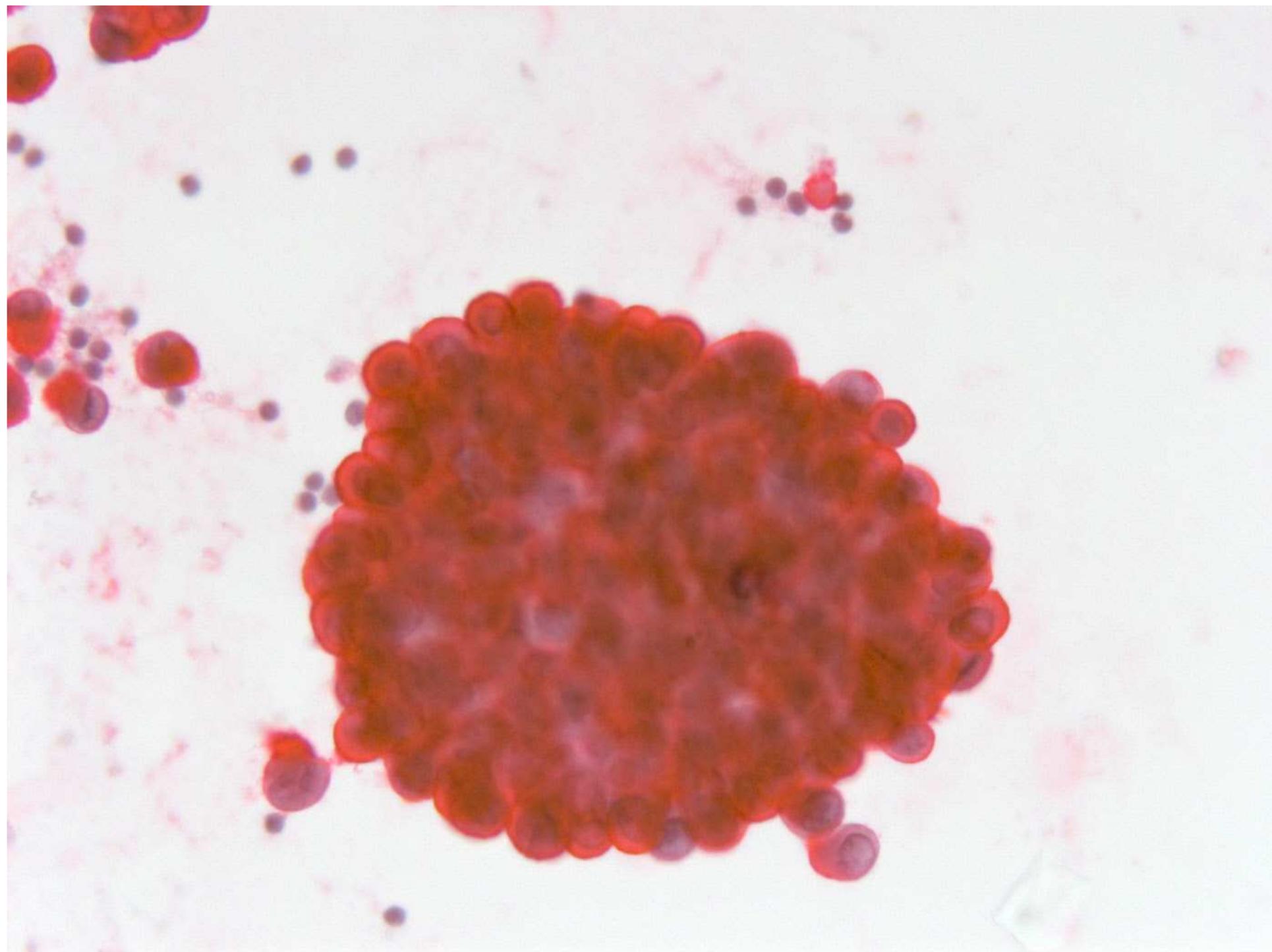


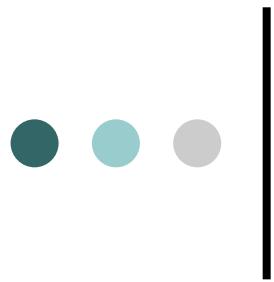




Ca 125







Diagnosi:

**presenza di cellule maligne;
aspetto compatibile con carcinoma
ovarico**

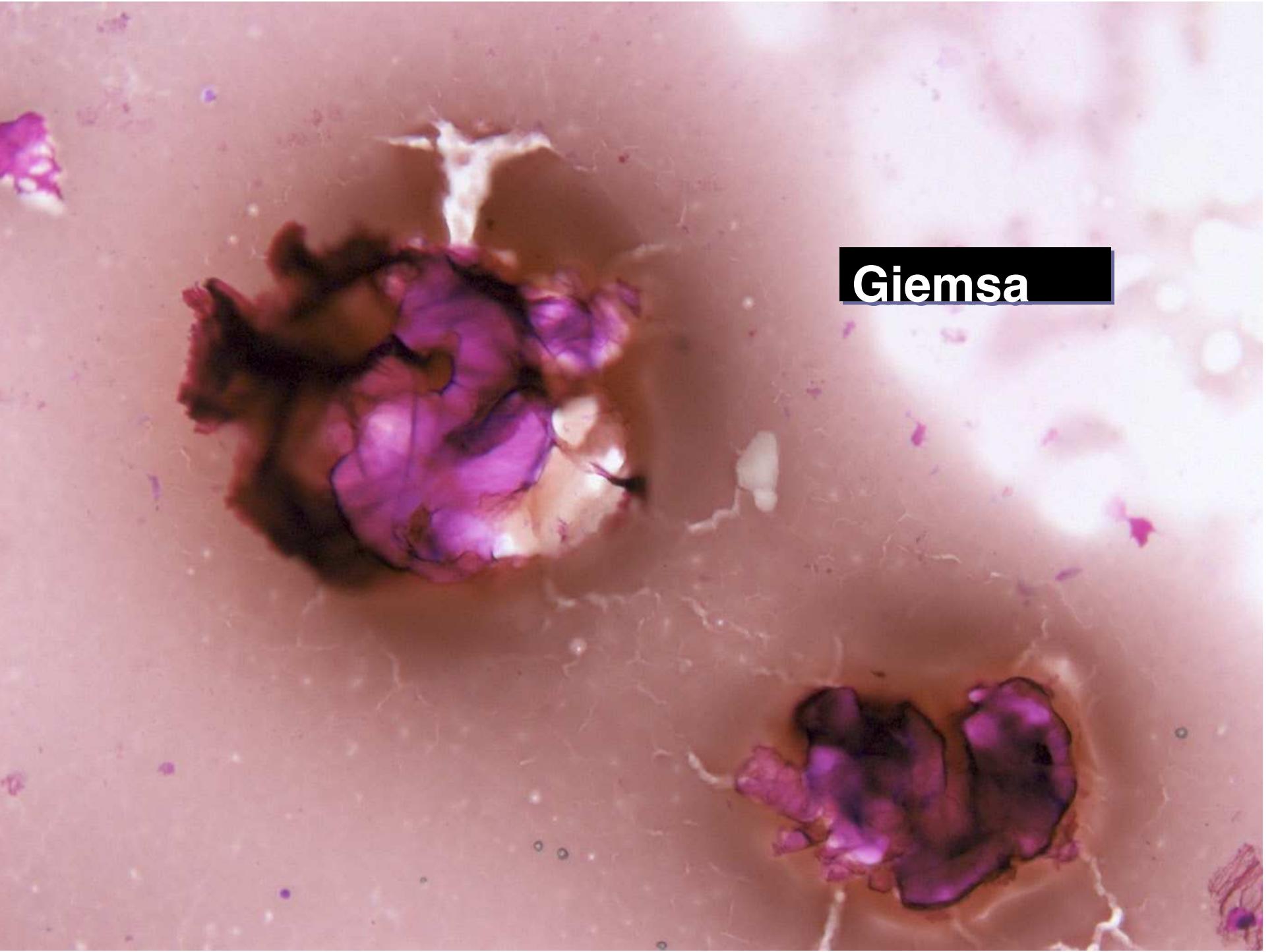
3.



**Donna, 75 anni
ascite**

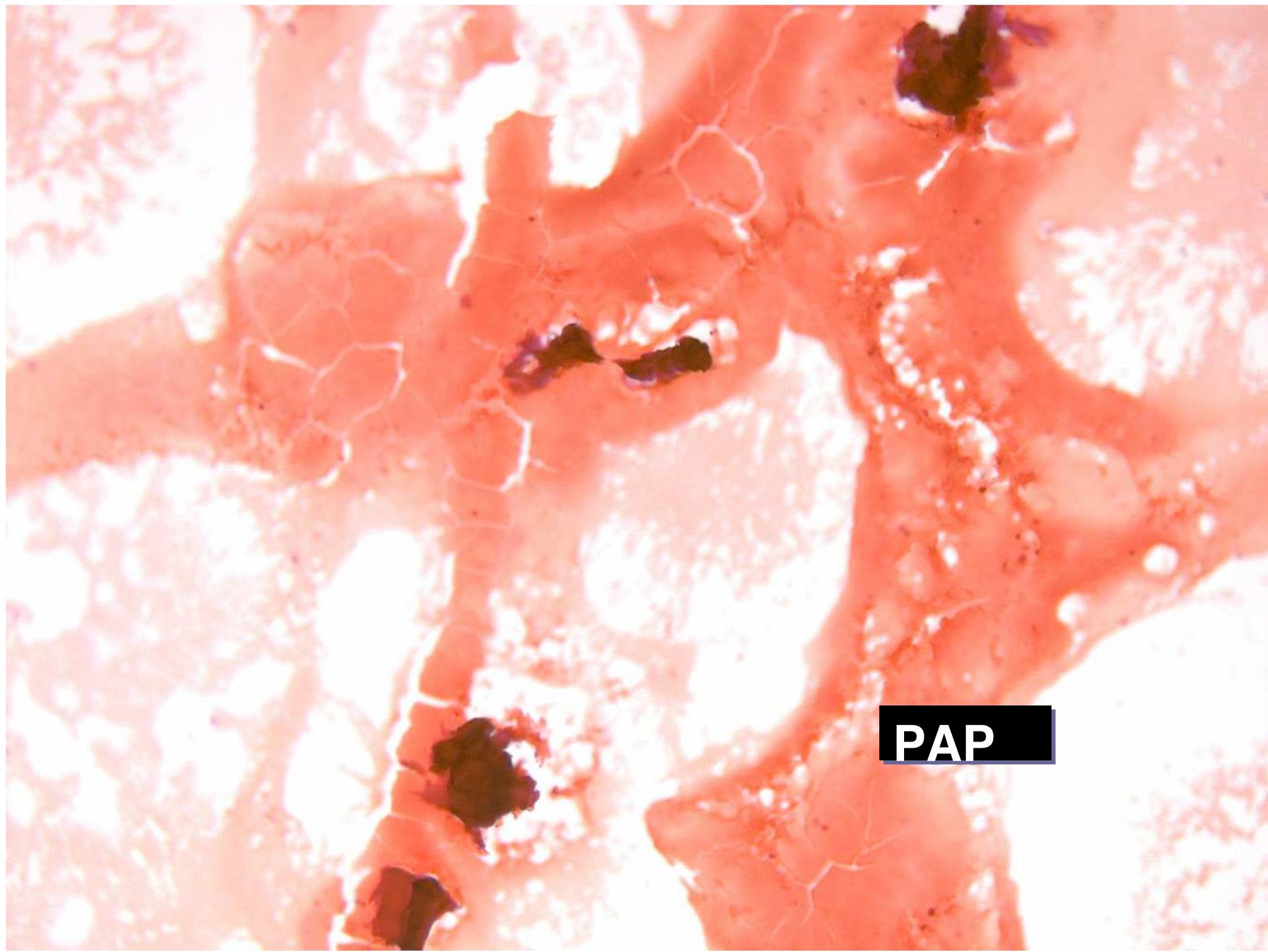
Carcinoma tubarico

300 ml, sanguinolento

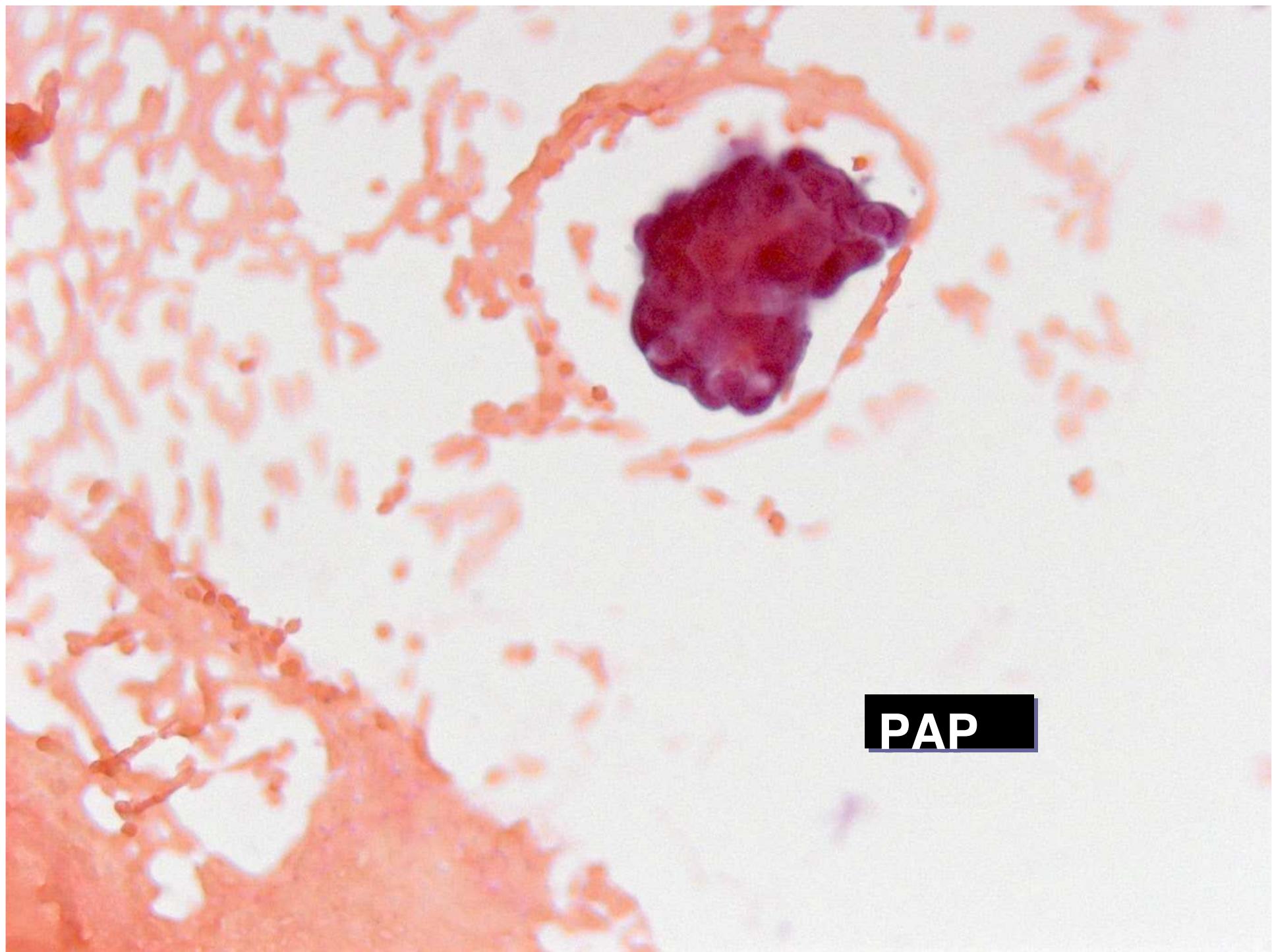


A microscopic image showing several clusters of cells stained with Giemsa. The nuclei of the cells are stained a deep purple color, while the cytoplasm and extracellular matrix appear pinkish-red. The image is taken at a low magnification, showing a field of view with multiple cell clusters.

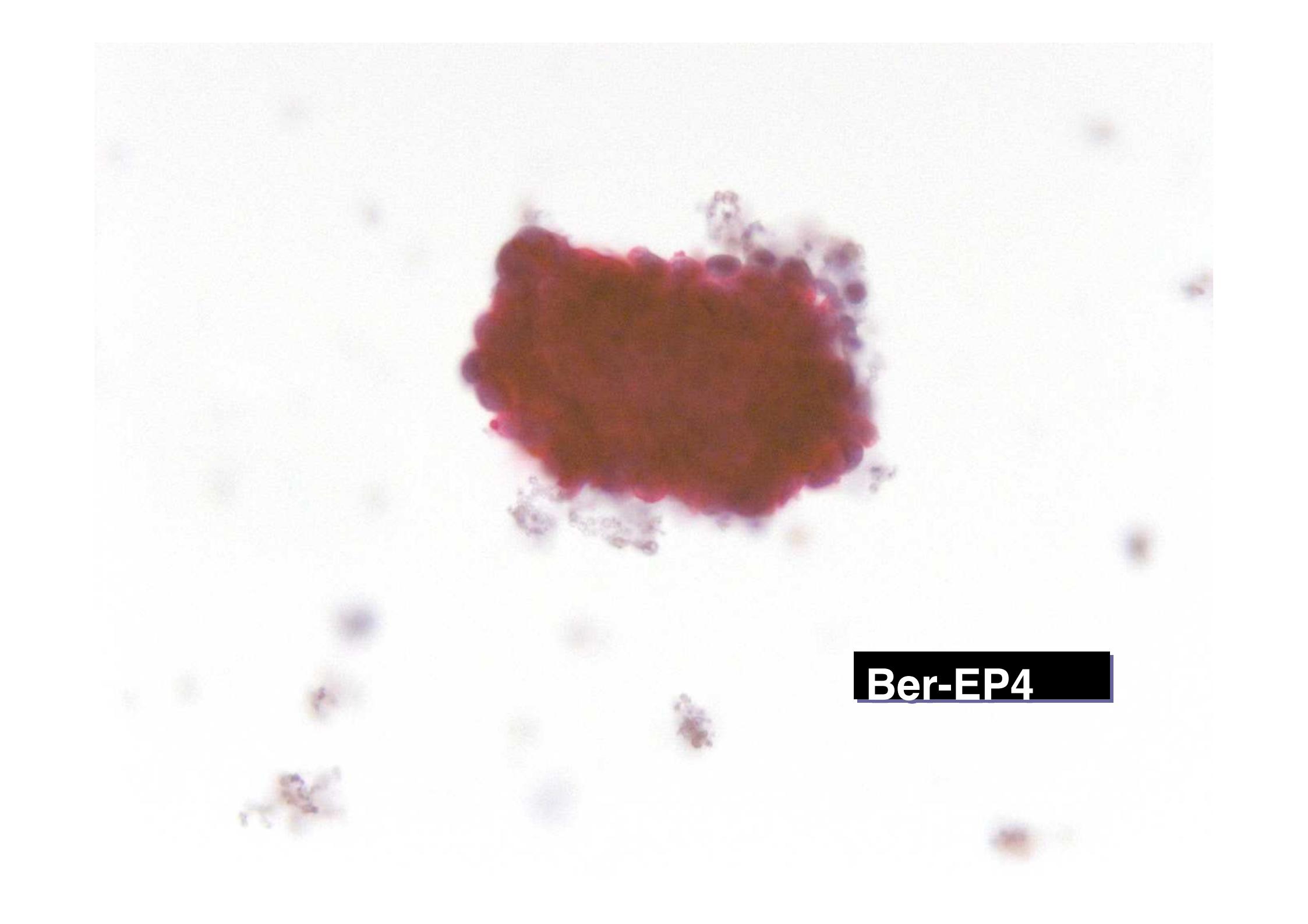
Giemsa



PAP



PAP

A micrograph showing a single cell nucleus. The nucleus is roughly circular with a dense, dark purple center and a lighter purple outer region. It is surrounded by a thin, irregular white border. The background is a light cream color with some very faint, blurry purple spots.

Ber-EP4



Diagnosi:
presenza di cellule maligne;
aspetto compatibile con carcinoma
tubarico/ovarico

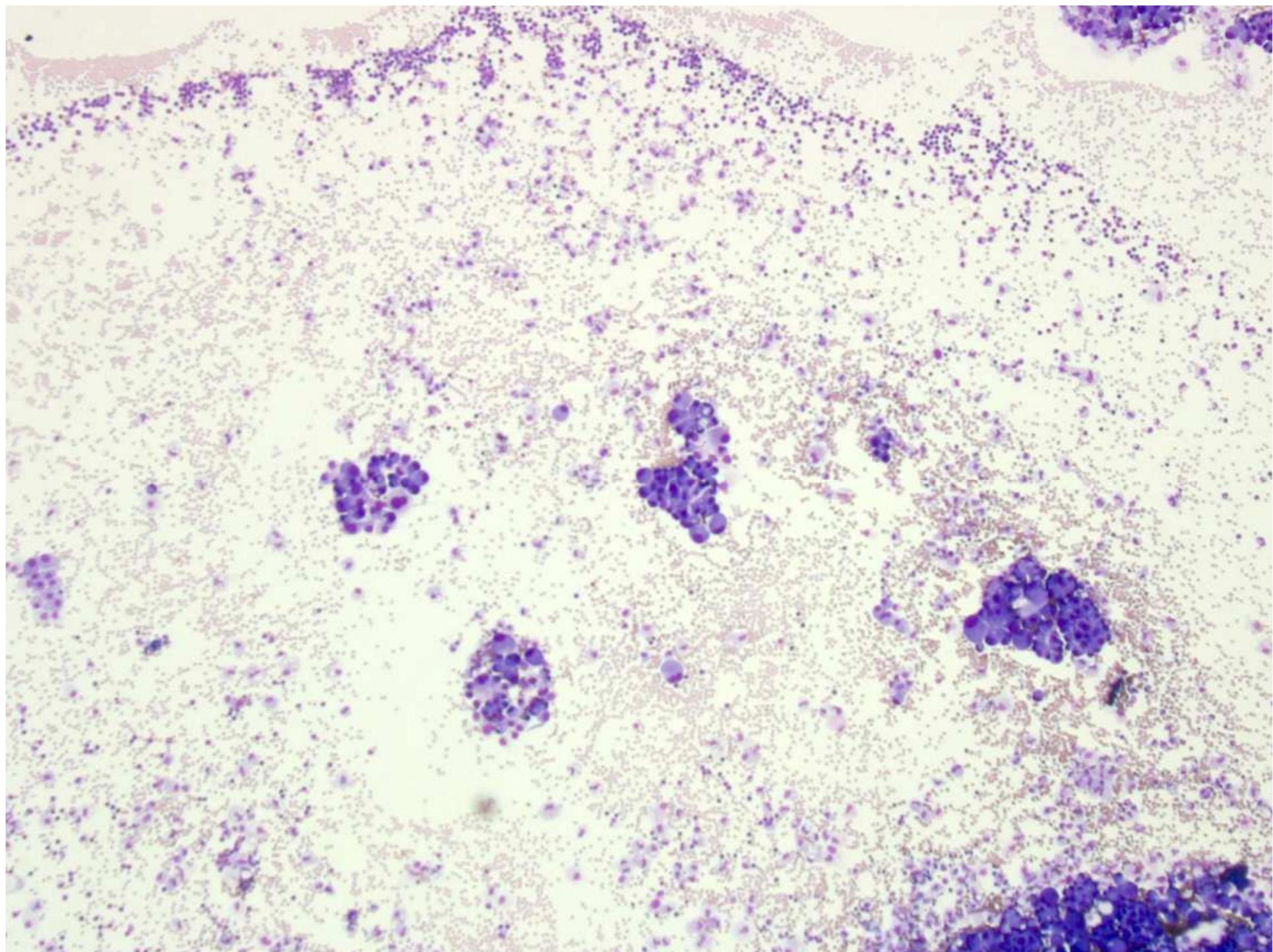
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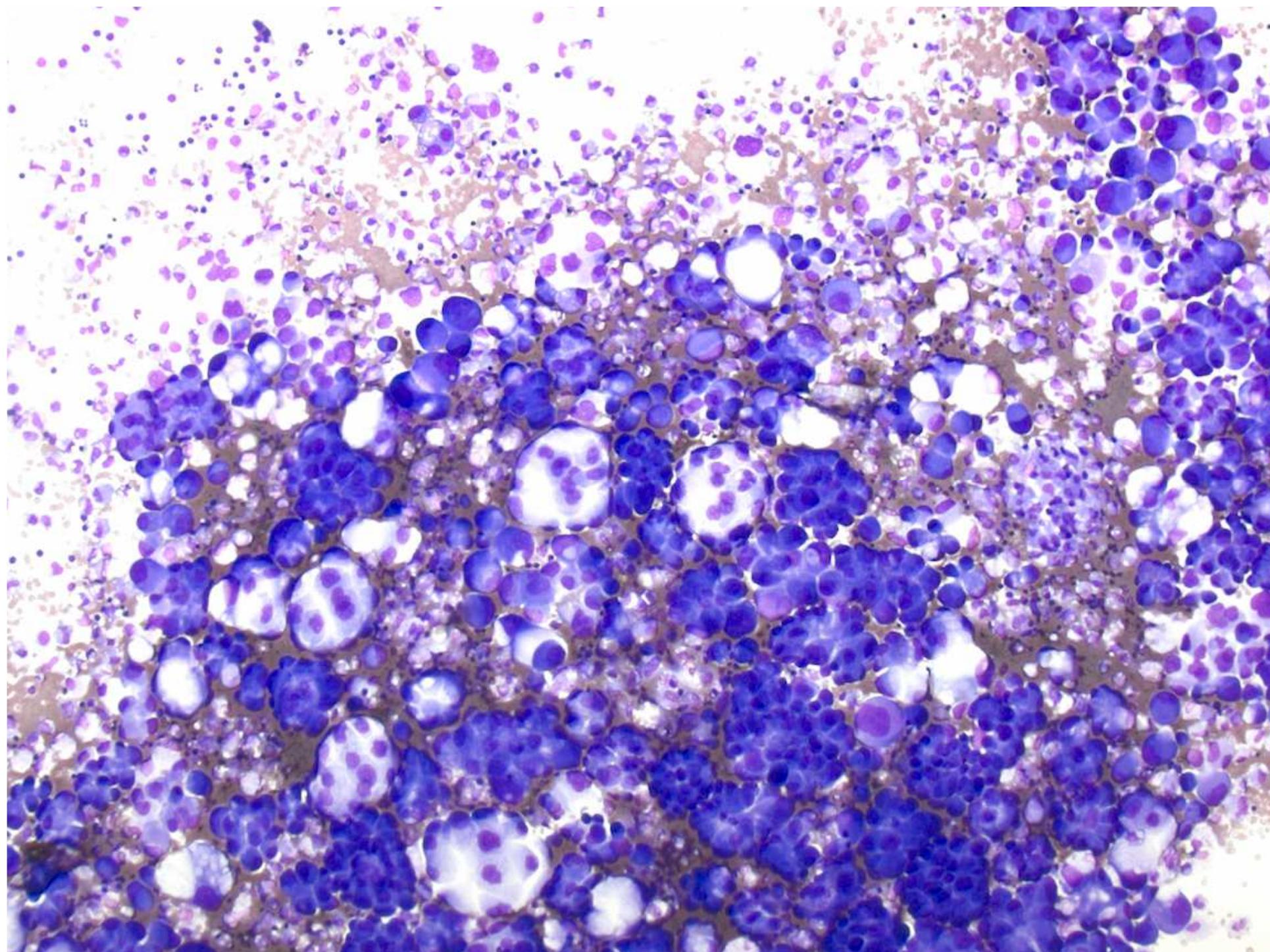


