

TALE OF 2 FUNGI ON CYTOLOGY

A decorative graphic consisting of several horizontal lines of varying lengths and colors (teal and white) extending from the left side of the slide towards the right.

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CASE 1



HISTORY :

- 30 years, Female.
- Newly diagnosed SEROPOSITIVE patient
- Cough, breathlessness, fever since 15 days

INVESTIGATION :

HRCT Thorax (done outside) : s/o atypical organizing pneumonia.

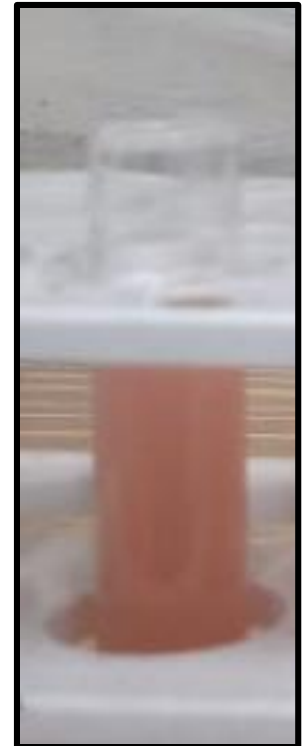
CLINICAL DIAGNOSIS :

Seropositive patient with ? TB with ? Pneumocystis
Pneumonia with ? Pulmonary thromboembolism

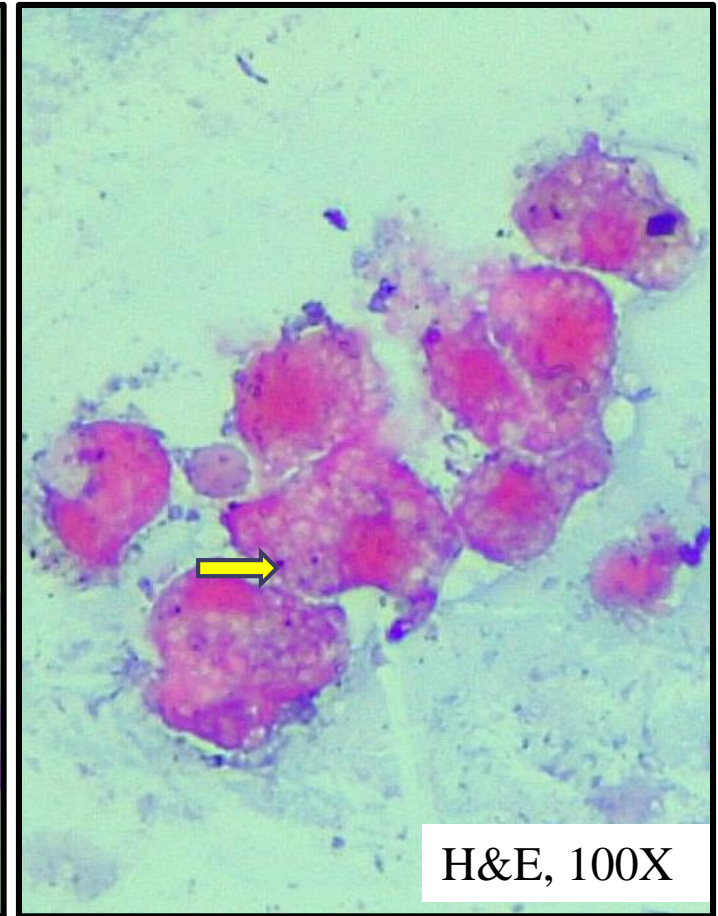
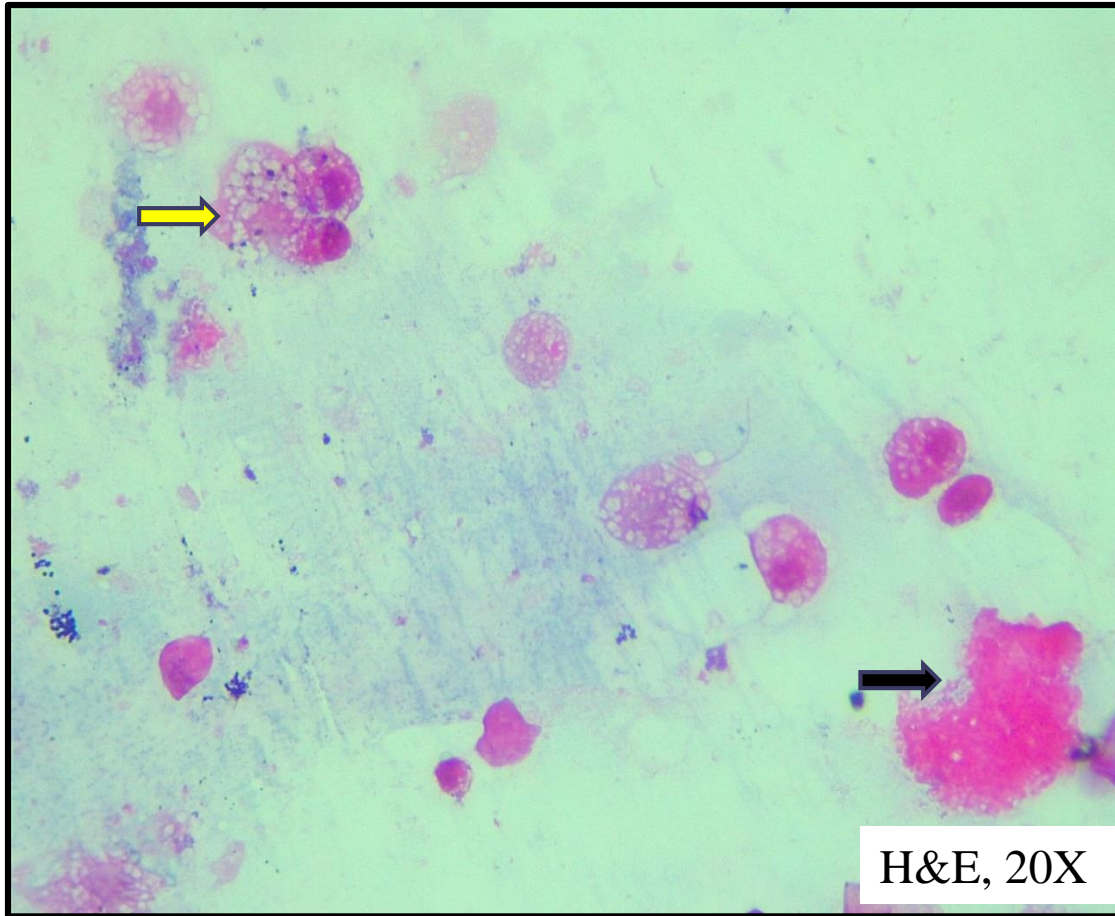
SPECIMEN:

Bronchoalveolar Lavage specimen for cytology.

- Quantity : approximately 2 ml
- Physical appearance : Slightly turbid, frothy
- Colour : Reddish



MICROSCOPY :



DIFFERENTIAL DIAGNOSIS

1. PNEUMOCYSTIS JIROVECI :

- **GMS Stain** : Central dark dot-like density
- Lack budding

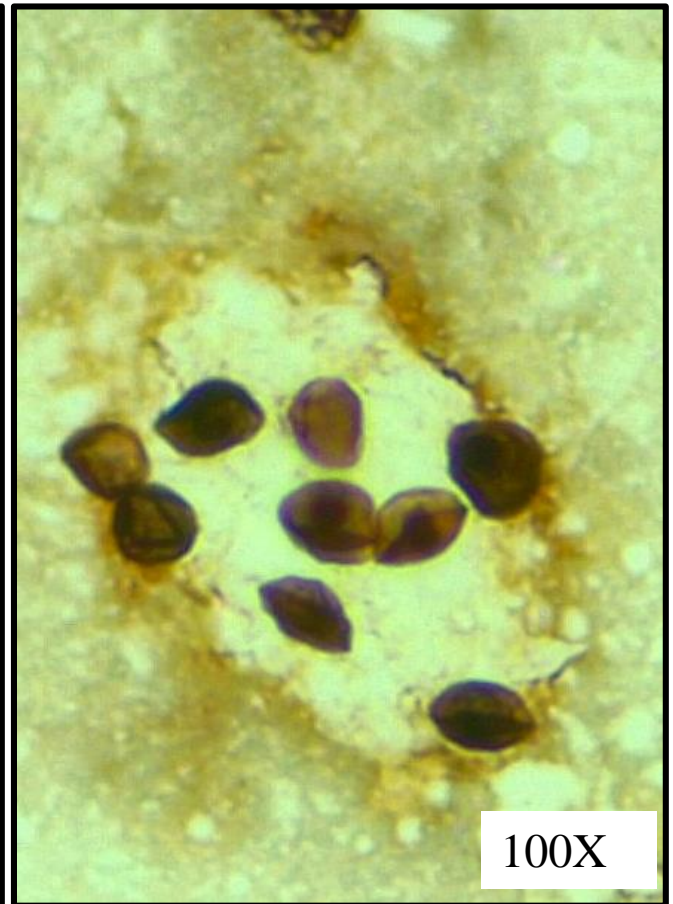
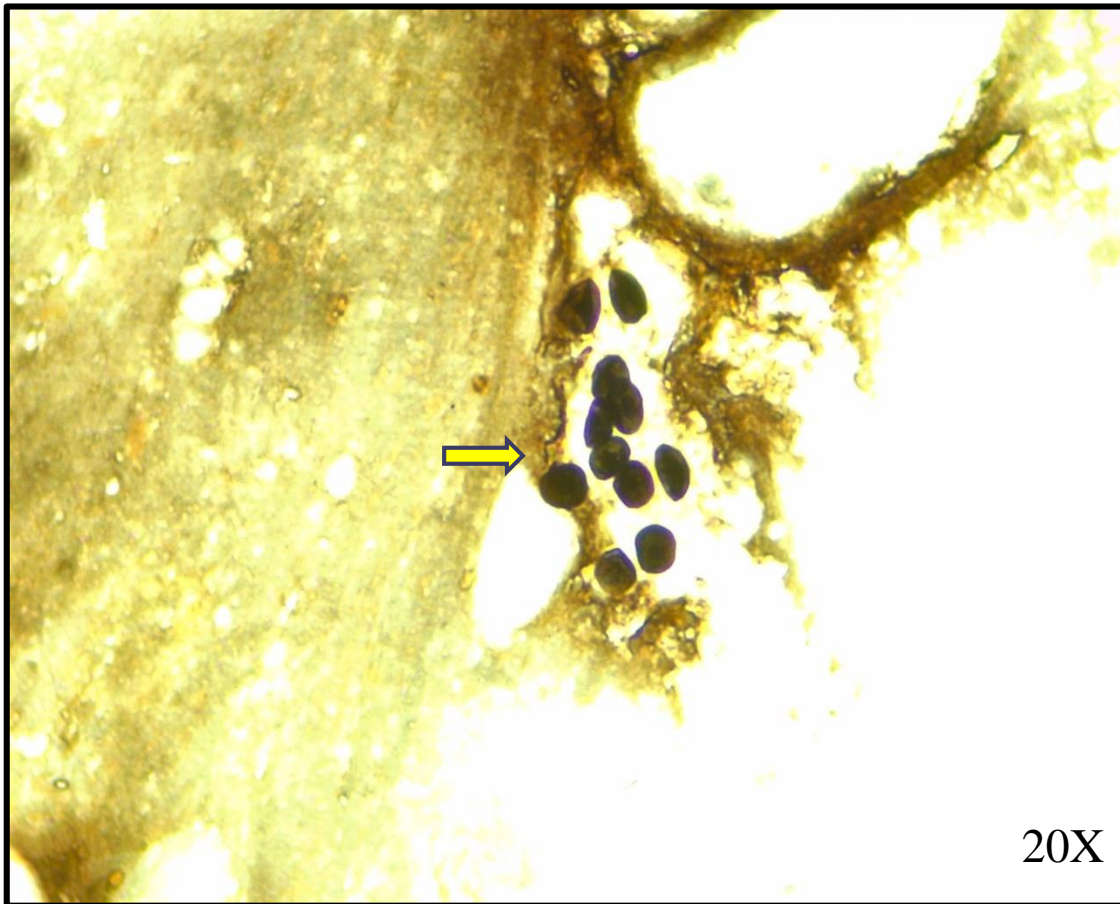
2. ALVEOLAR PROTEINOSIS:

- **GMS stain** : Negative
- PAS stain positive

Thus, **SPECIAL STAIN** was done.

GMS stain - Cyst wall : stained

Shape : crescent/folded spheres with
CENTRAL DARK DOT-LIKE DENSITY.



FINAL DIAGNOSIS

PNEUMOCYSTIS JIROVECHII

CASE 2



HISTORY :