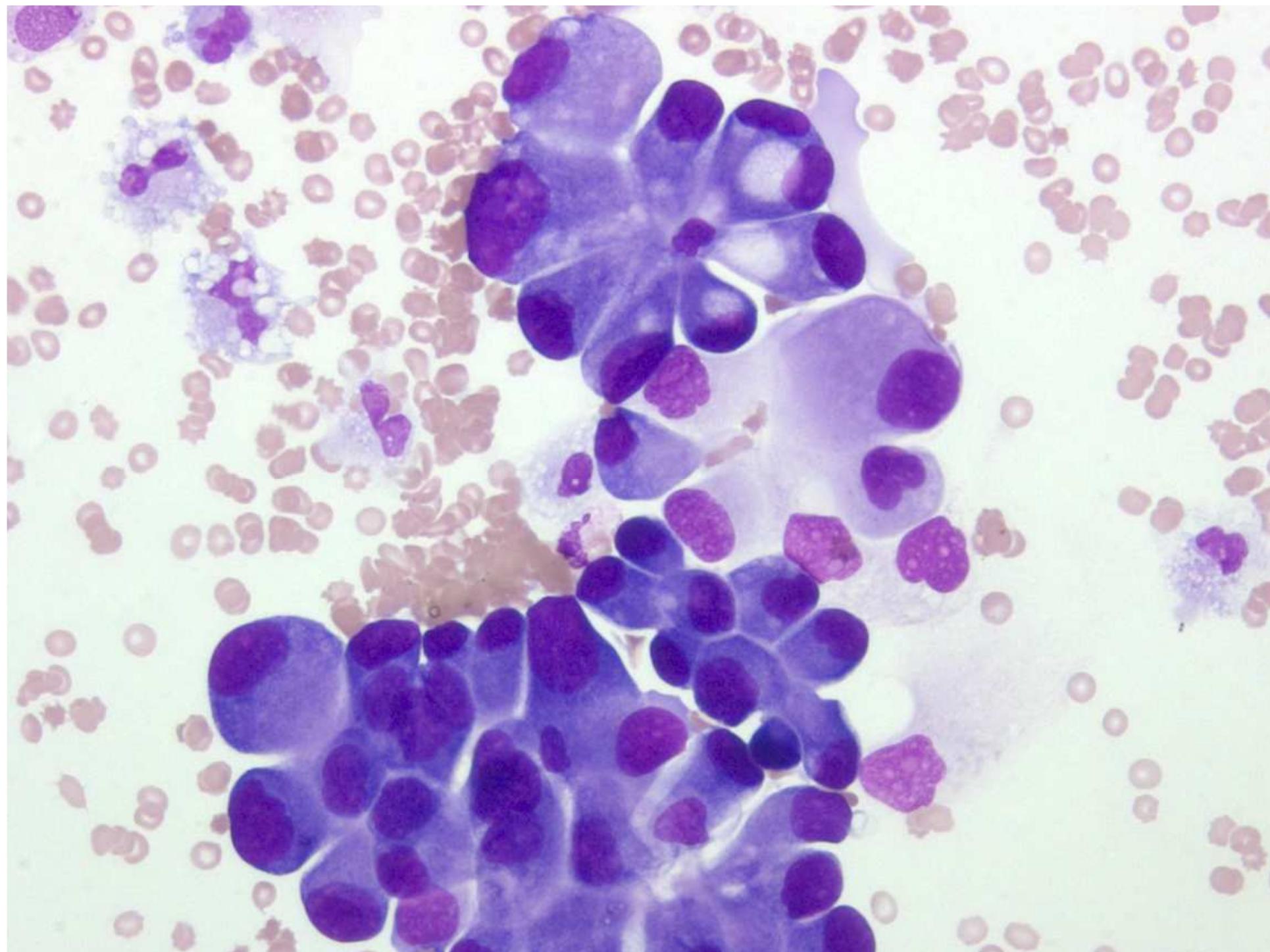
Uomo, 76 anni versamento pericardico

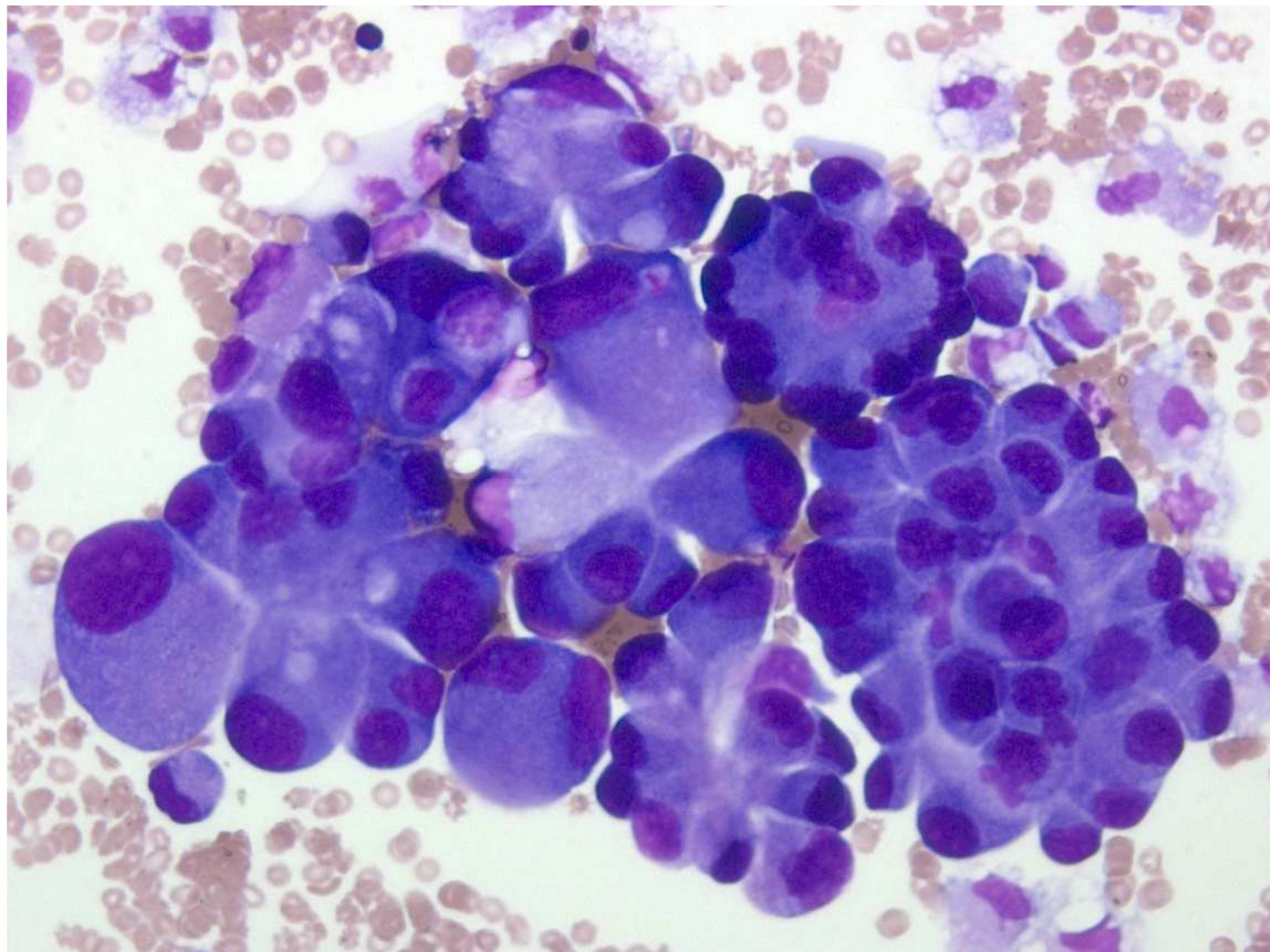
**Paziente fumatore, versamento
sospetto**

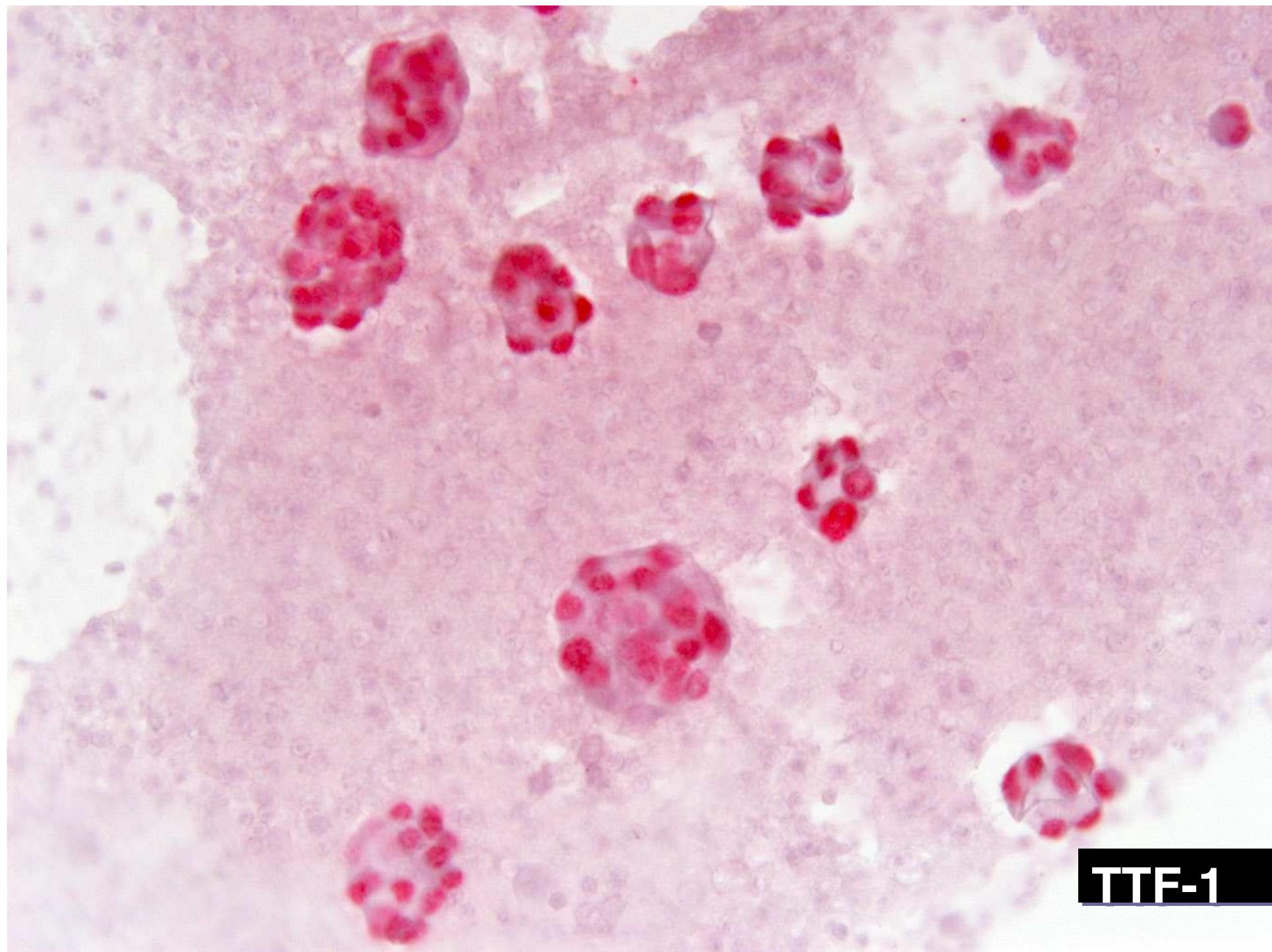
1800 ml, emorragico



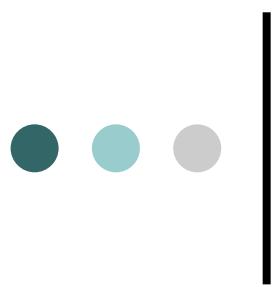








TTF-1



Diagnosi:
presenza di cellule maligne;
aspetto compatibile con
adenocarcinoma polmonare

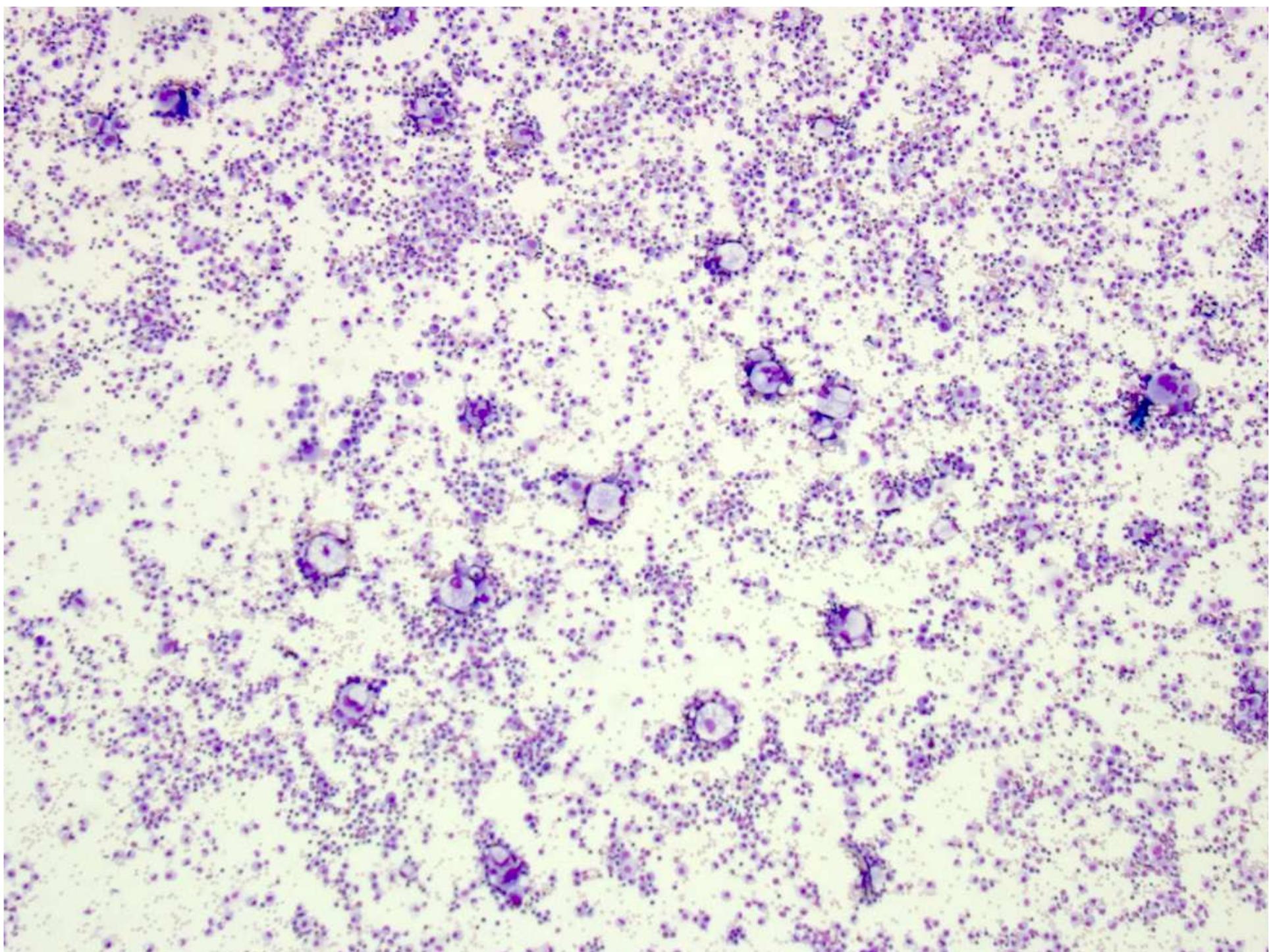
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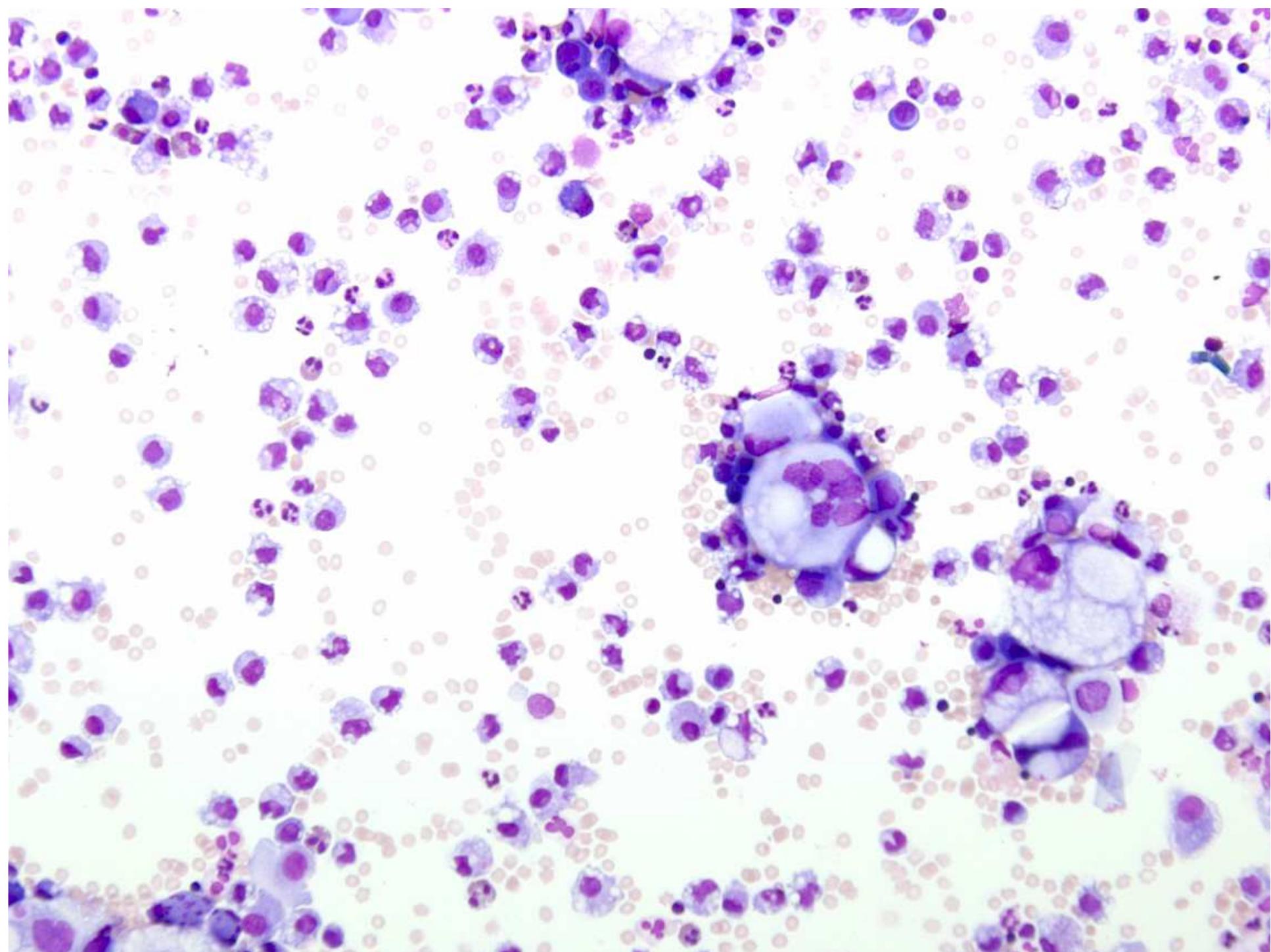


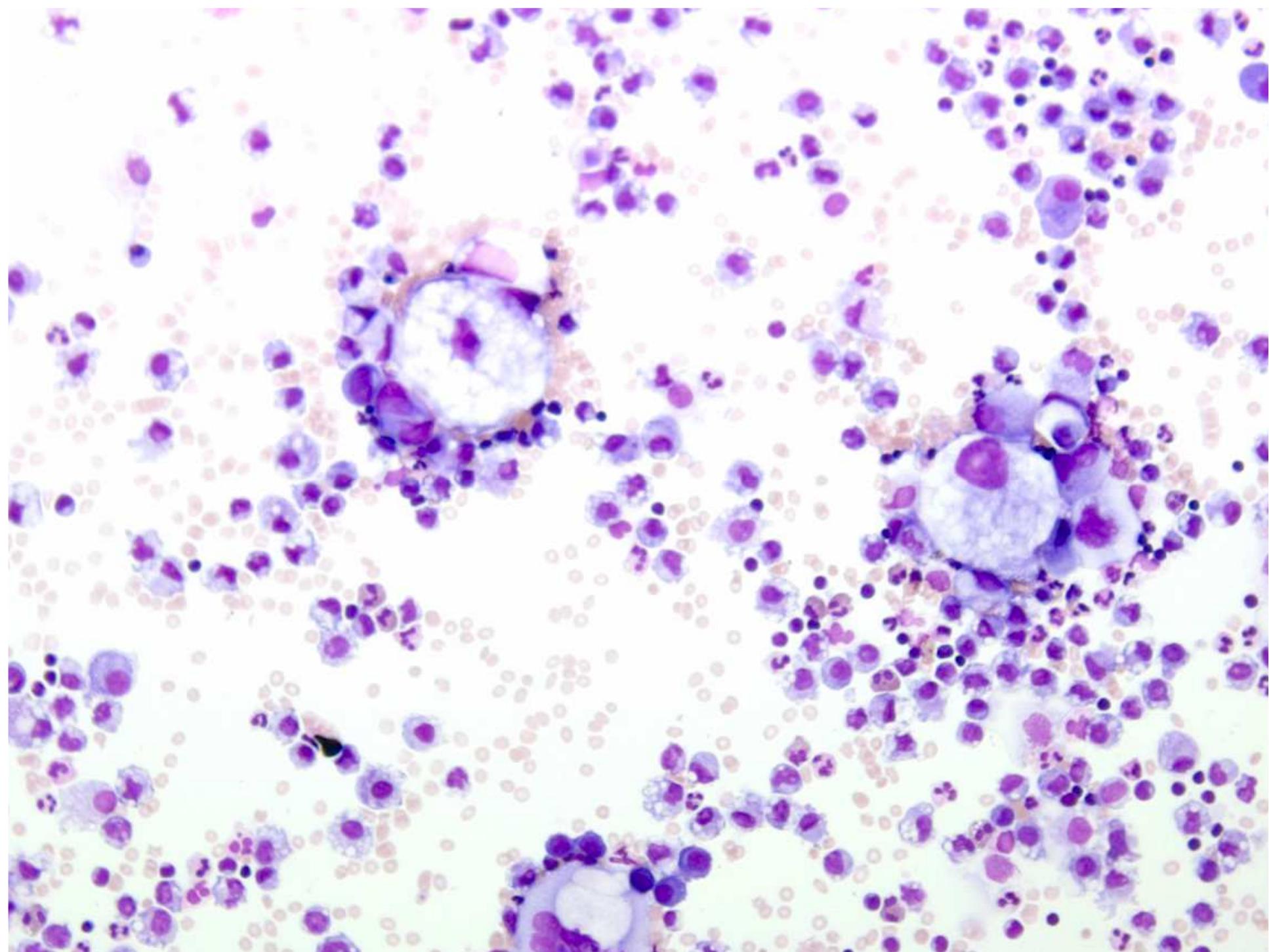
Uomo, 69 anni ascite

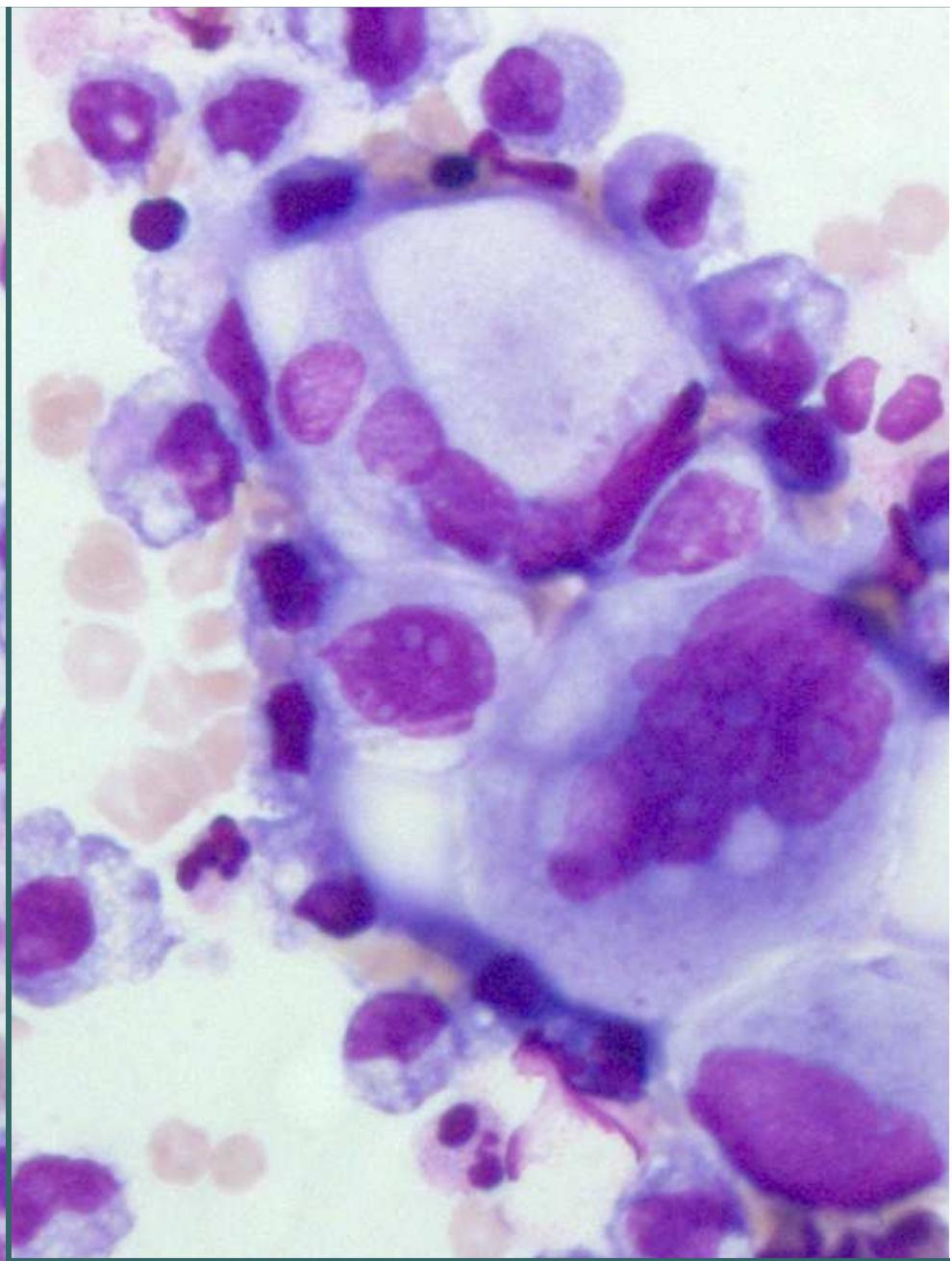
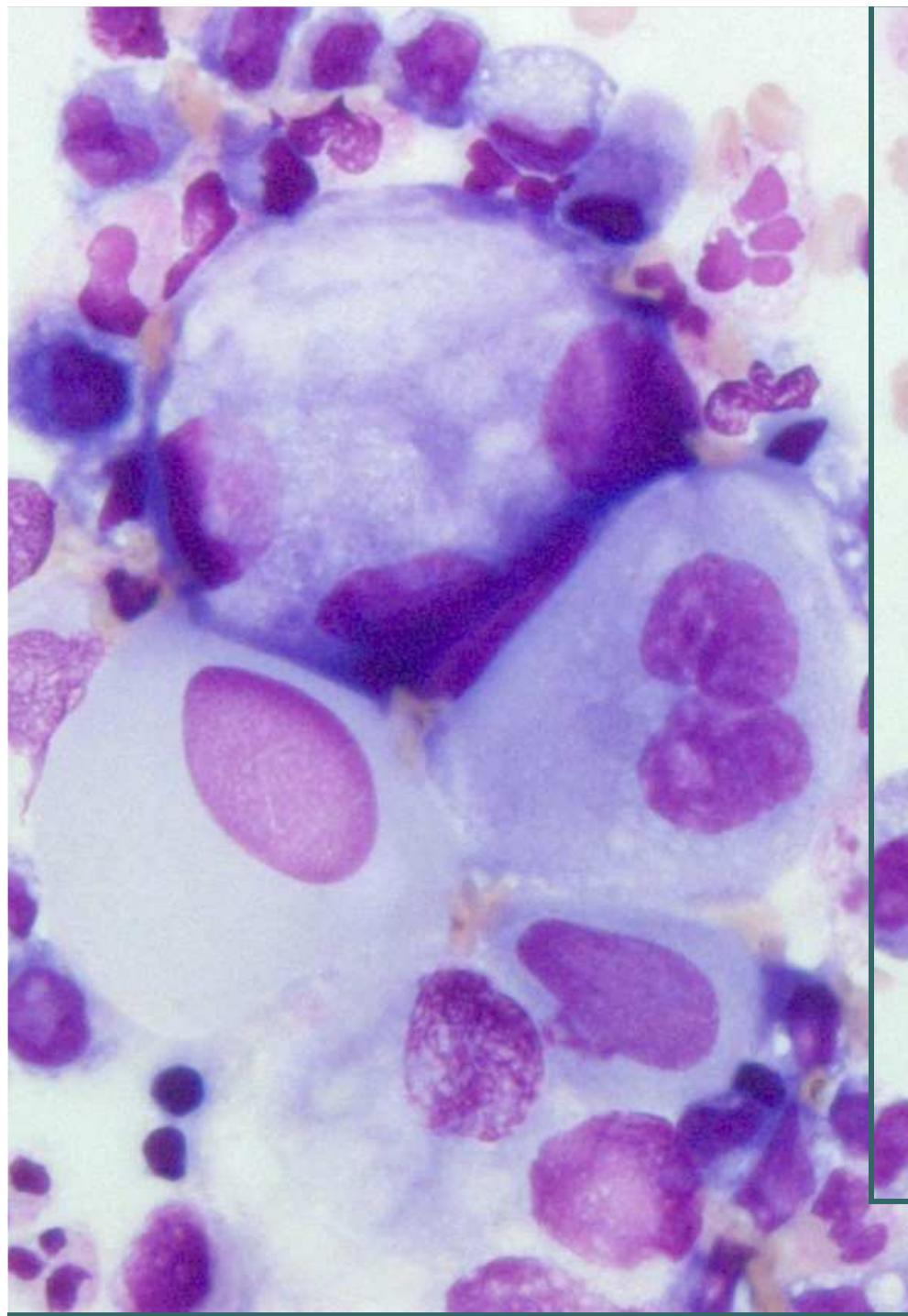
Ascite di origine non chiara,
stenosi colon sigmoideo, sospetto
processo infiammatorio

2000 ml, giallino











Diagnosi:
presenza di cellule maligne;
aspetto compatibile con
adenocarcinoma del colon

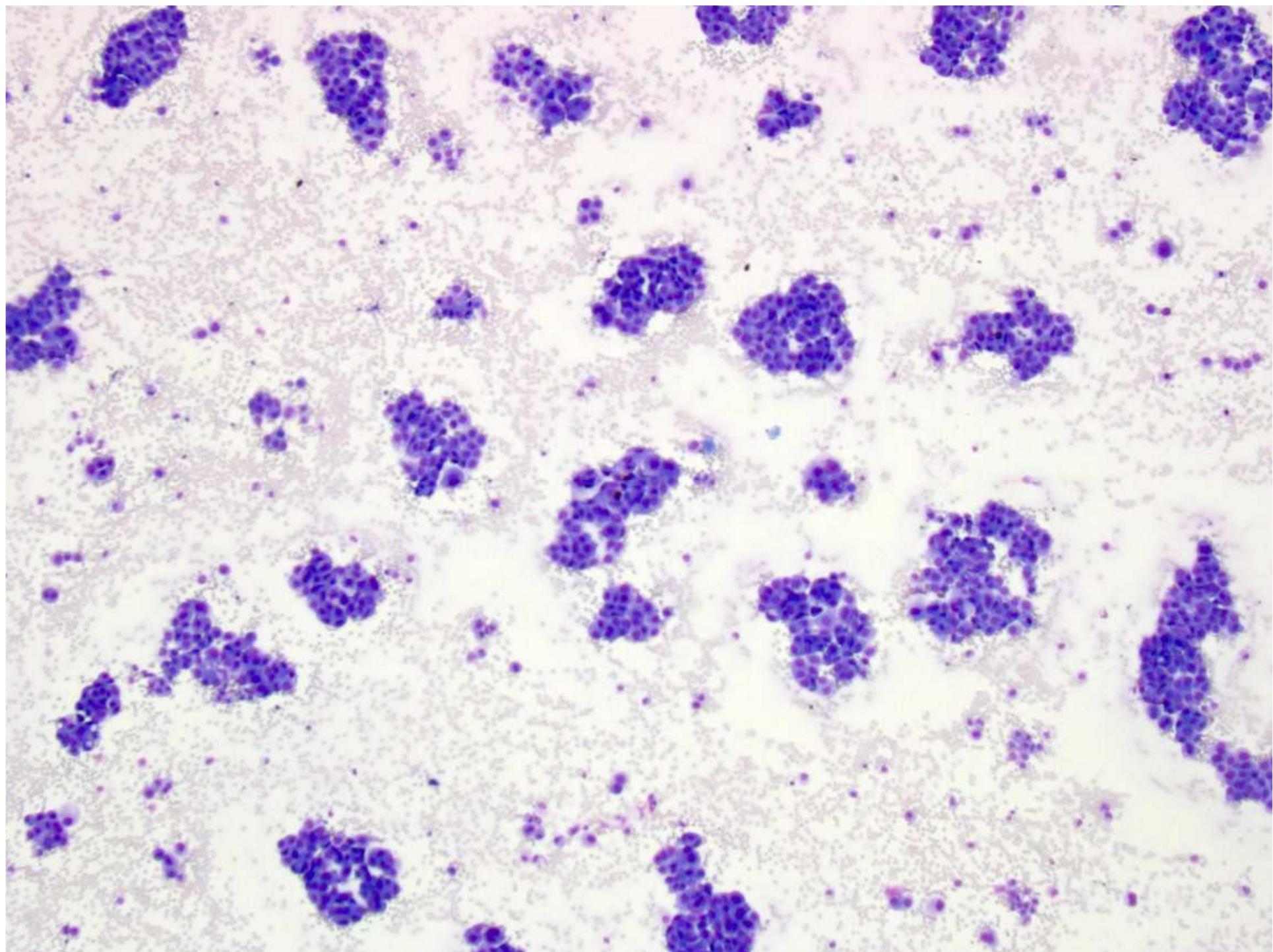
6.



Donna, 81 anni ascite

Sospetta neoplasia sigma,
embolia polmonare

3000 ml, ematico



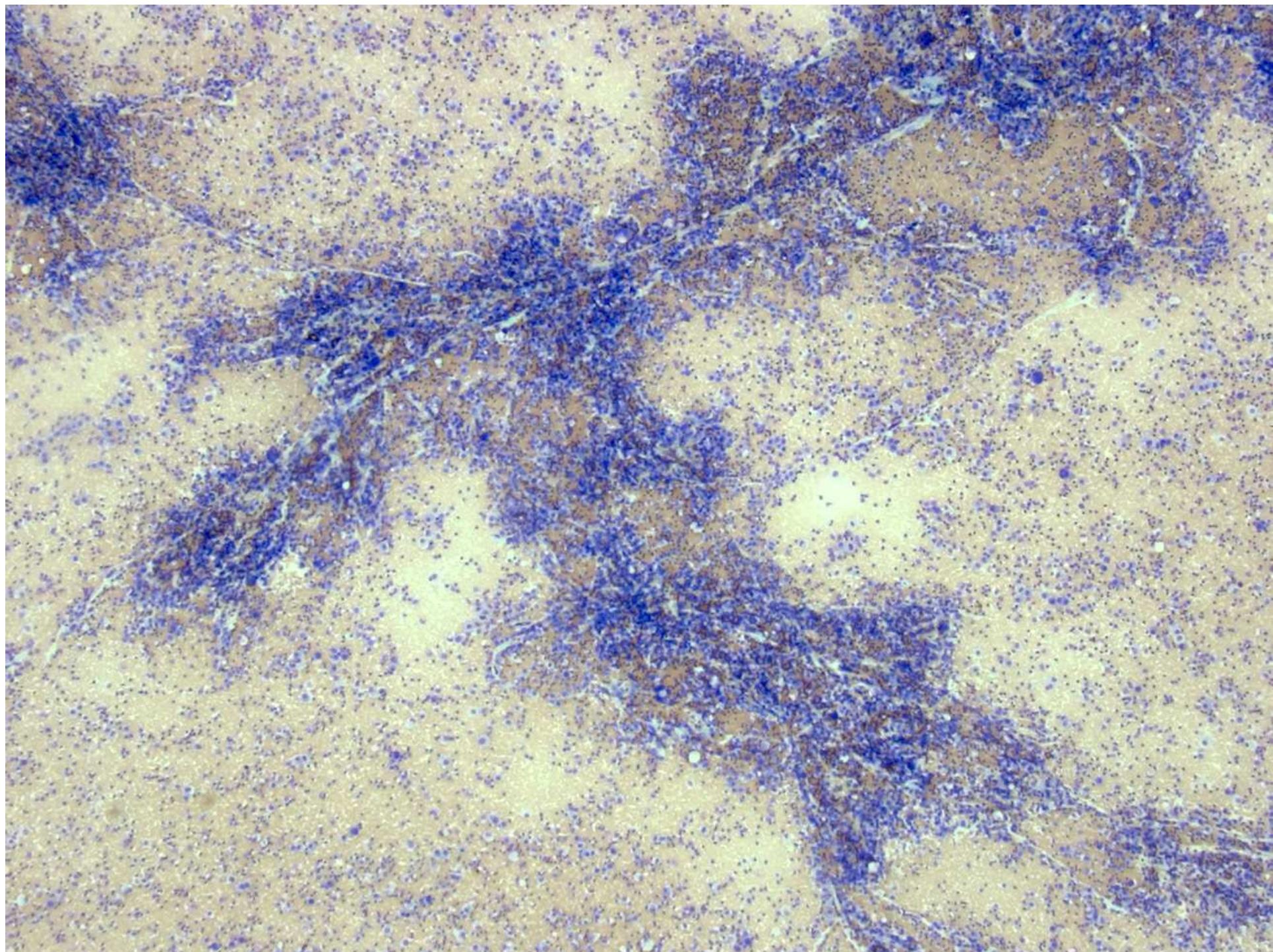
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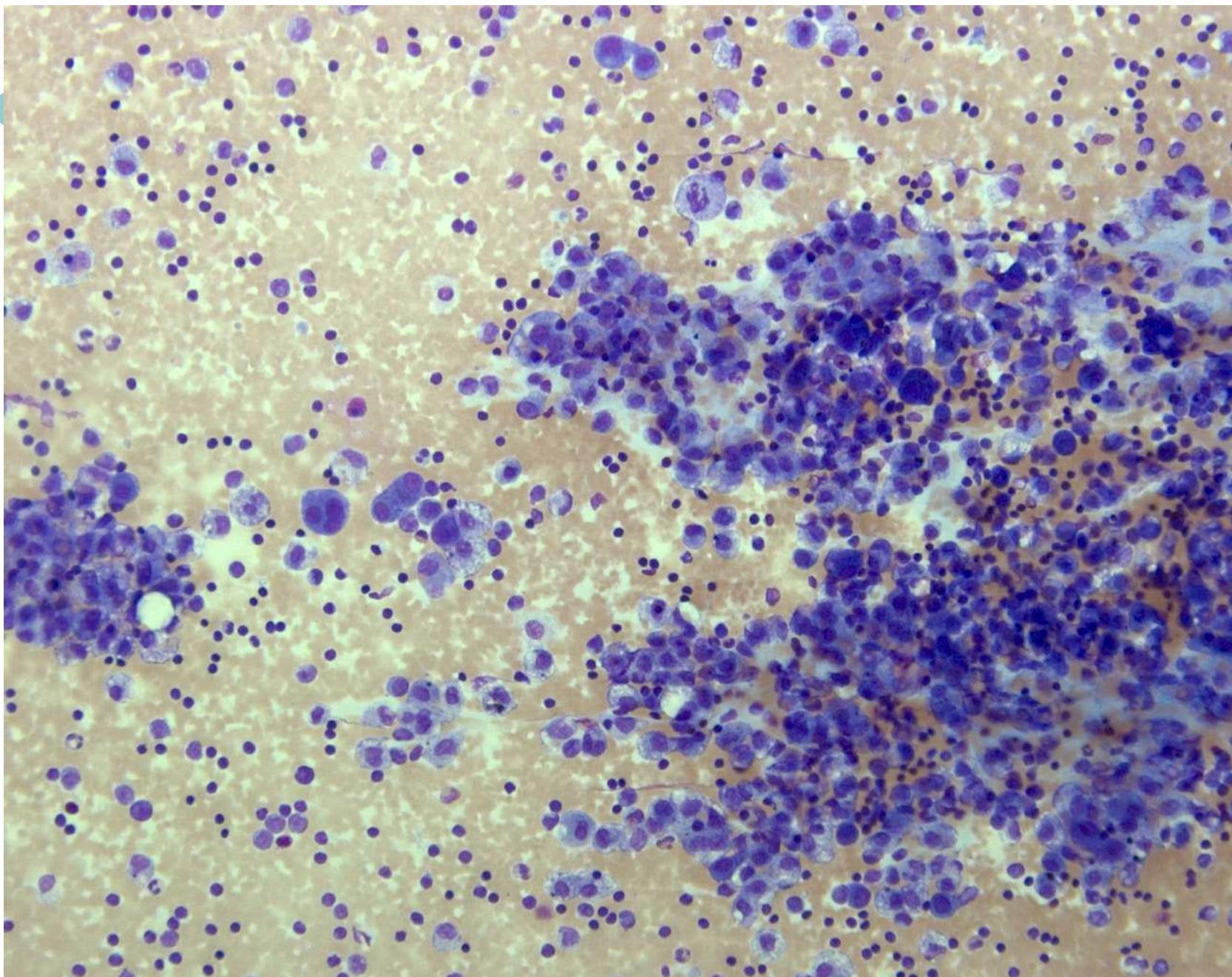