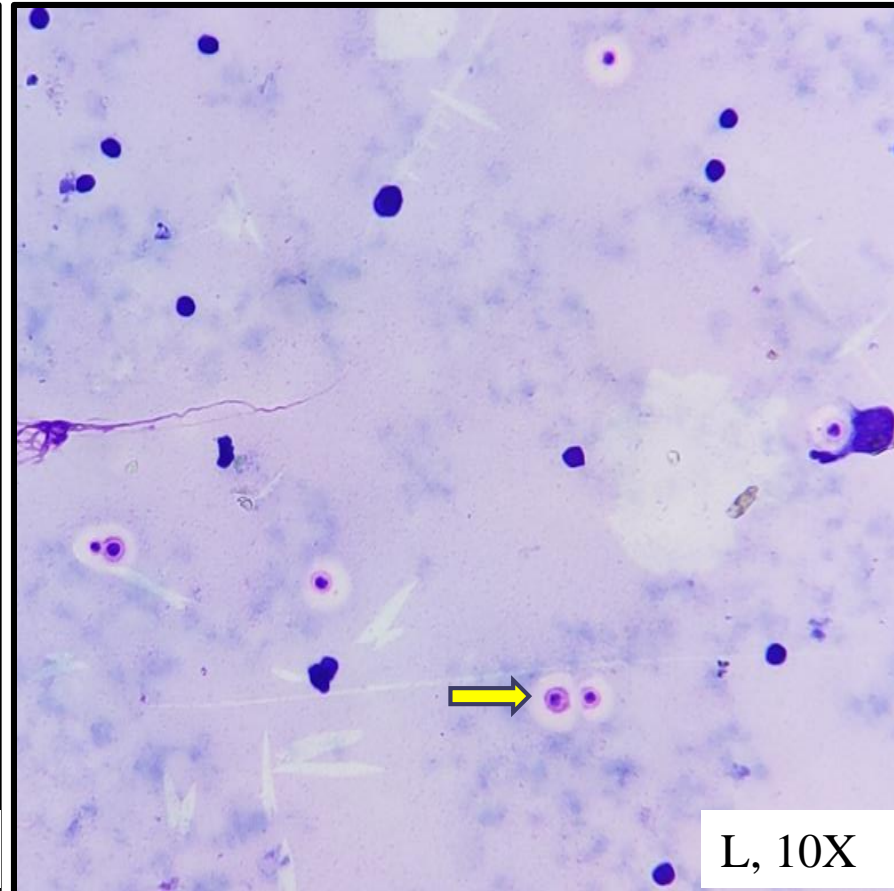
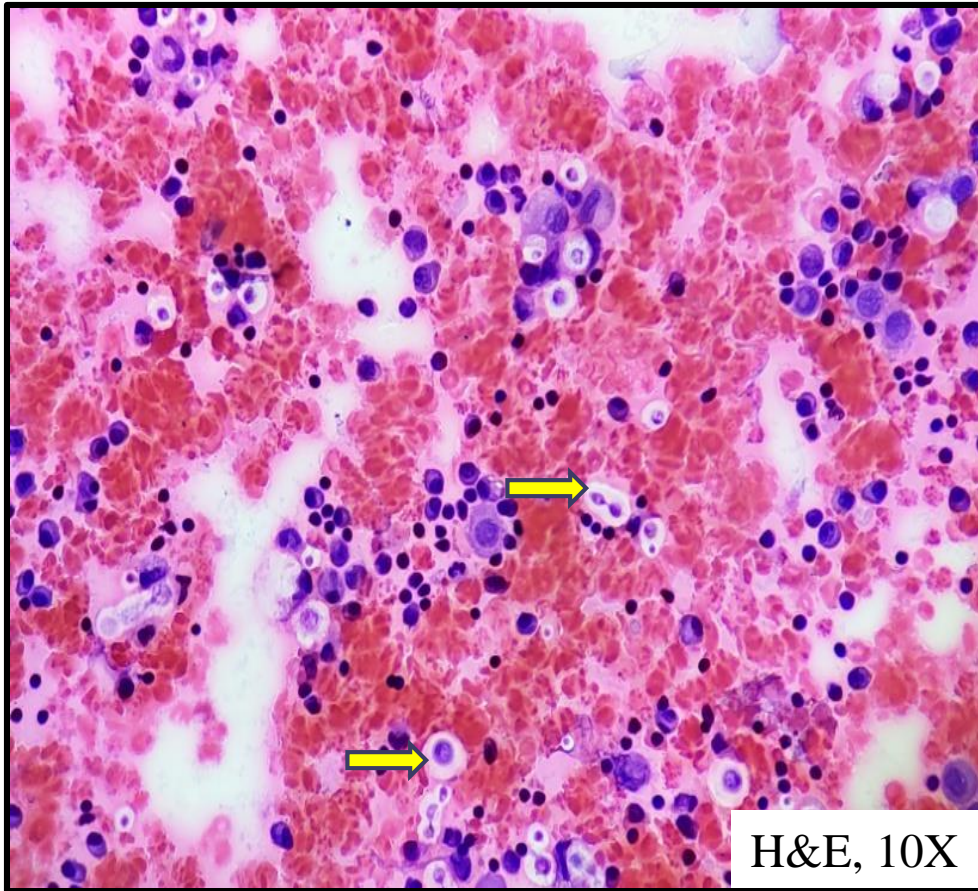
- 75 years/Male
- Seronegative
- k/c/o abdominal and pulmonary Koch's, on AKT
- Now presented with bilateral pleural effusion.