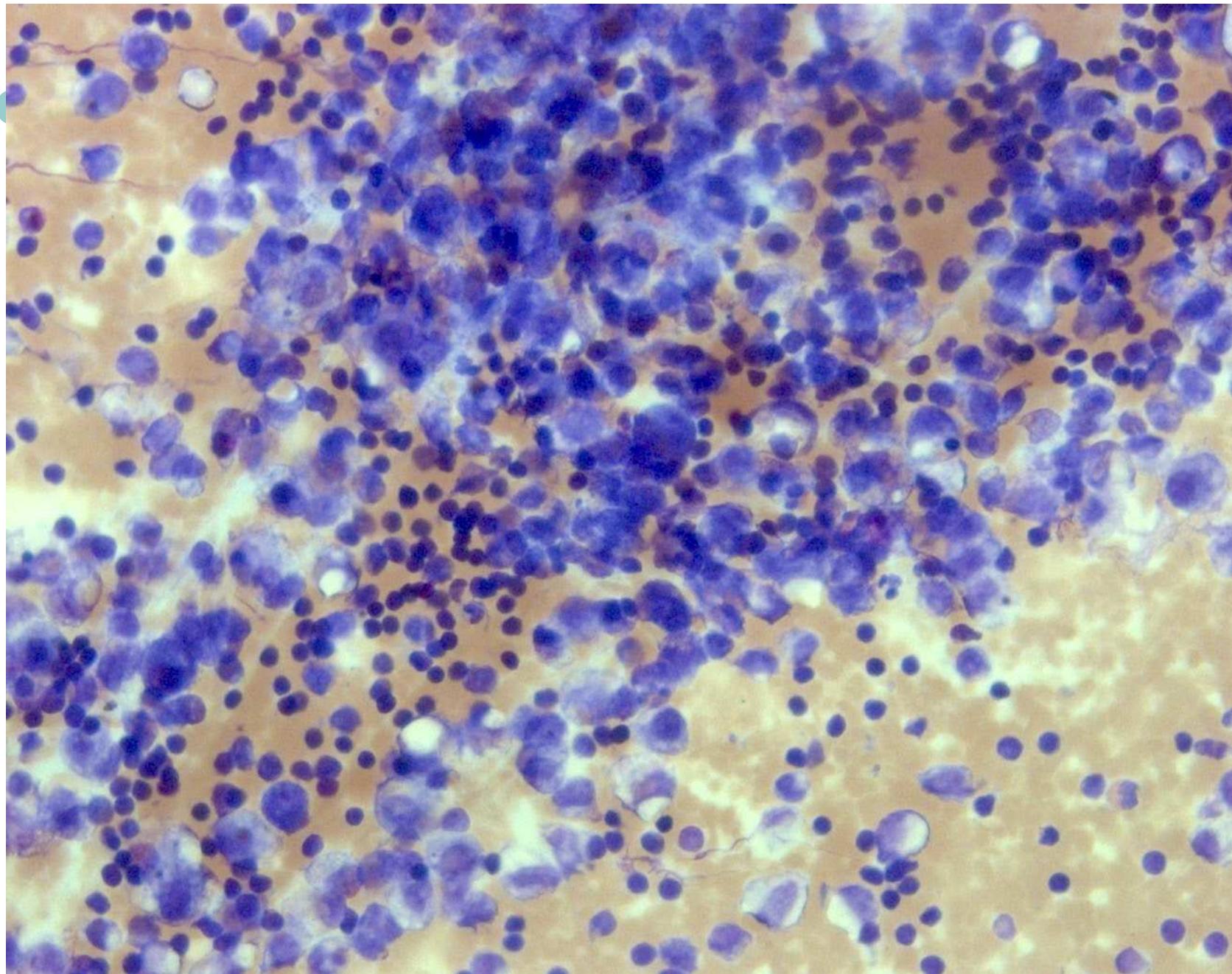
Uomo, 62 anni versamento pericardico

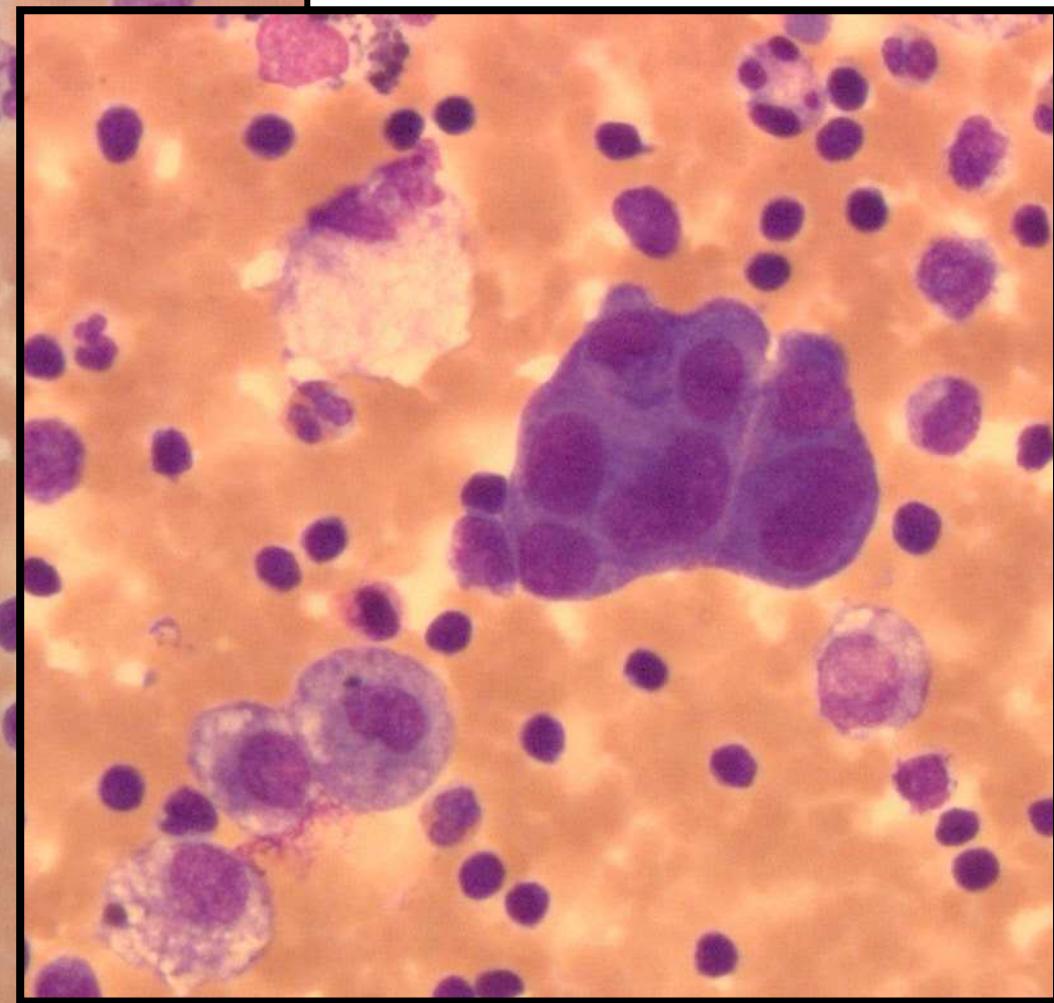
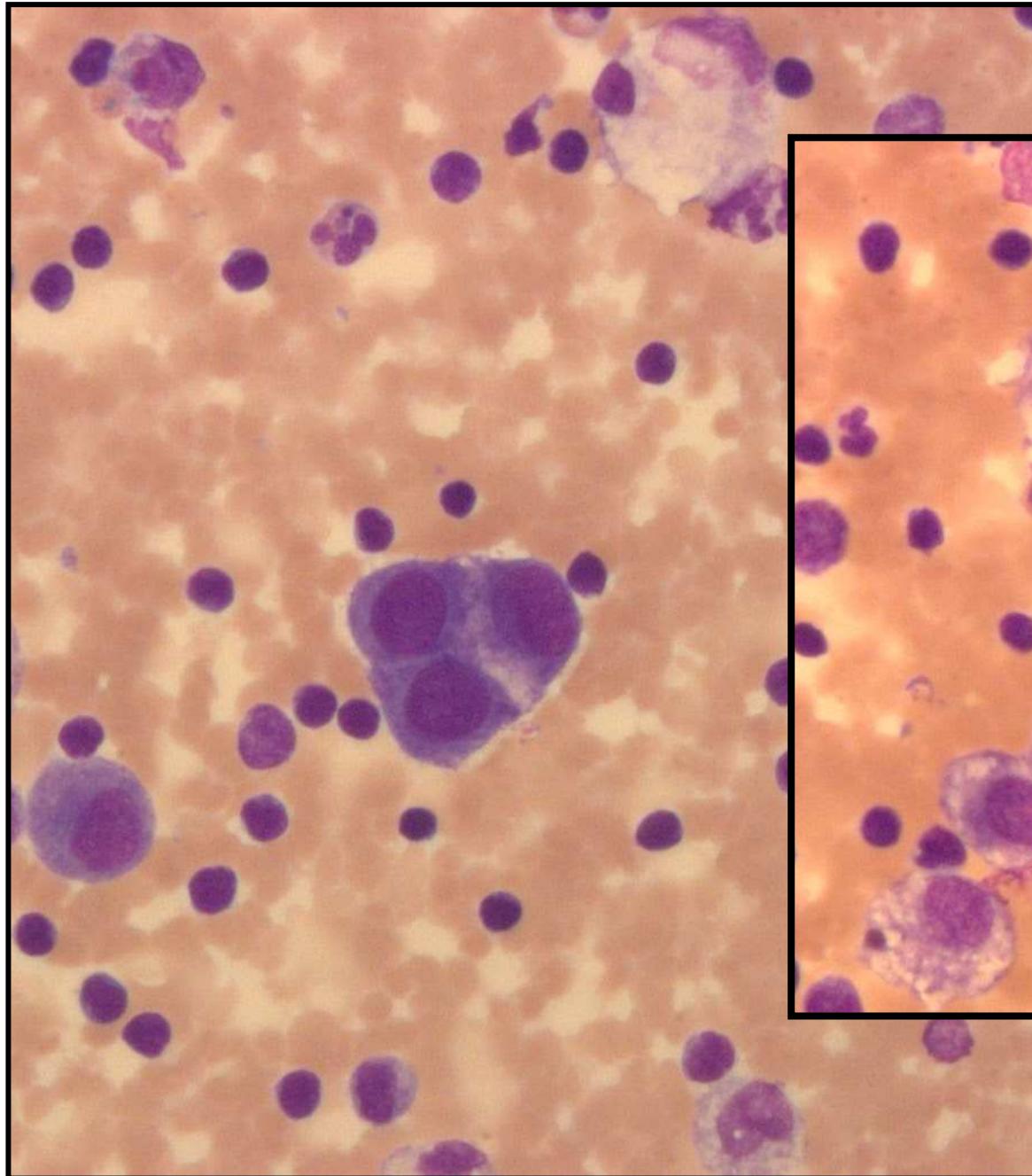
Frattura (patologica?) di 2 coste.

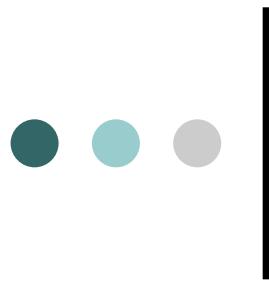
350 ml, rosso











Diagnosi:
negativo per cellule maligne;
versamento linfocitario

8.



Uomo, 78 anni versamento pericardico

Pregresso linfoma

250 ml, citrino

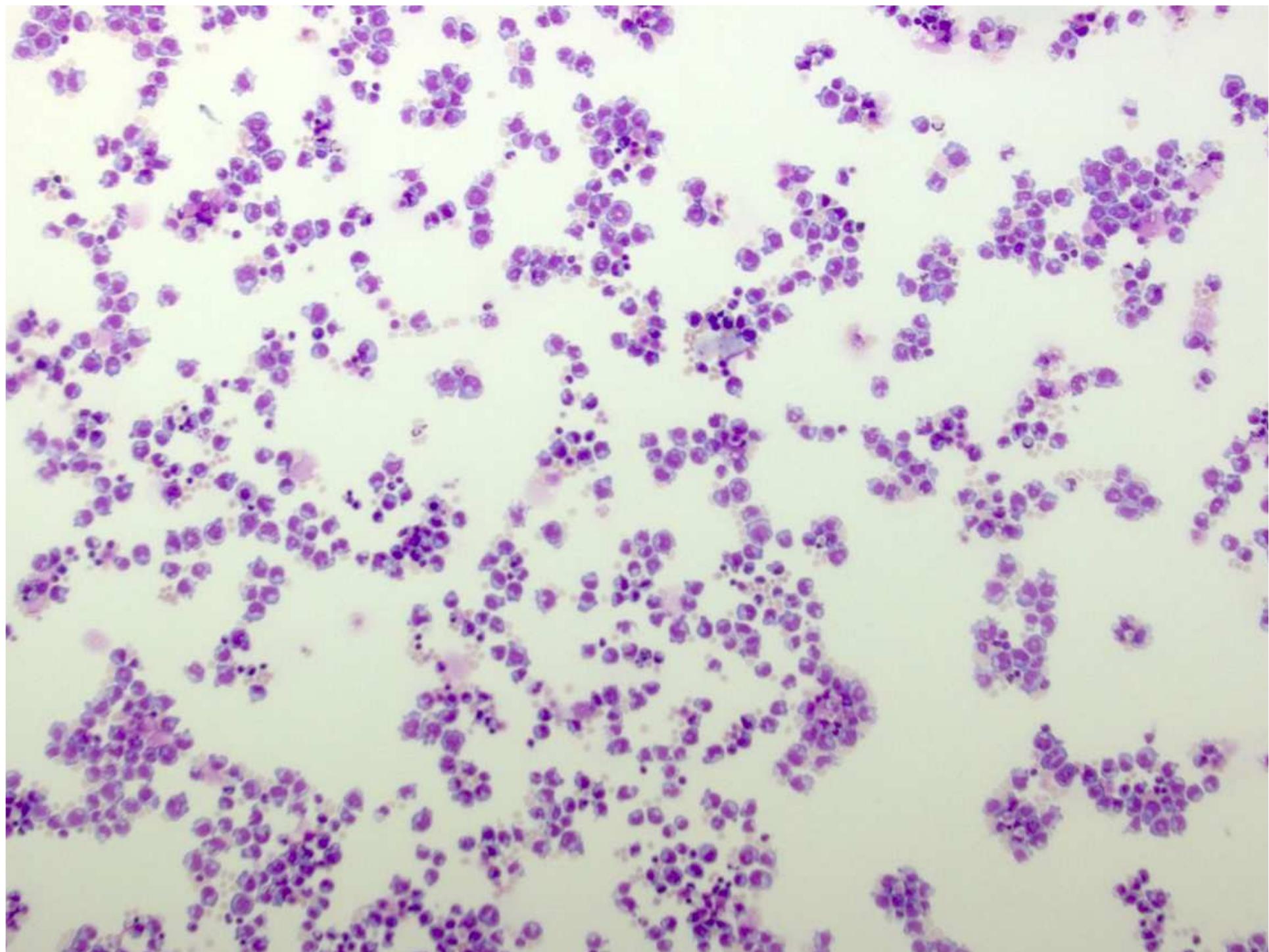
9.

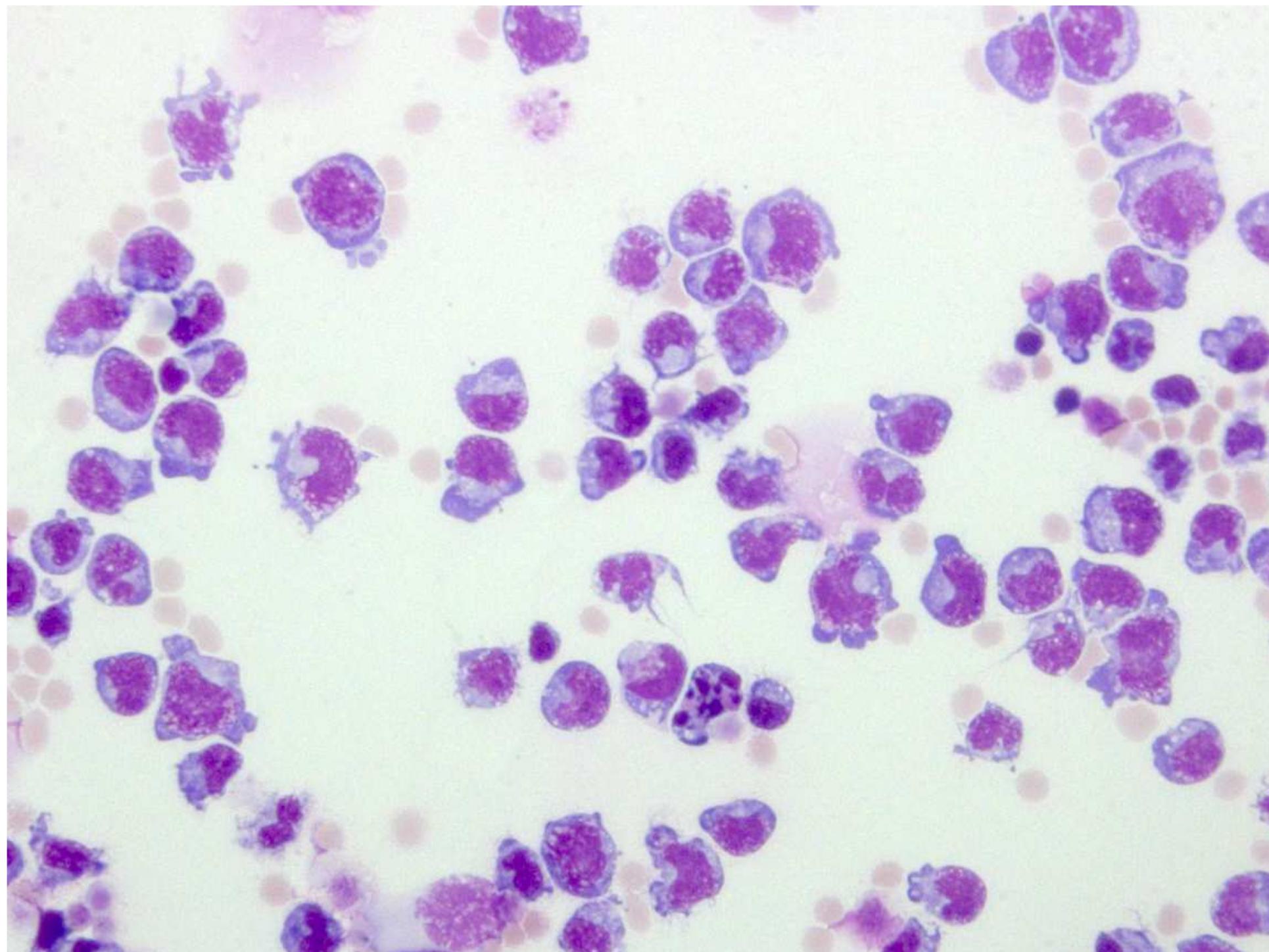


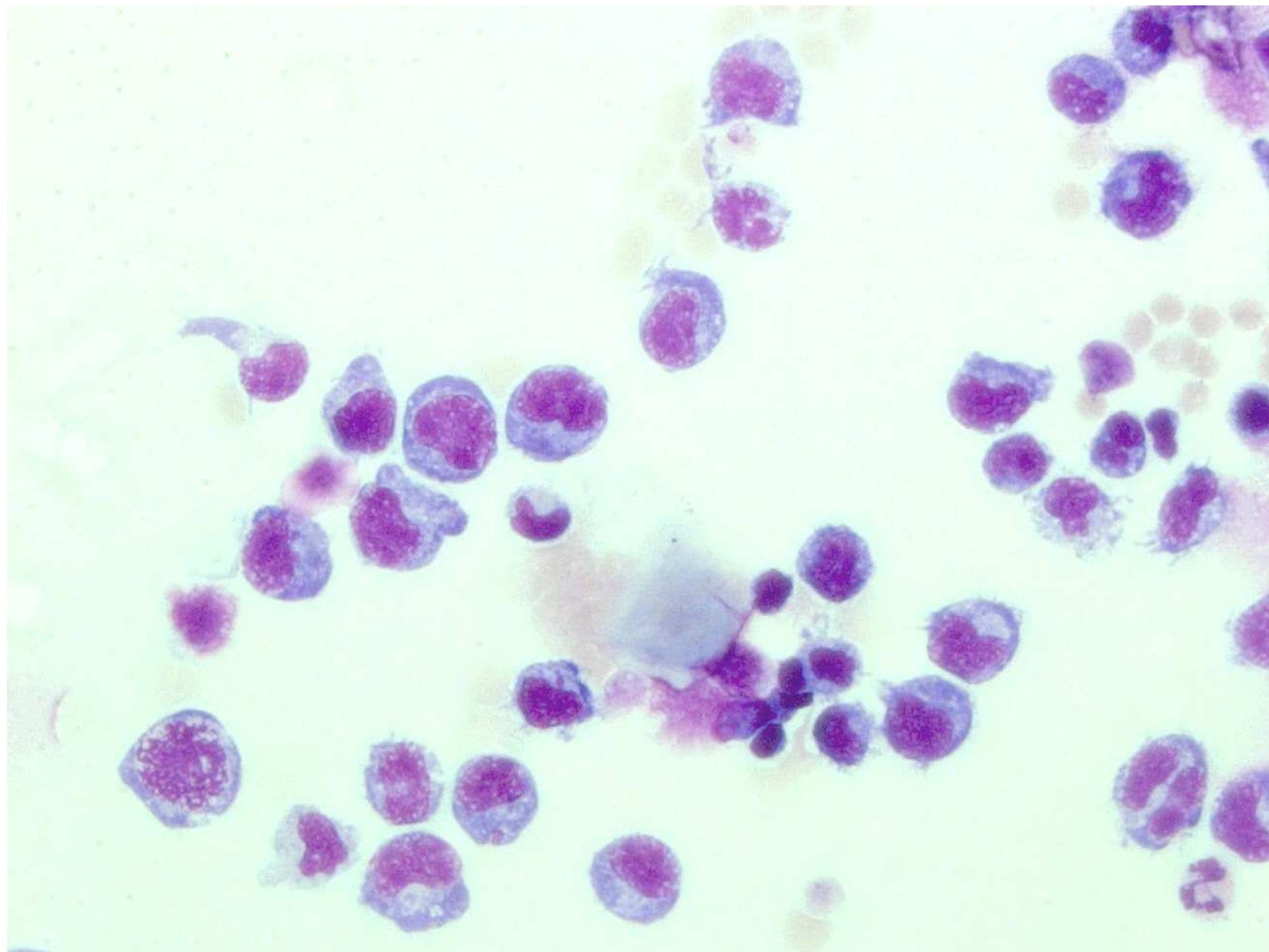
Donna, 94 anni versamento pleurico

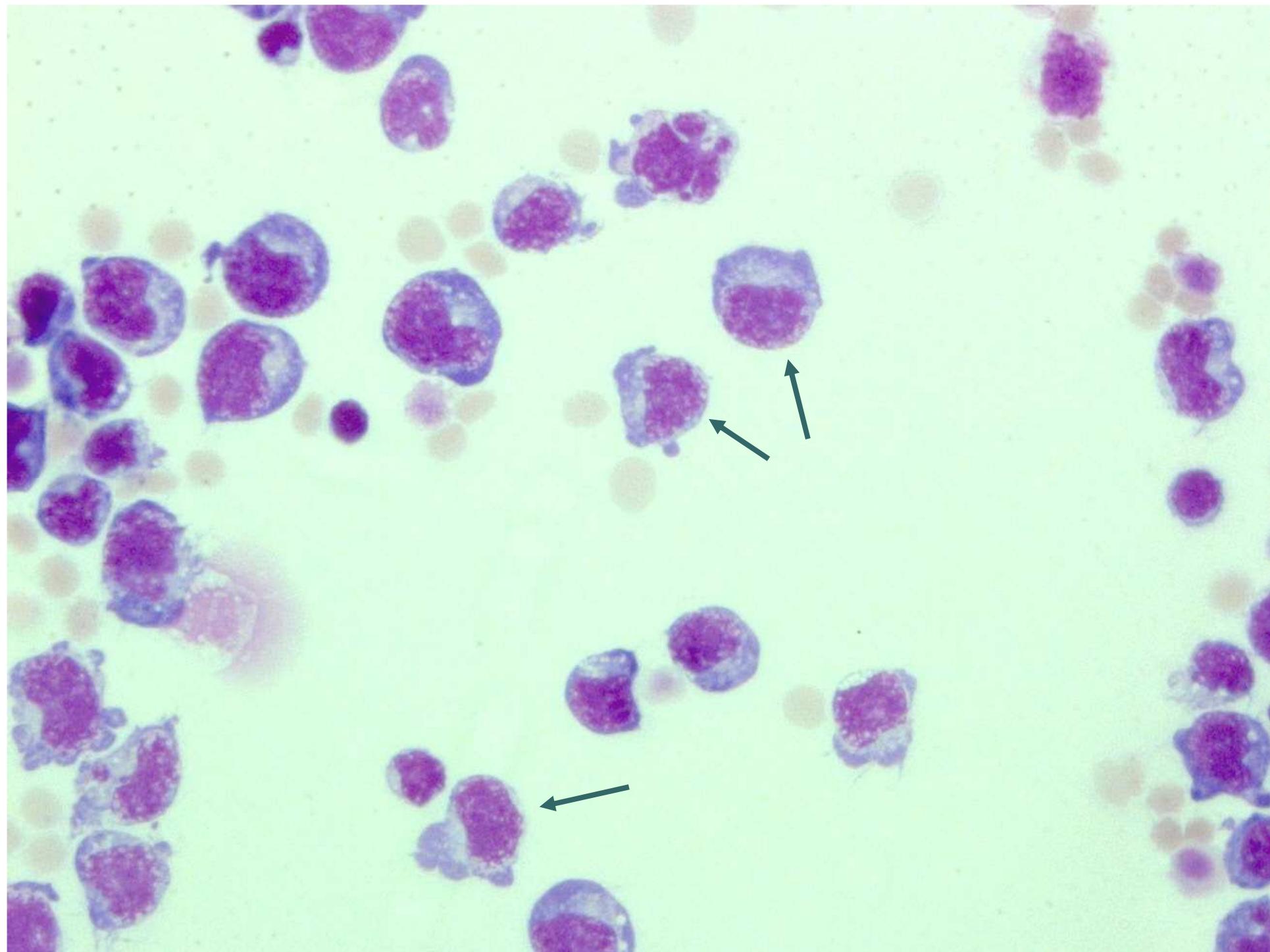
Primo episodio

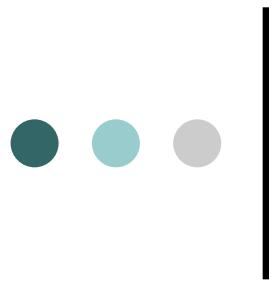
300 ml, lattescente











Diagnosi:
presenza di cellule maligne
(linfoma B di alto grado, plasmocitoide)



LINFOMI: QUADRO CITOLOGICO

LINFOMI A BASSO GRADO

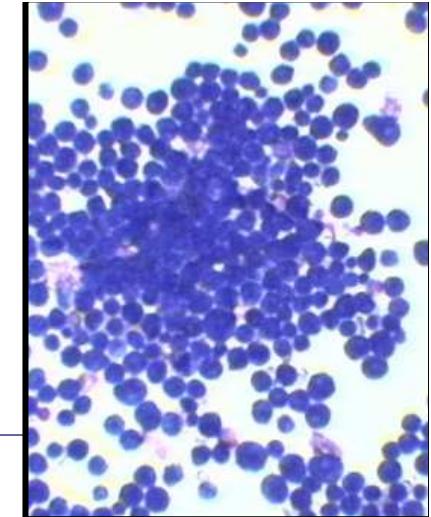
- Linfomi non-Hodgkin B a basso grado

LINFOMI AD ALTO GRADO

- Linfomi non-Hodgkin B ad alto grado
- Primary effusion lymphoma (PEL)
- Linfomi non-Hodgkin T



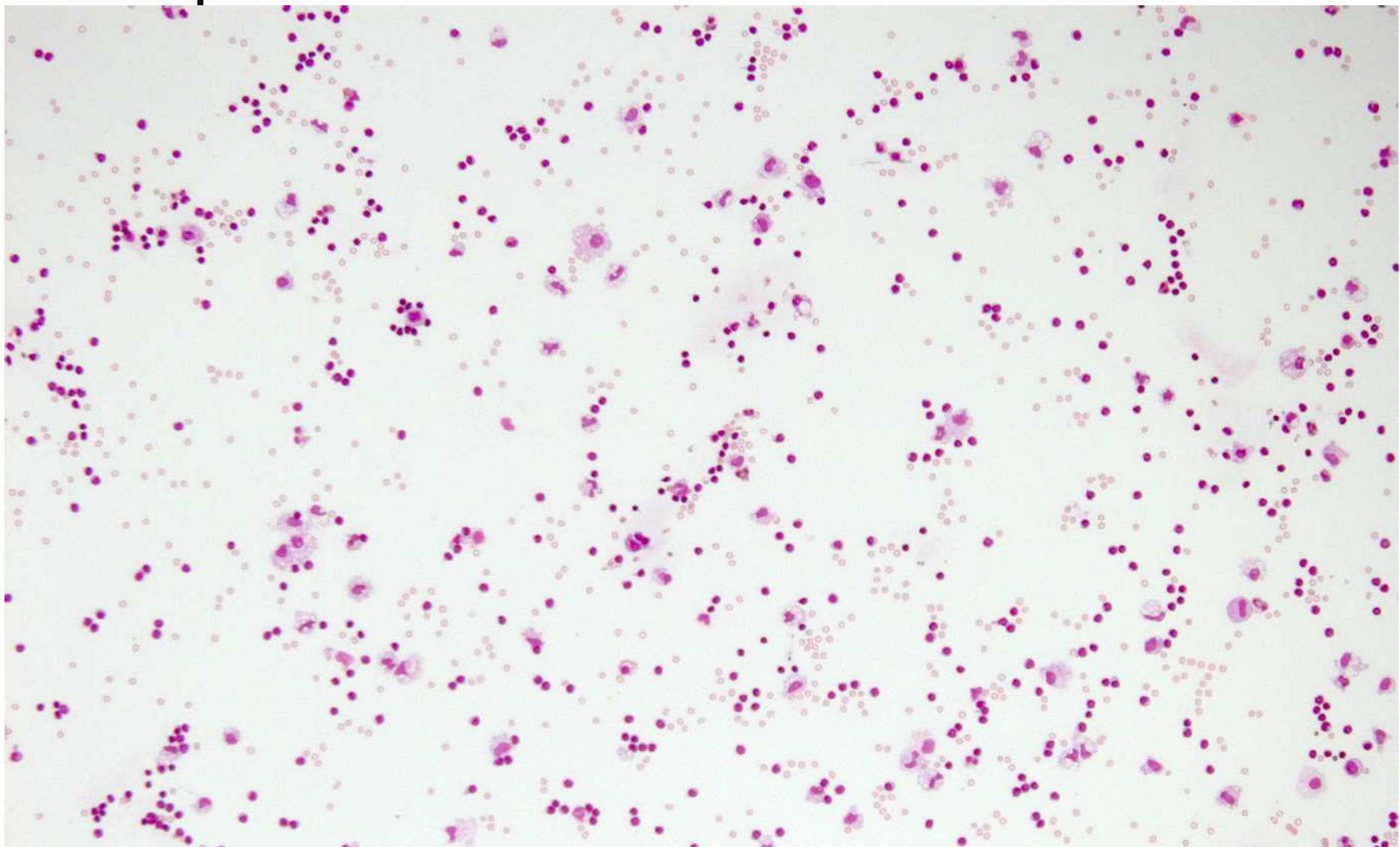
LINFOMI: QUADRO CITOLOGICO

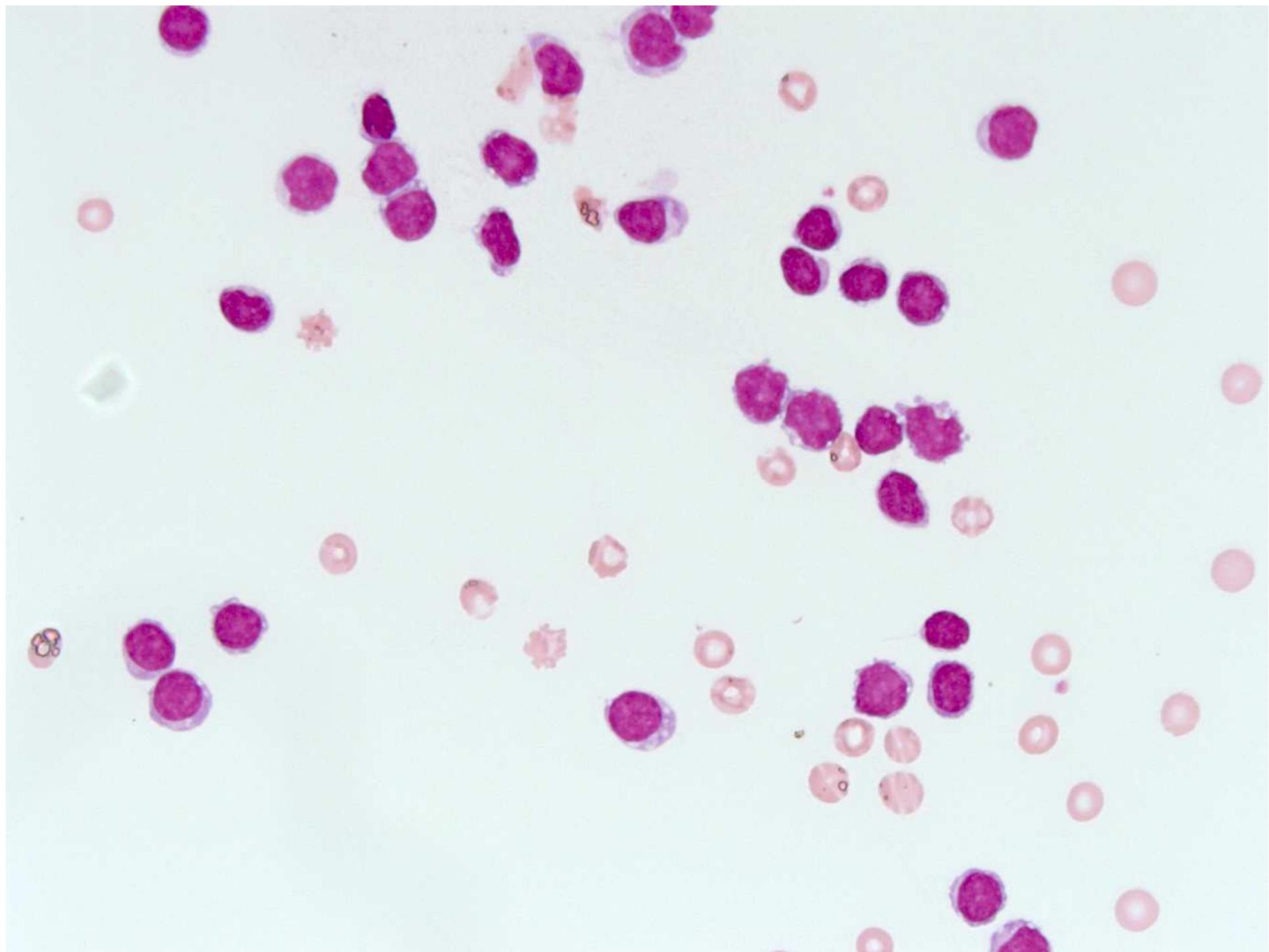


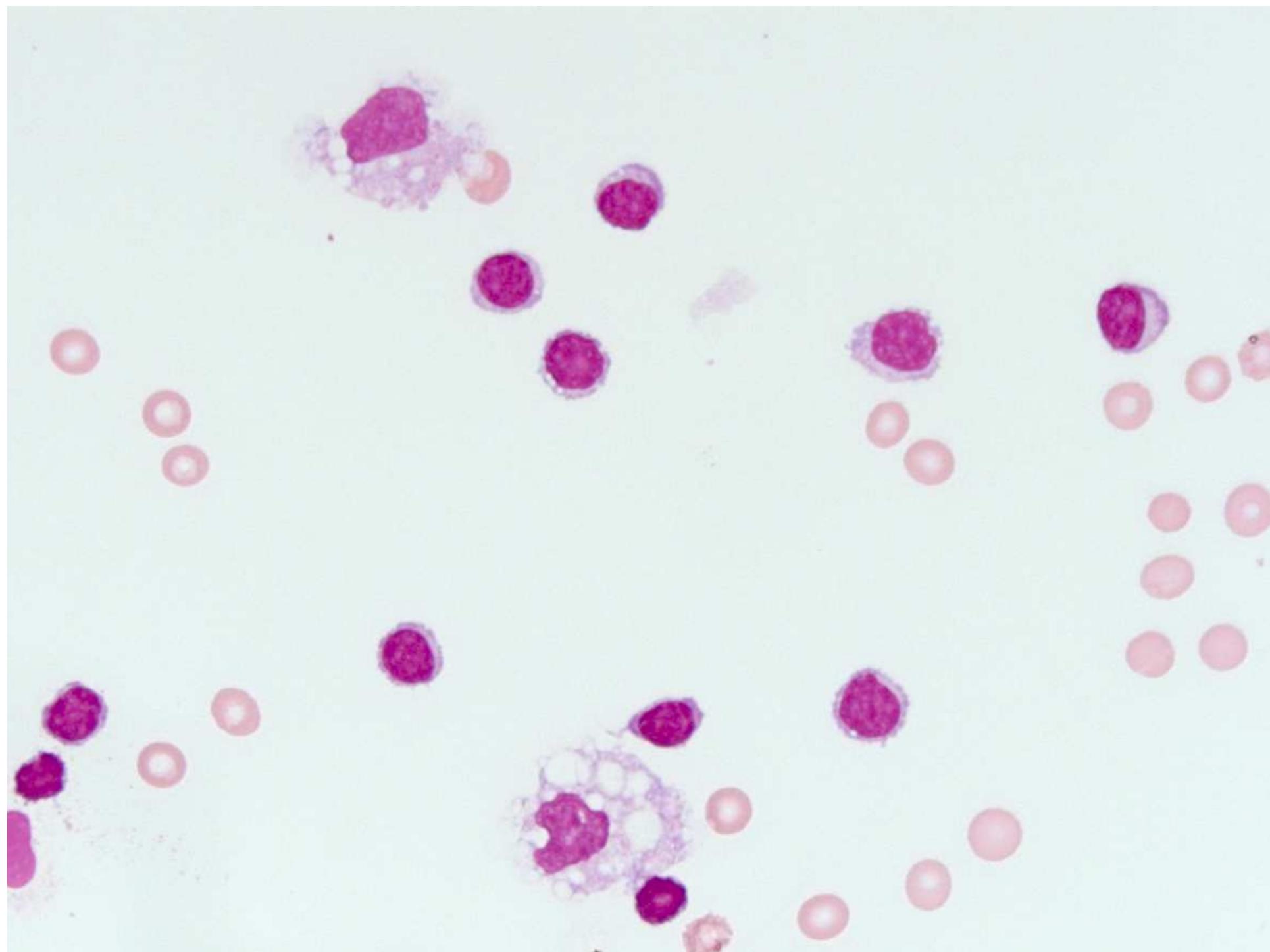
- Strisci sempre molto cellulati.
- Popolazione monomorfa di cellule linfoidi.
- Caratteri nucleari e citoplasmatici molto variabili, in relazione al tipo di linfoma

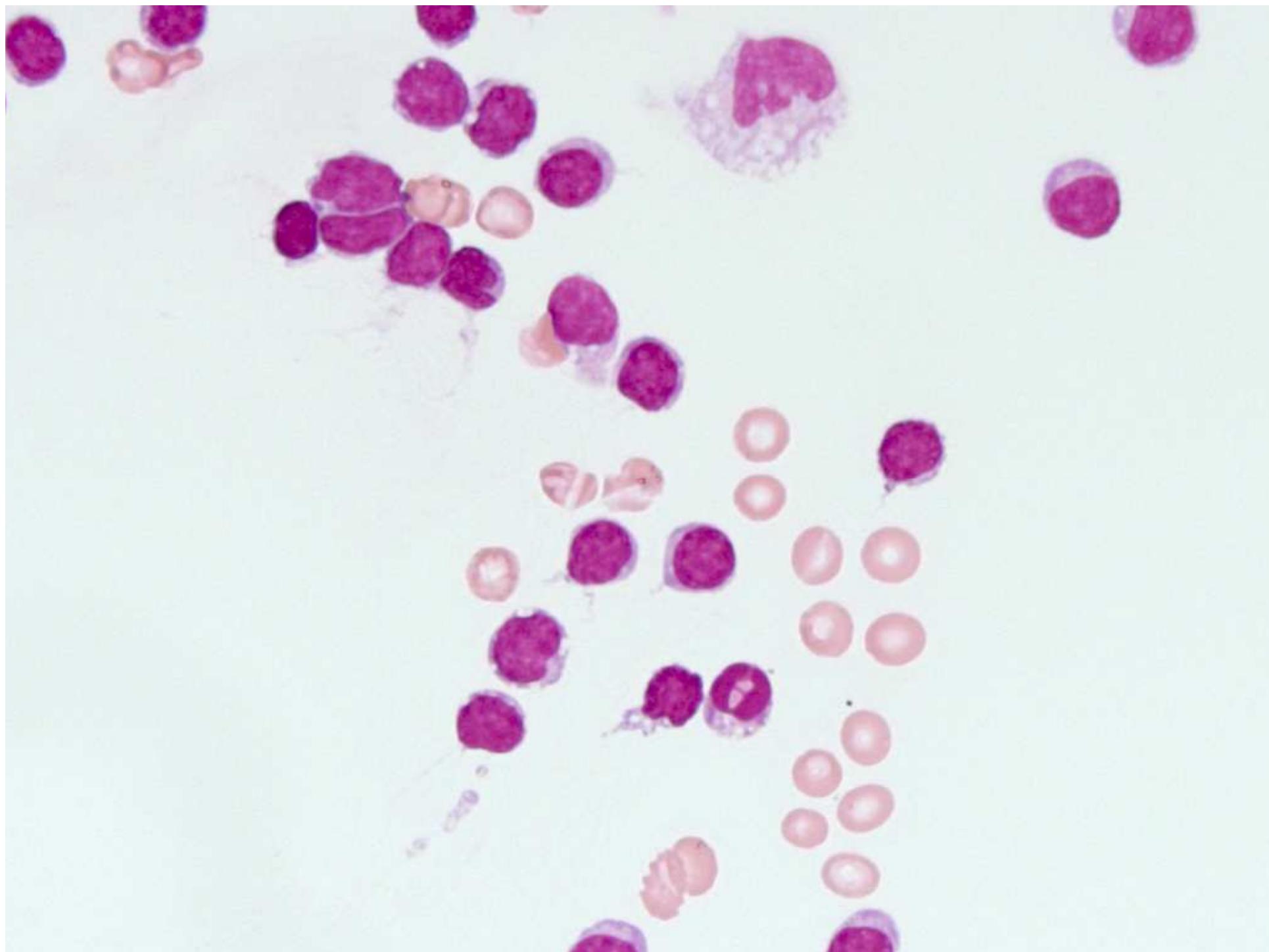


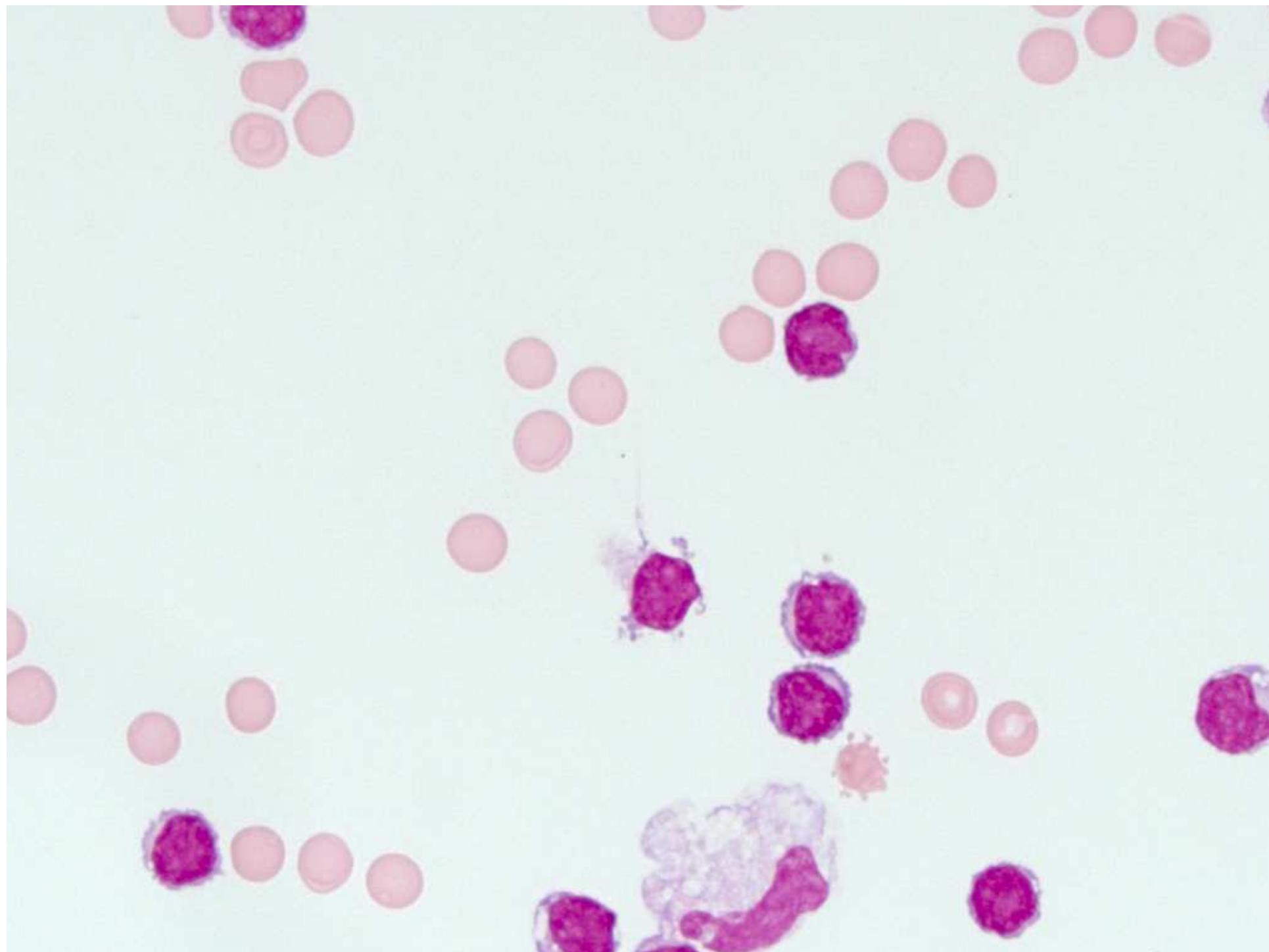
Versamento reattivo

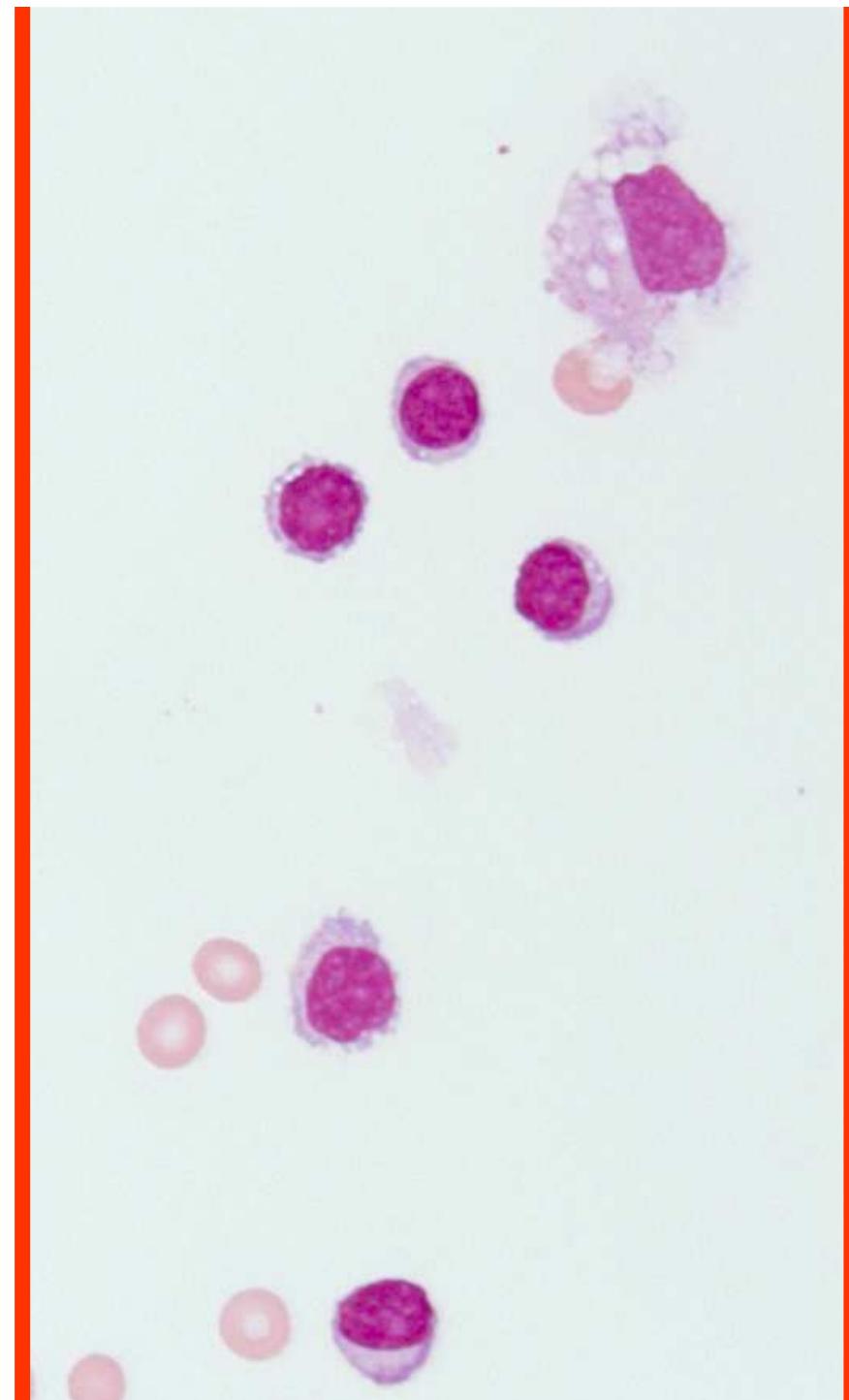
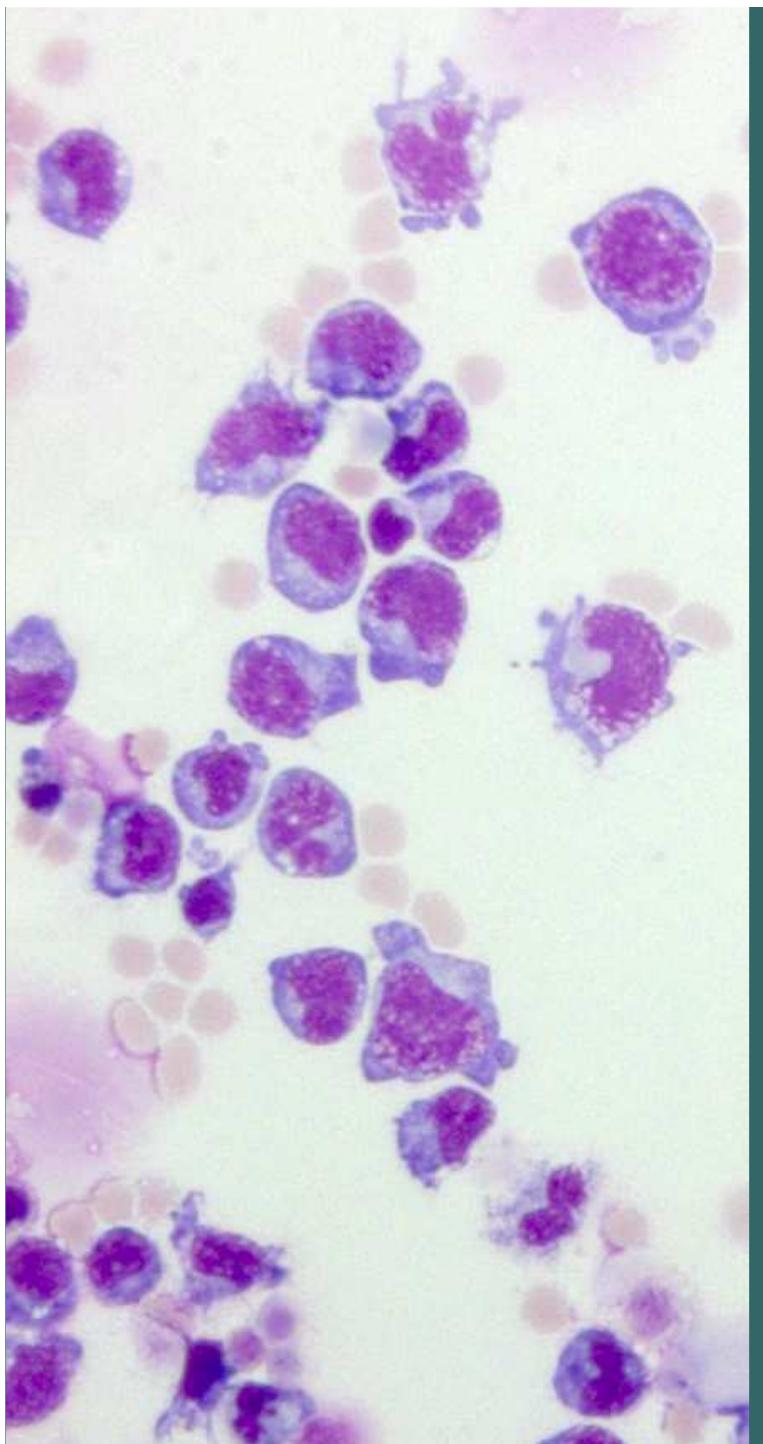


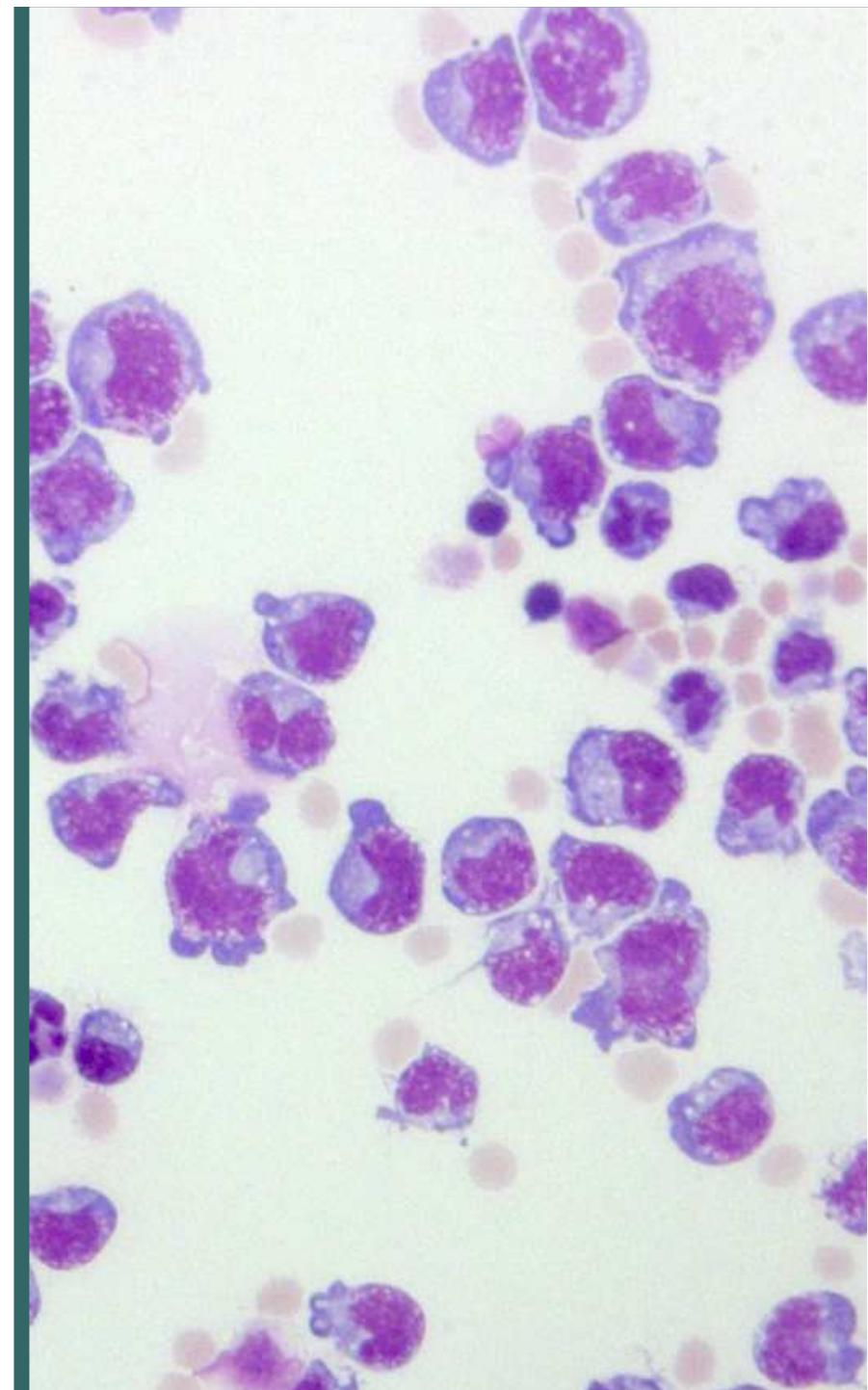
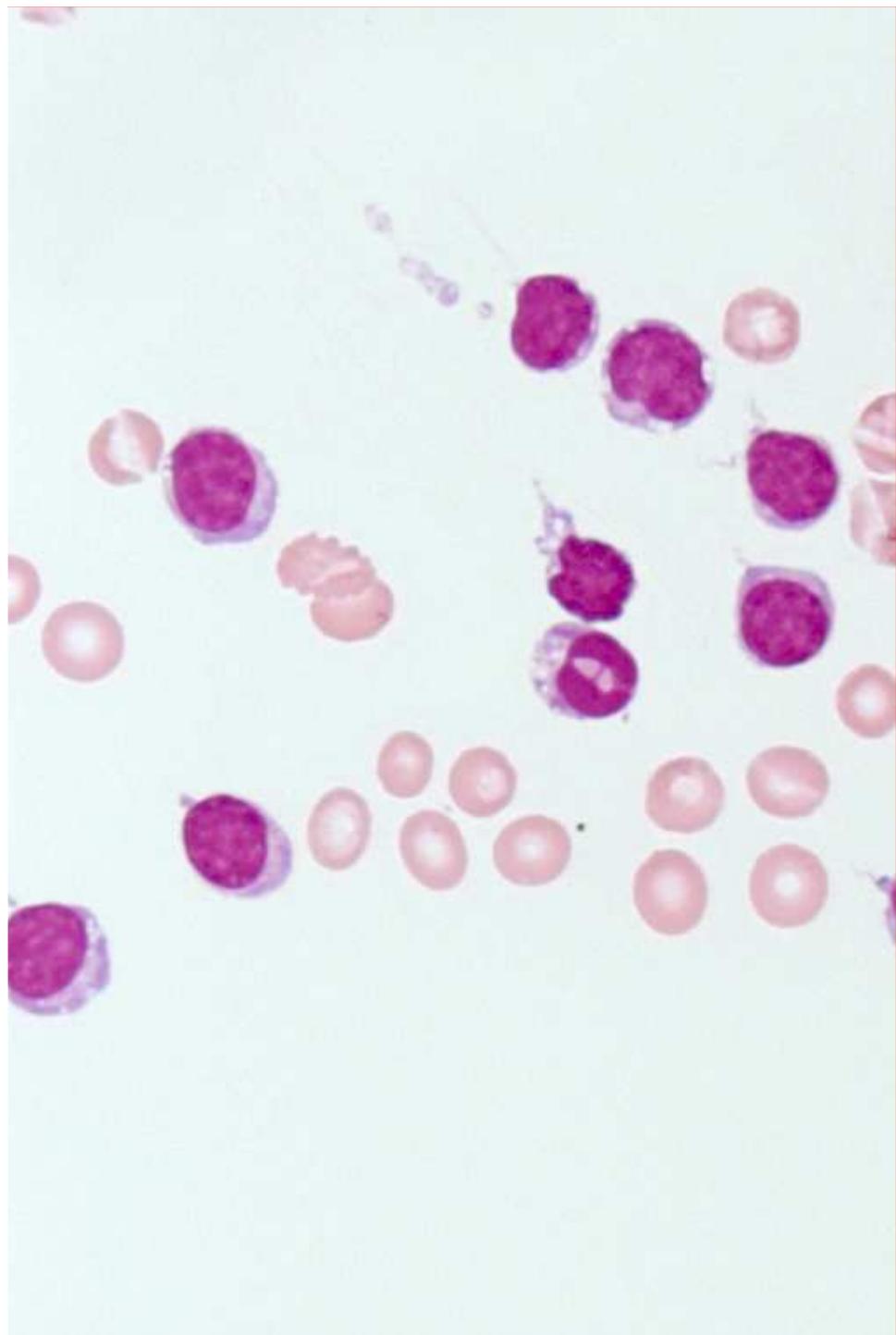












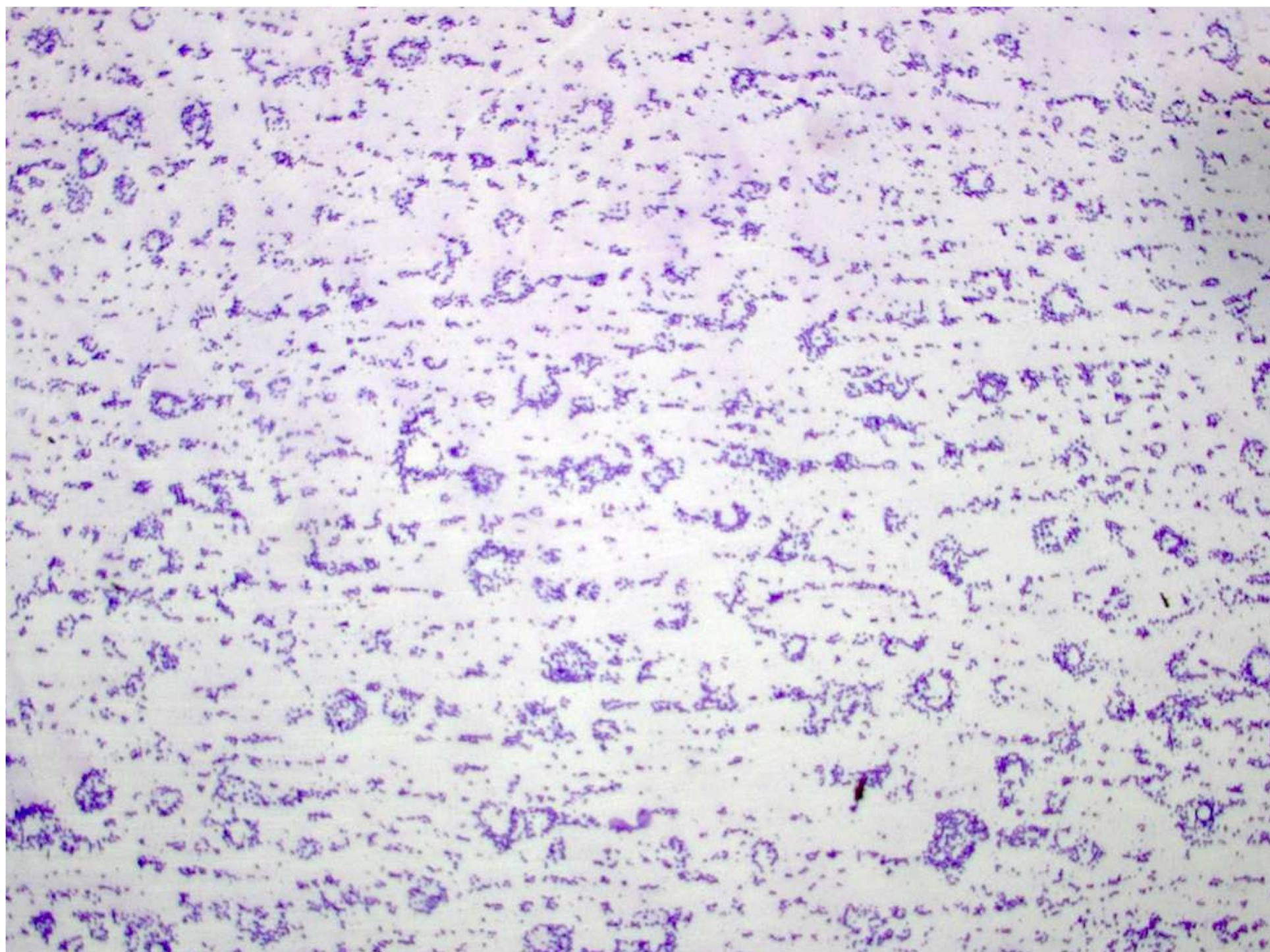
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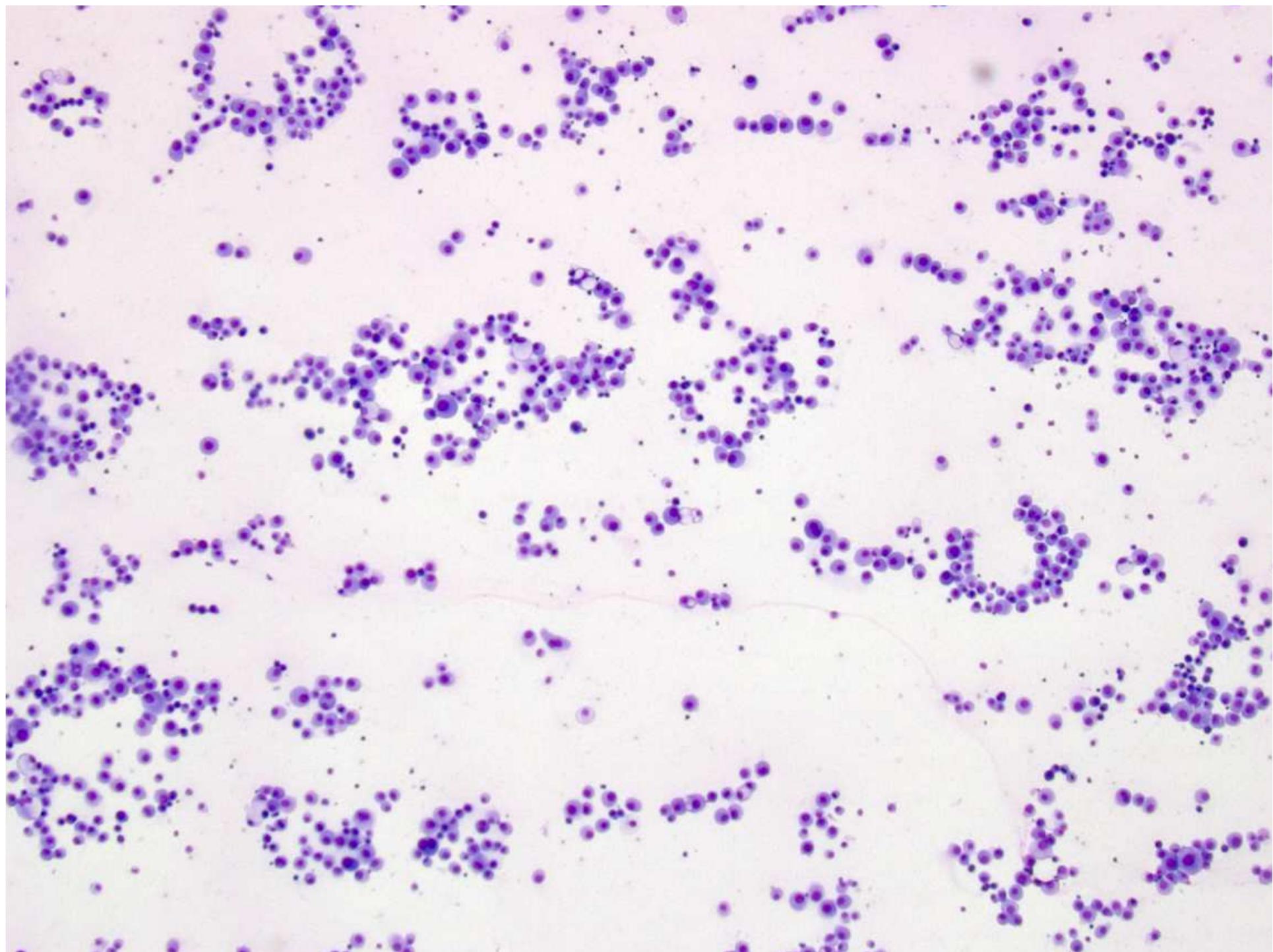


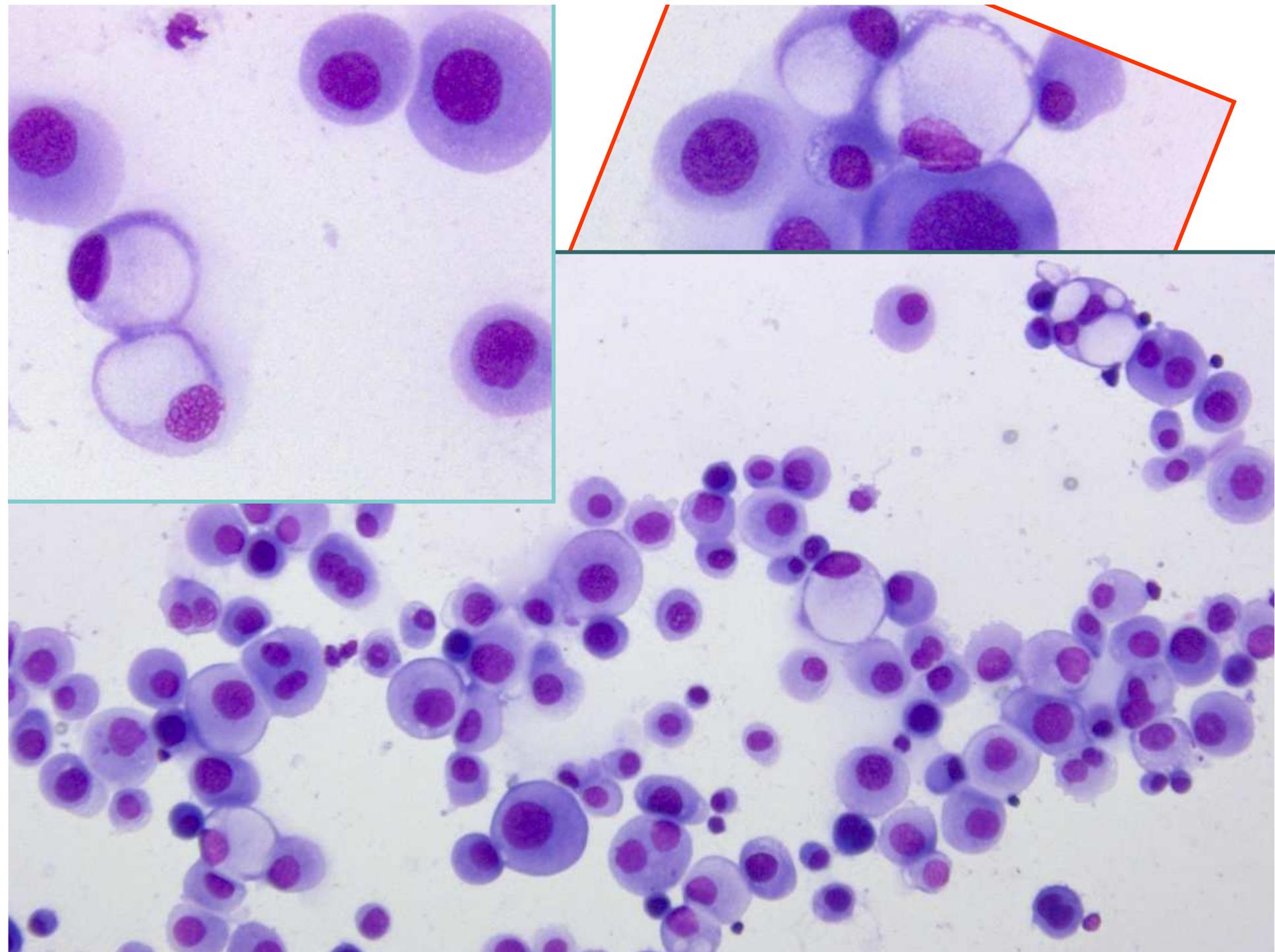
Uomo, 69 anni ascite

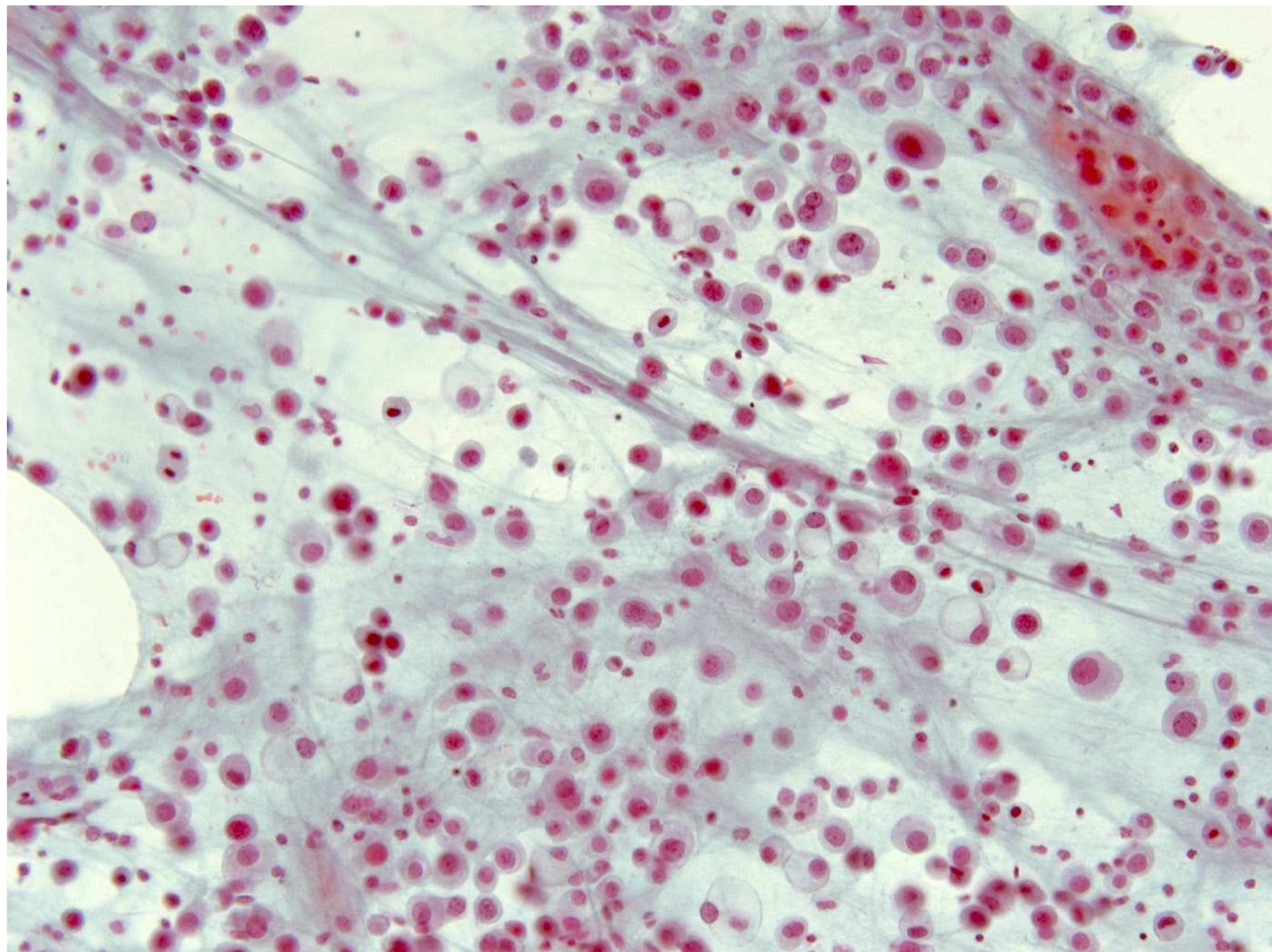
**Carcinoma della vescica il 9/2010,
ascite da 6 settimane, atipica**

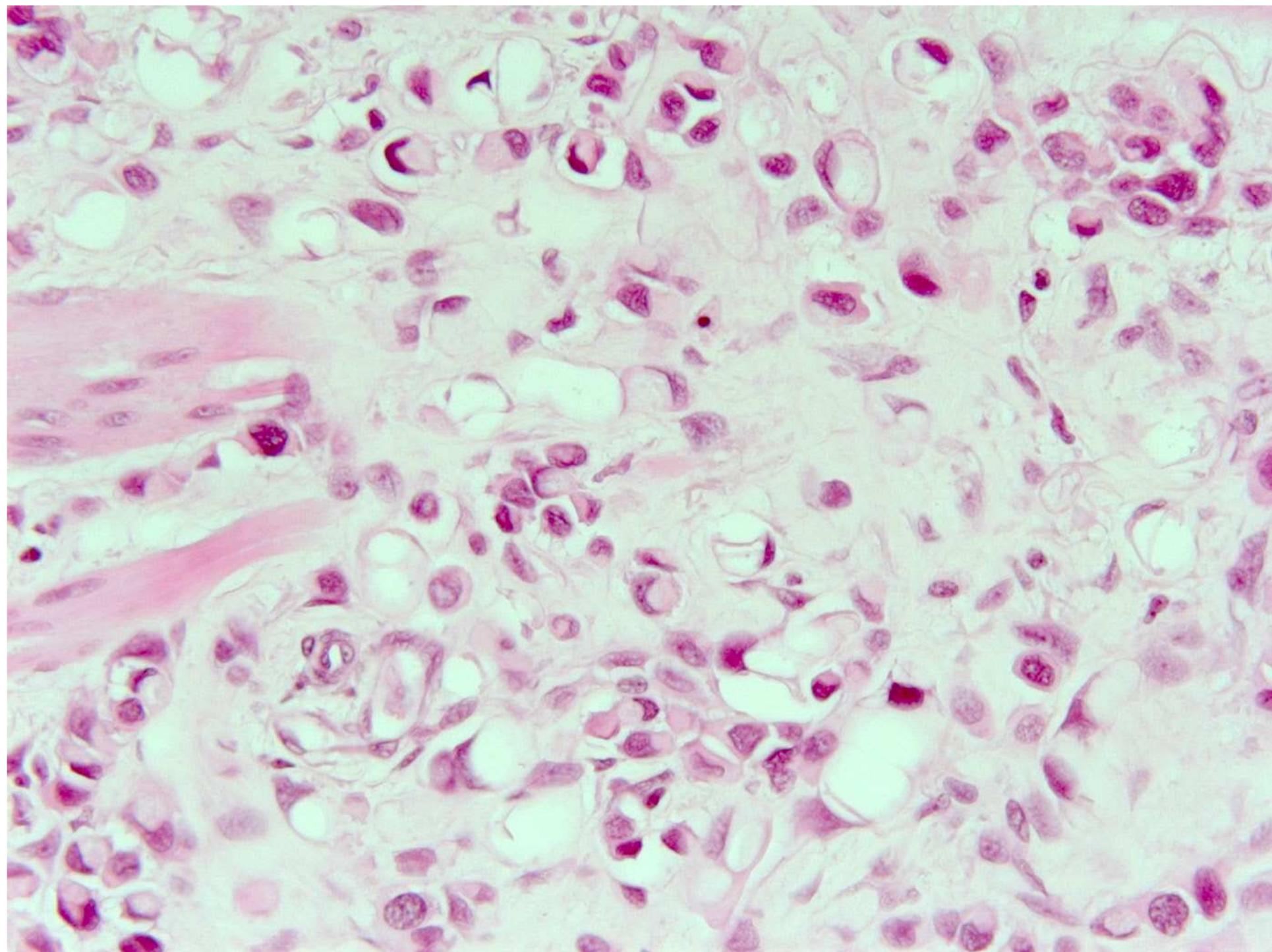
42 ml, giallo torbido

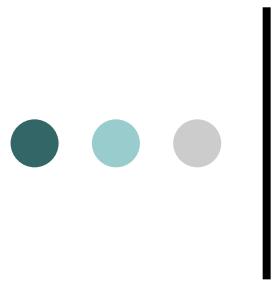












Diagnosi:

presenza di cellule maligne;
aspetto compatibile con carcinoma
vescicale ad anello con castone

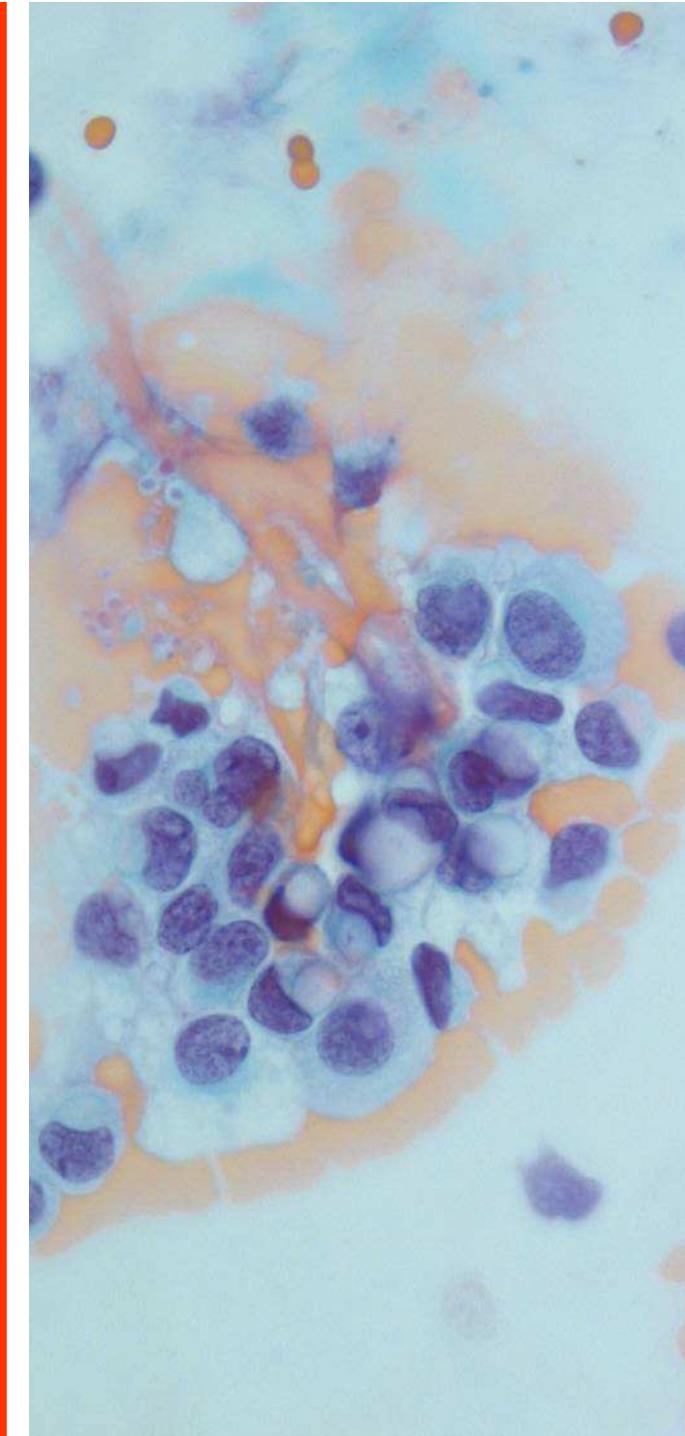
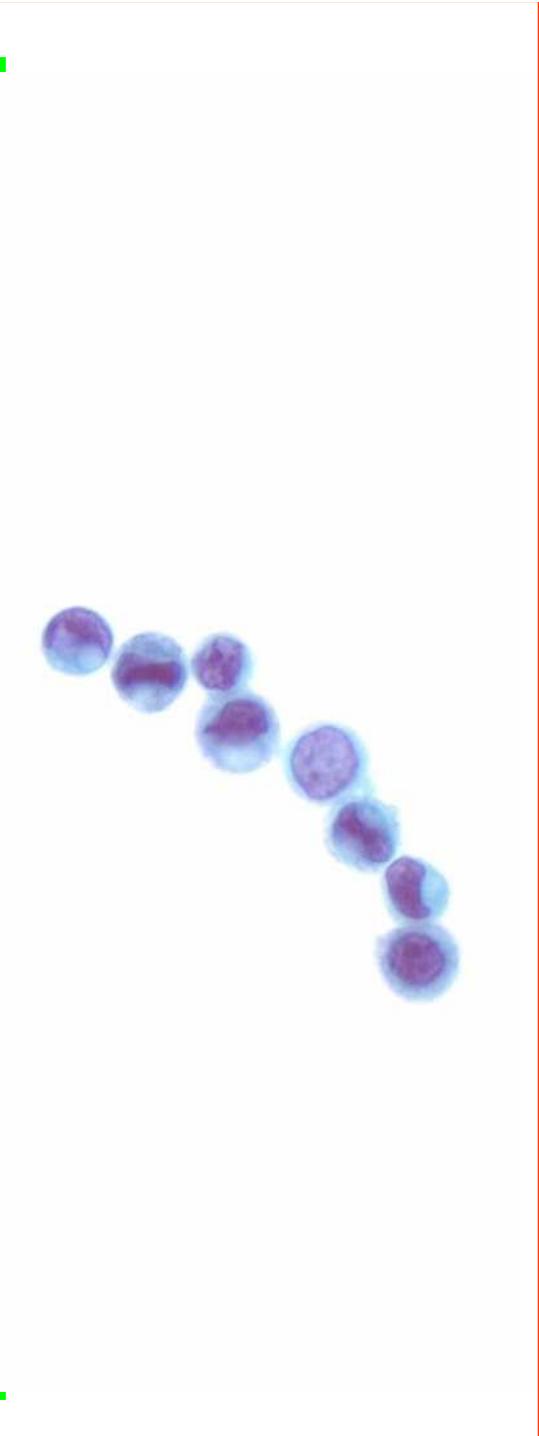
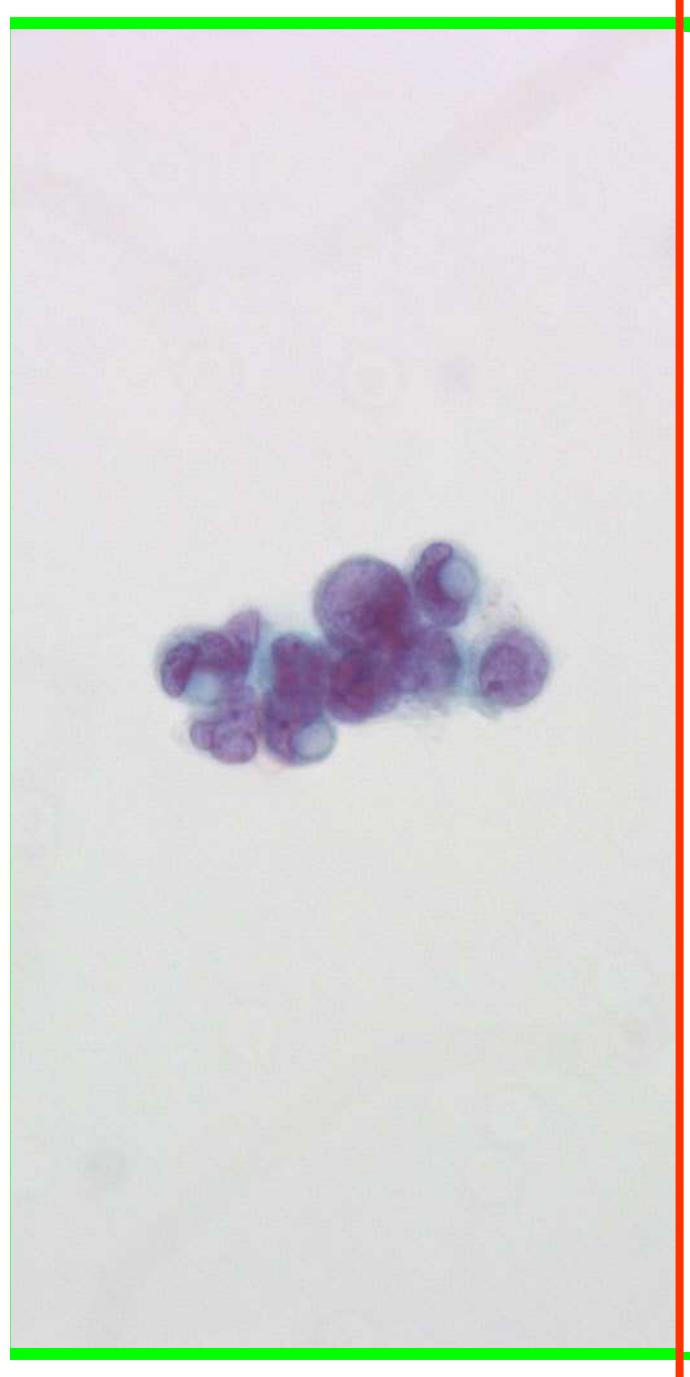
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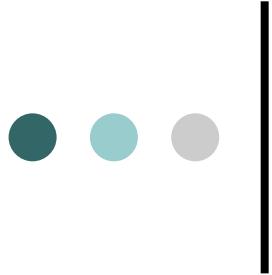


Donna, 71 anni versamento pericardico

Dispnea, versamento pericardico
e pleurico bilaterale; precedente K
mammella dx circa 15 anni fa

100 ml, lattescente





Diagnosi:

**presenza di cellule maligne;
aspetto compatibile con carcinoma
lobulare della mammella**



Nuovo ruolo della citologia nelle malattie neoplastiche con versamento positivo

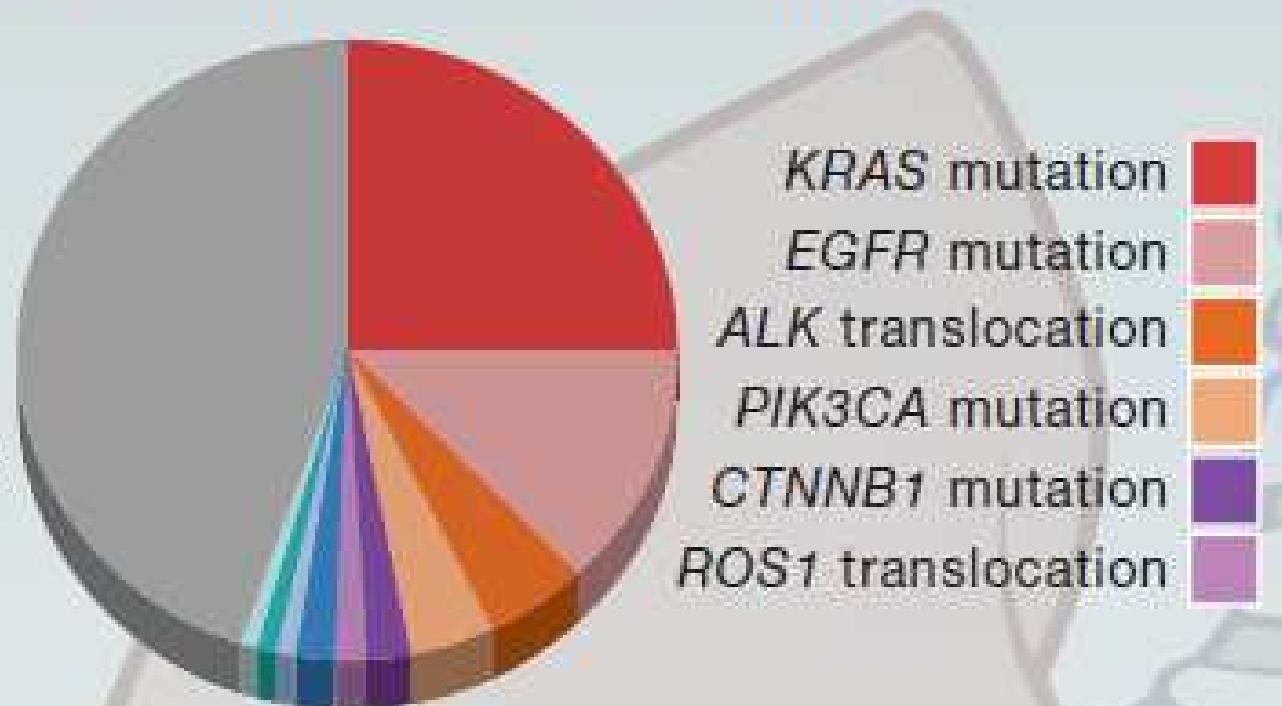
**Ricerca di mutazioni
per terapie mirate**

Adenocarcinoma – molecular features



Mutation spectrum in Adenocarcinoma

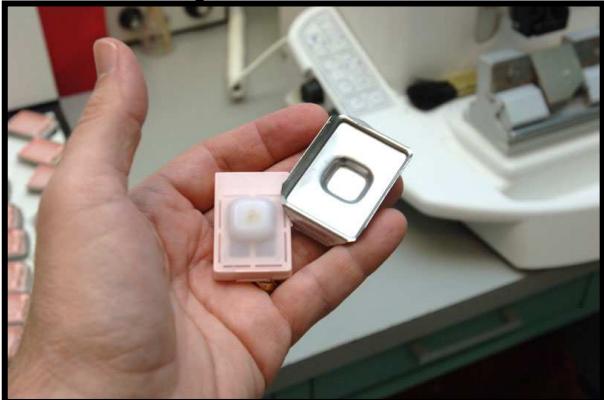
- BRAF mutation
- NRAS mutation
- HER2 mutation
- RET translocation
- OTHER



Mutations in *TP53* and *STK11/LKB1* are common occurrences, not included in pie chart due to high overlap with other mutations



Paraffin blocks (Histology)



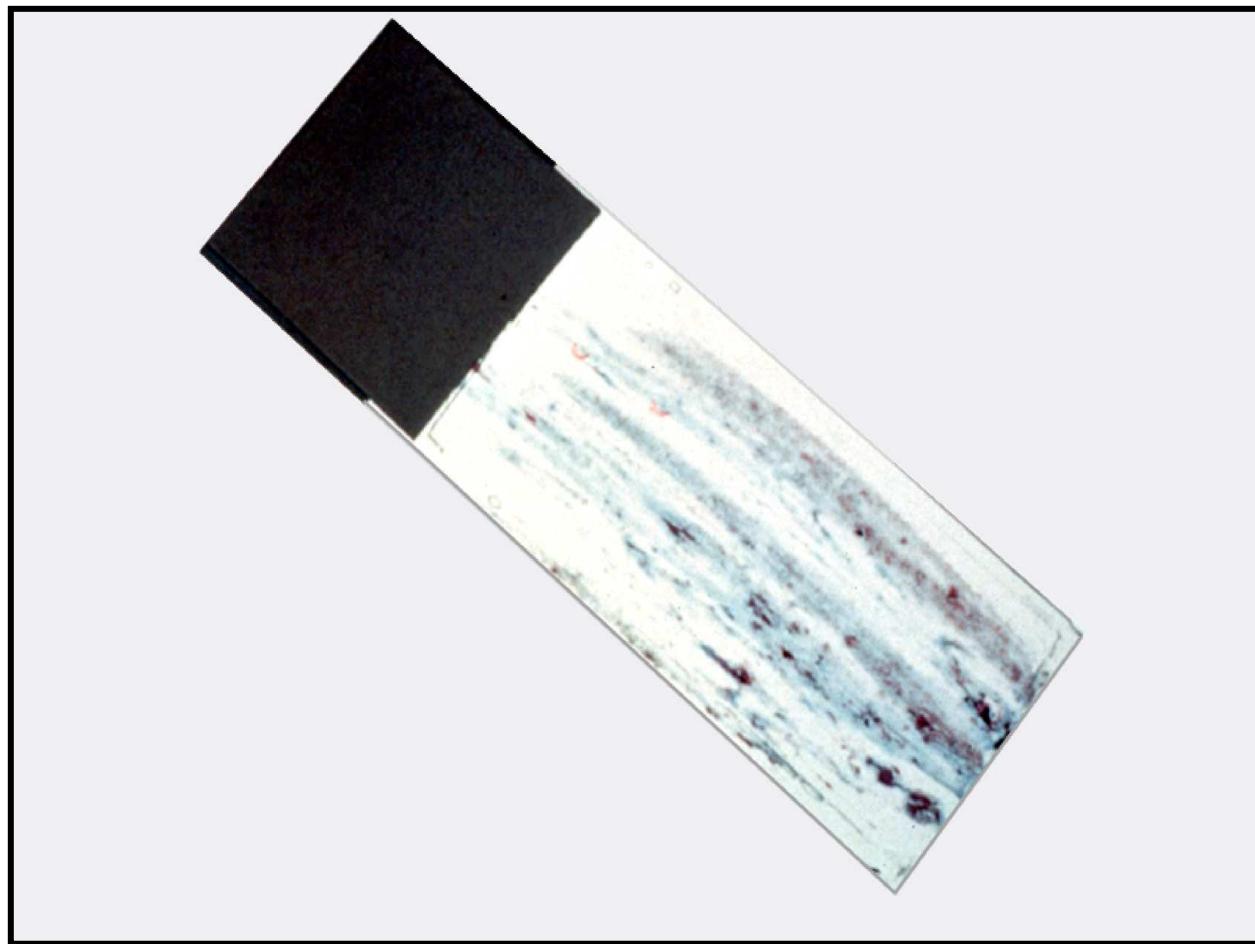
H&E, PAS, B-Alcian

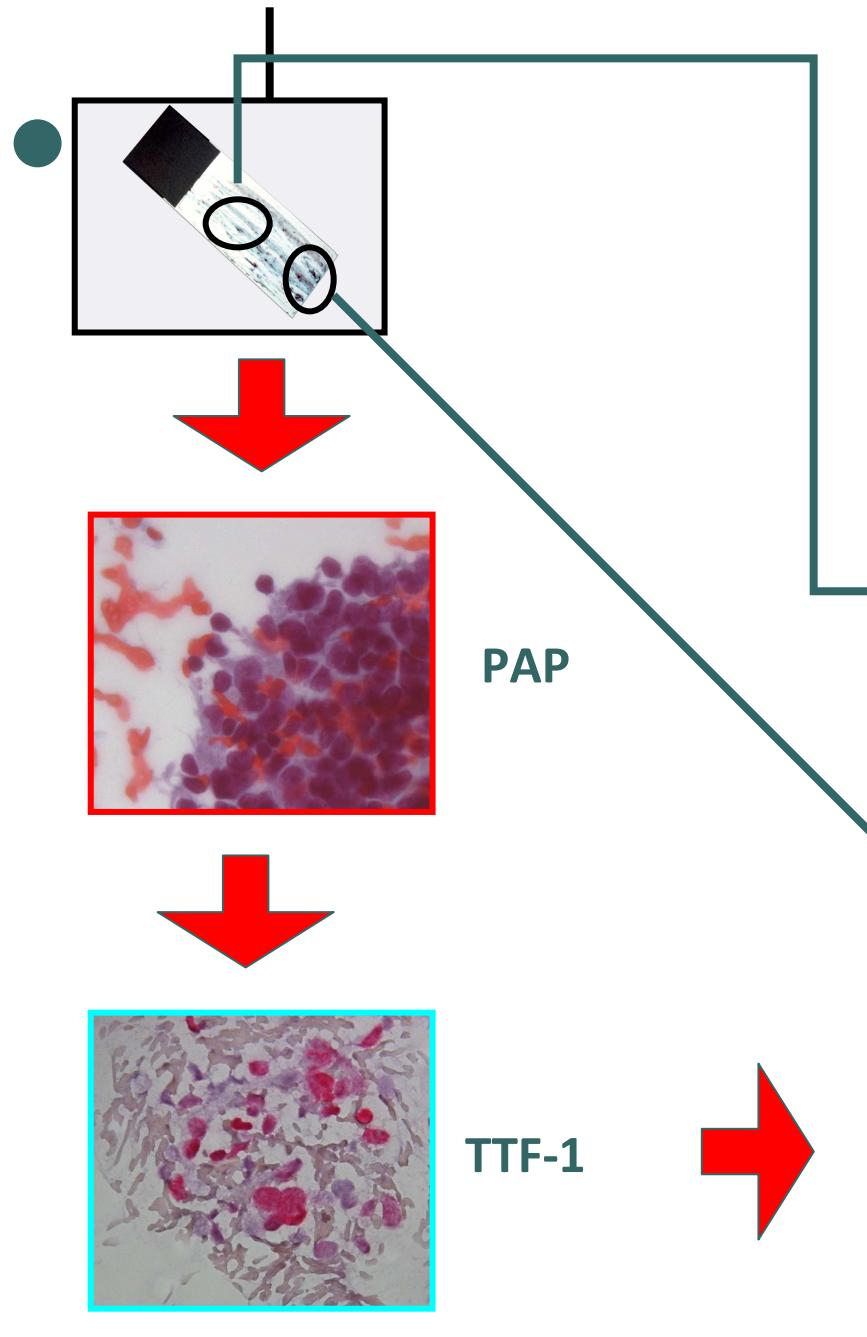
Immunostains

Molecular analysis
(EGFR, etc..)

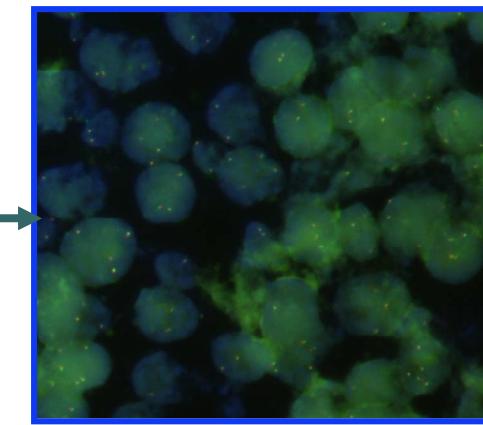
FISH (ALK)



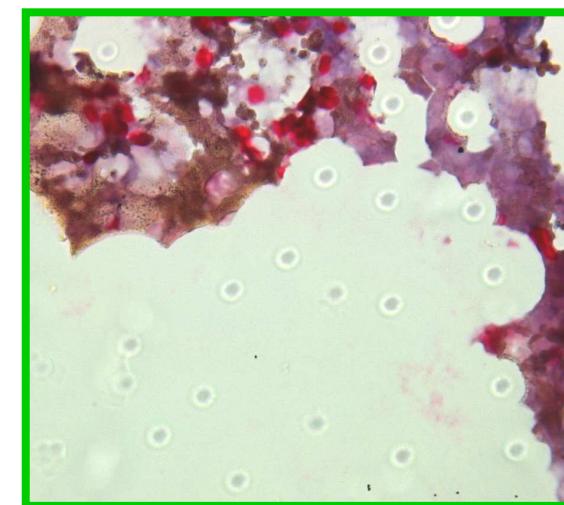




Cytological slides (lung tumors)



FISH
for
ALK



Laser
Dissection
for
EGFR



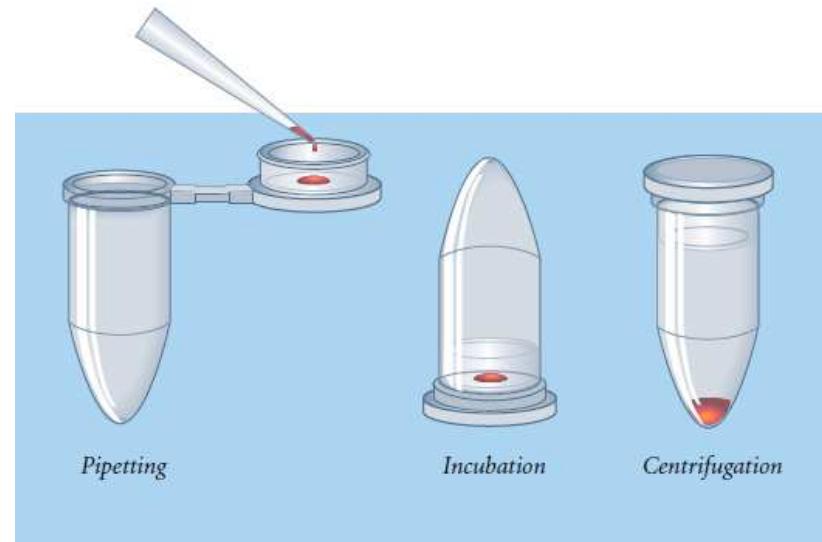
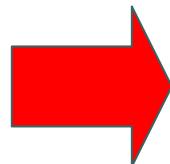
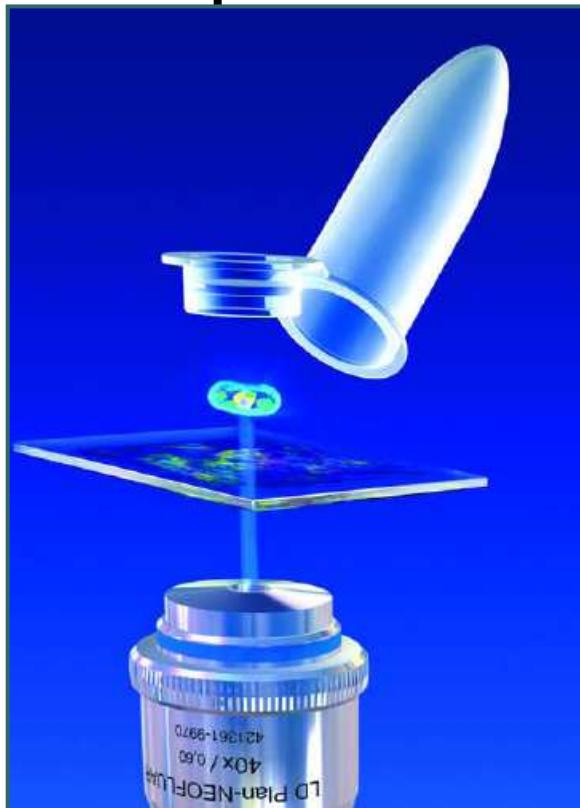
Techniques to obtain DNA

Laser microdissection



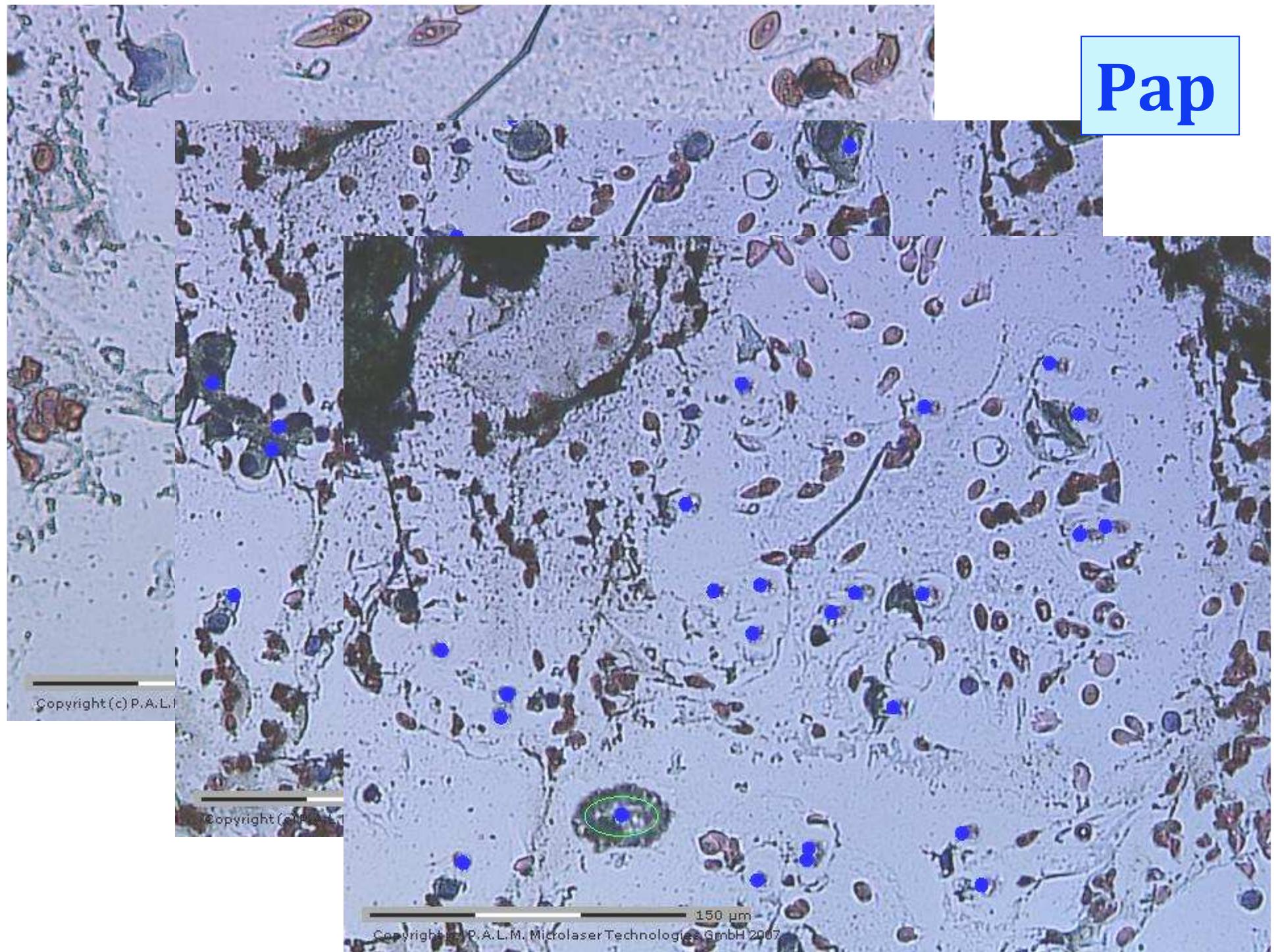


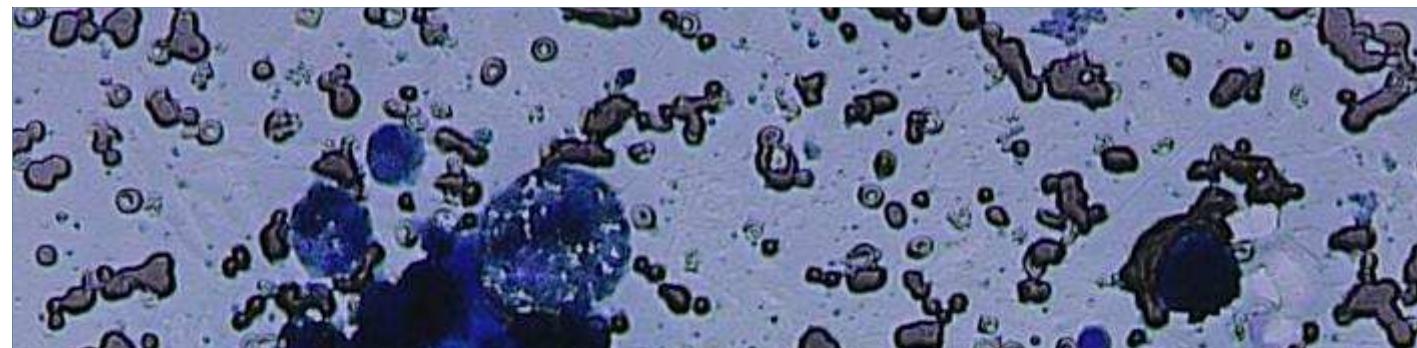
Laser microdissection



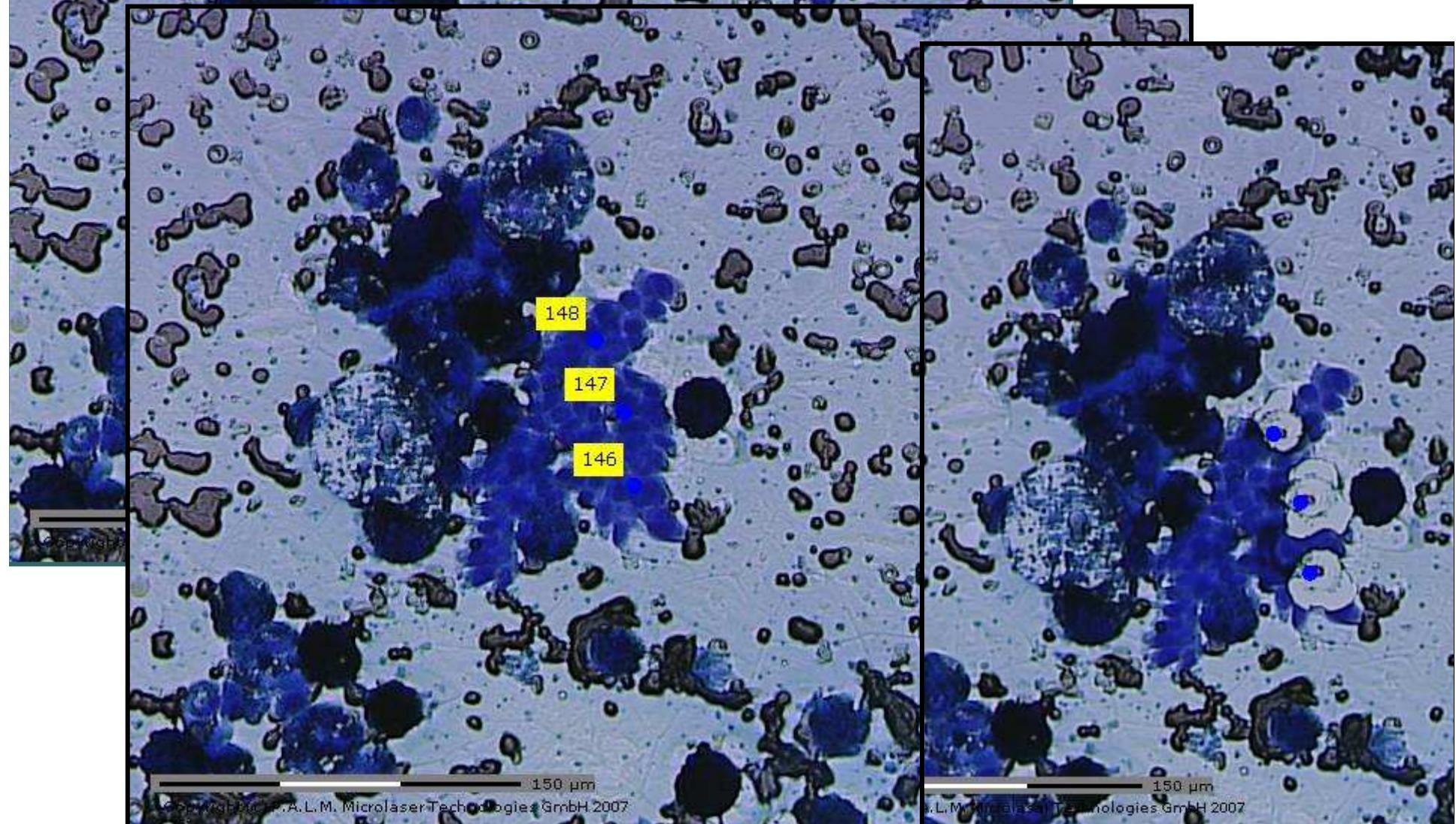
If you have cells for diagnosis, then you have DNA!

Pap

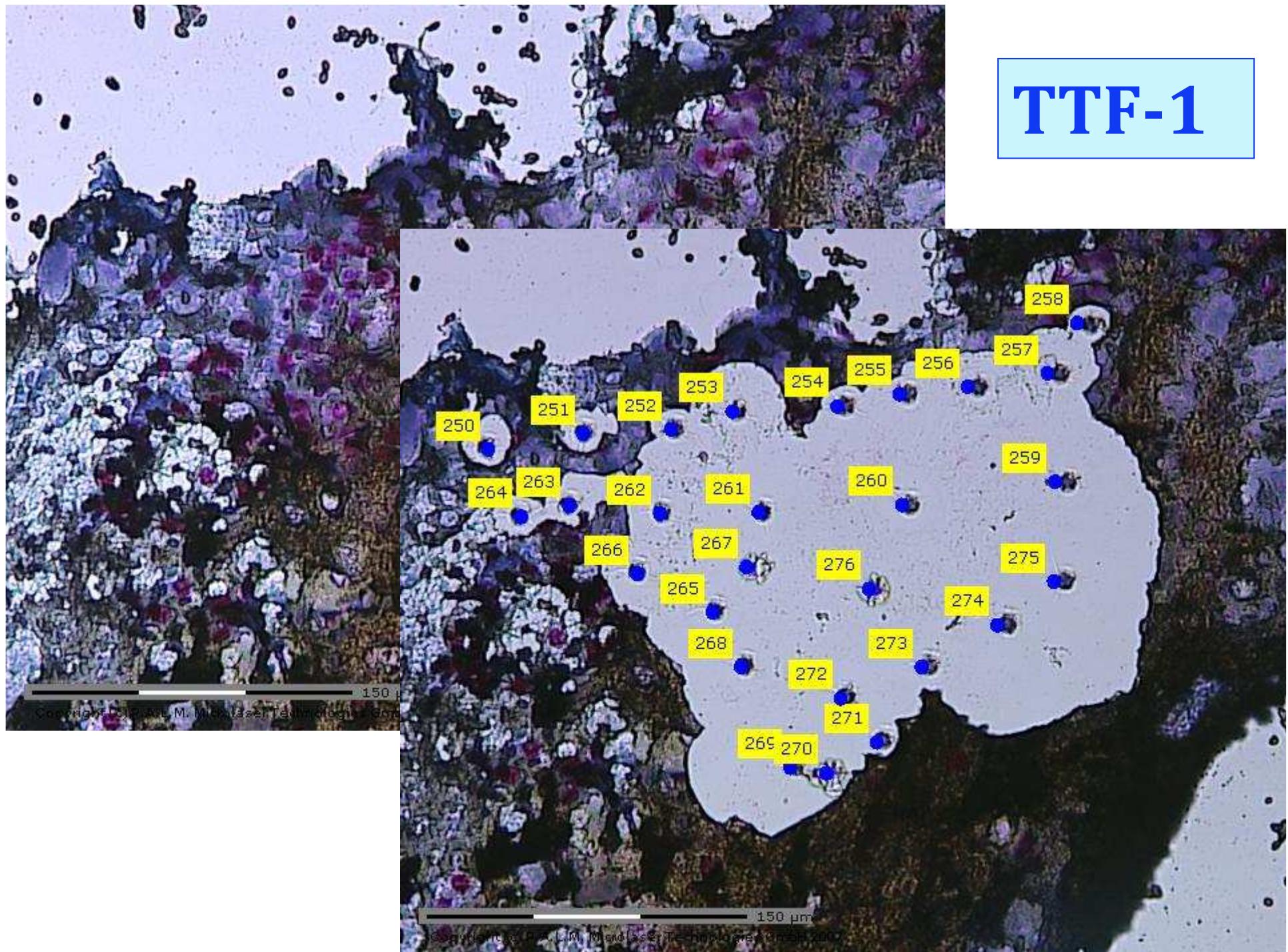




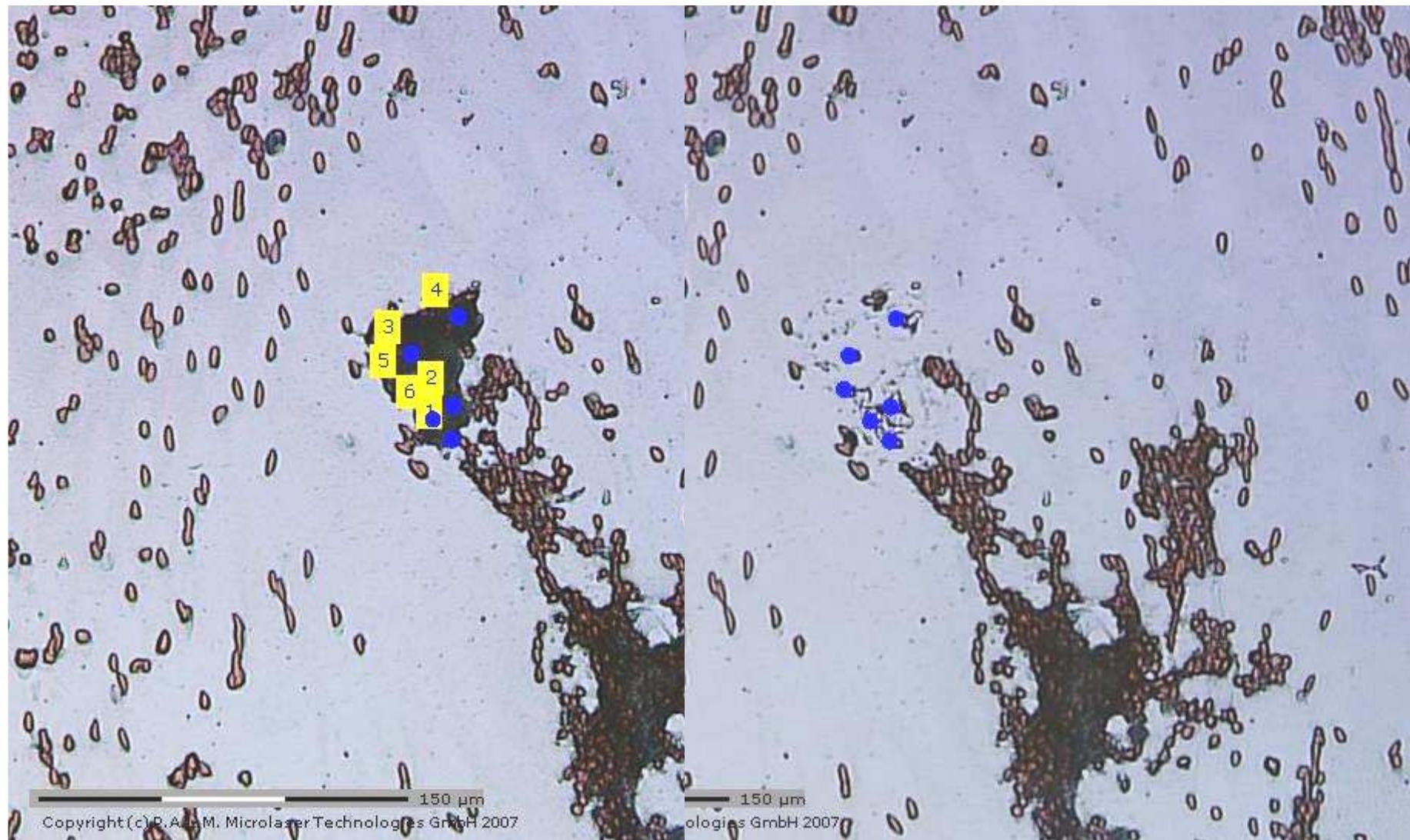
Giemsa



TTF-1



How many cells ?





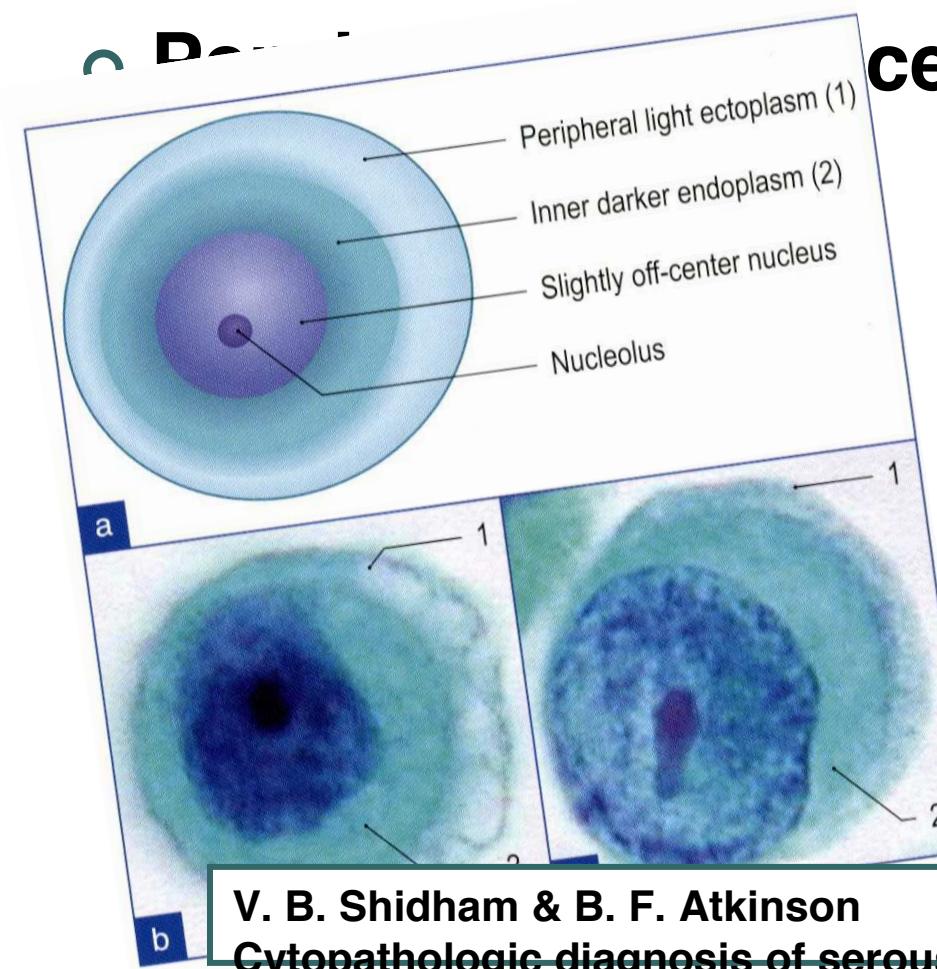
Take home message

- Non dare mai nulla per scontato.....
- Nei casi poco chiari....

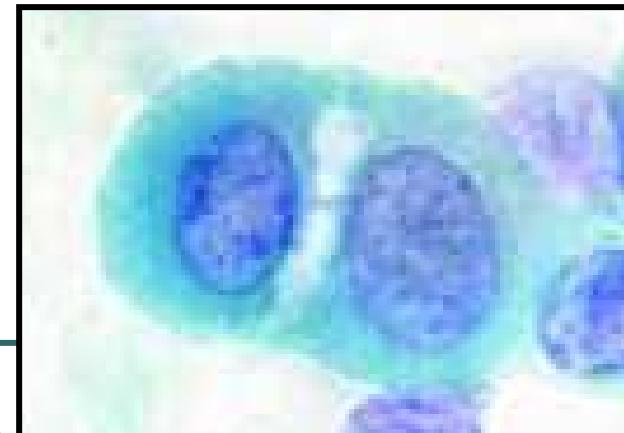
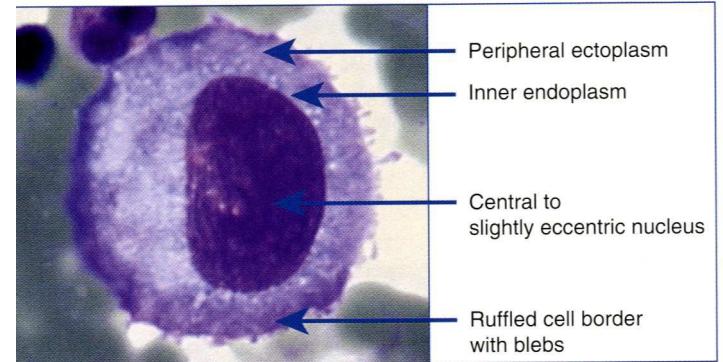




Take home message



cellule mesoteliali...

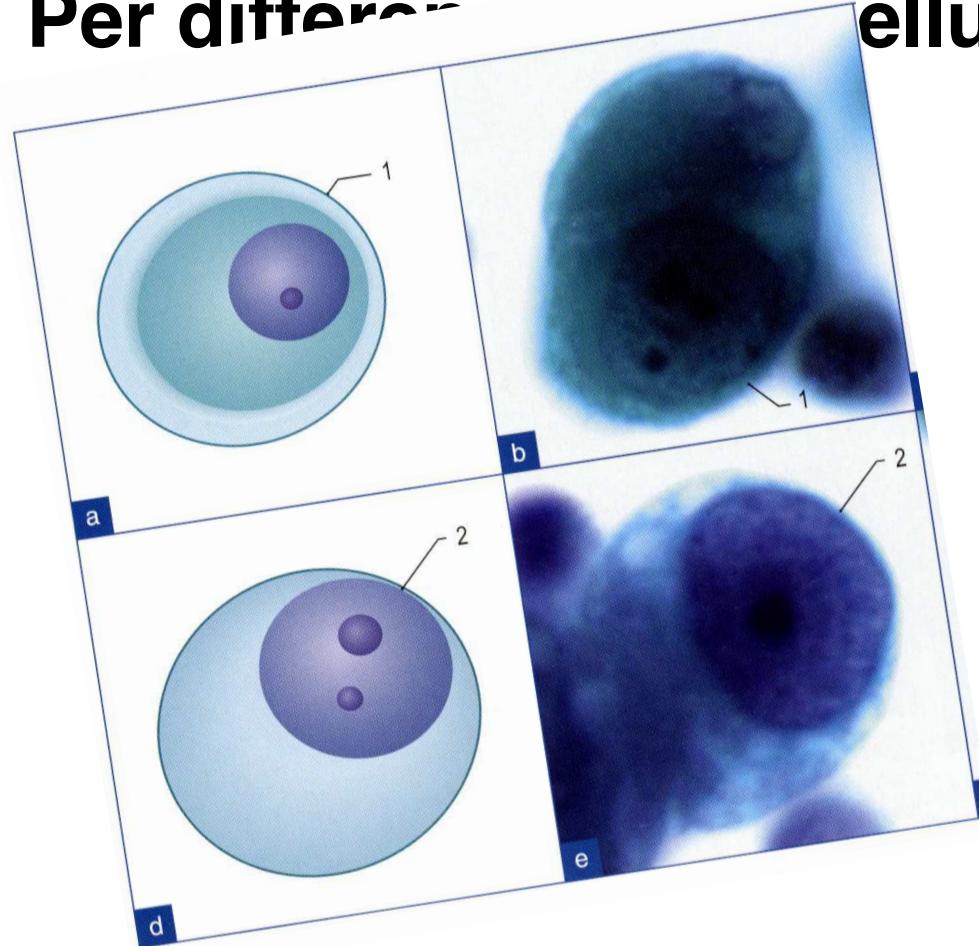




Take home message

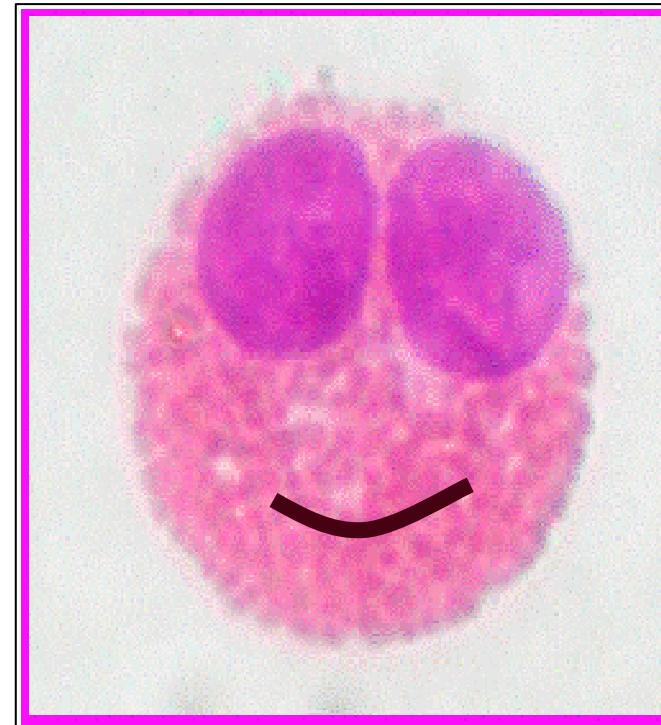
- Per differenza

cellule maligne



mesoteliali

maligne



....grazie dell'attenzione