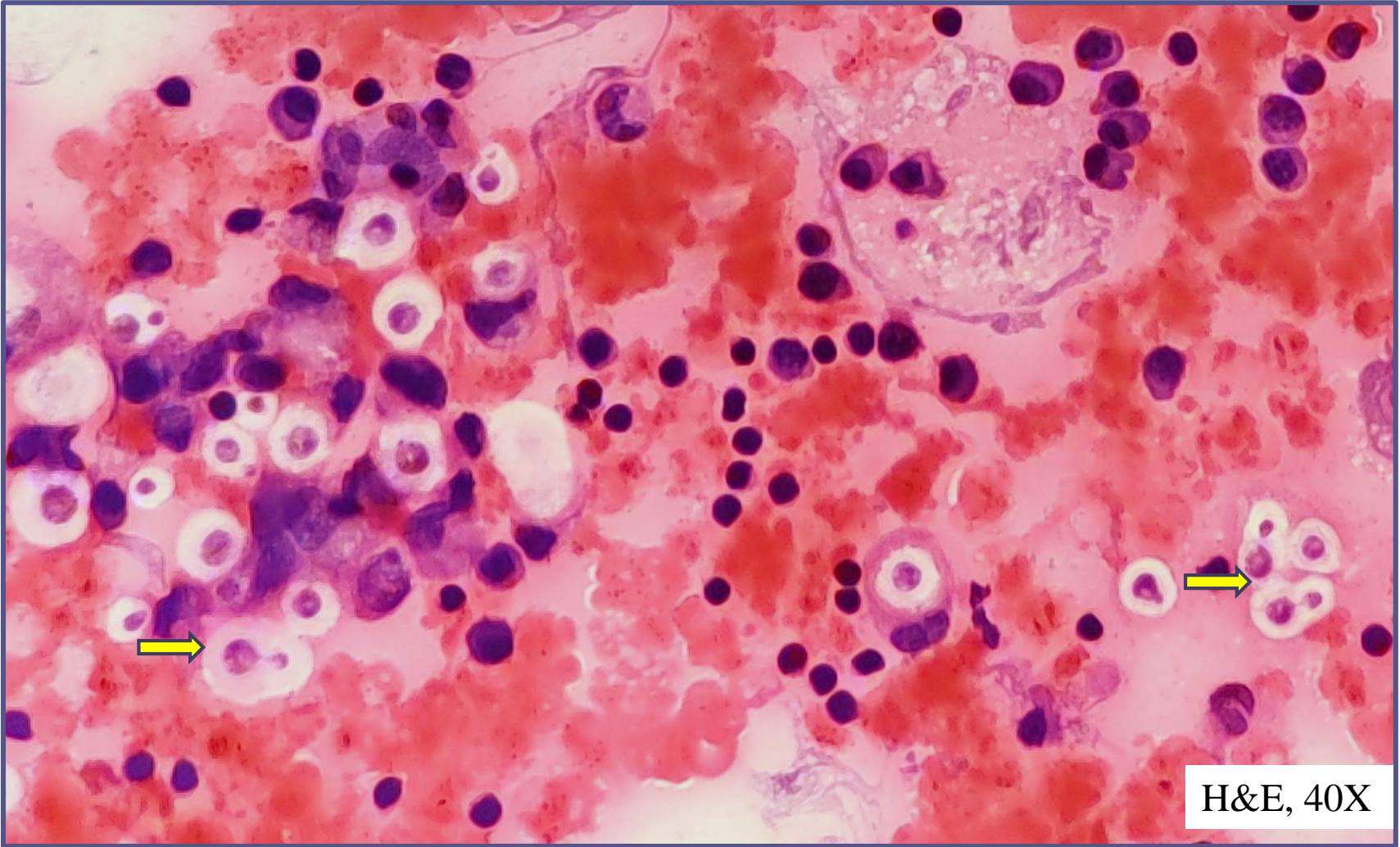
SPECIMEN :

- 20 ml **Pleural fluid** for cytology.
- Physical appearance : Reddish yellow fluid

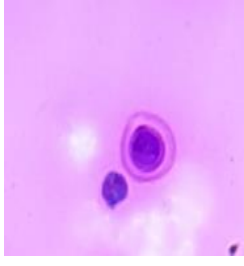
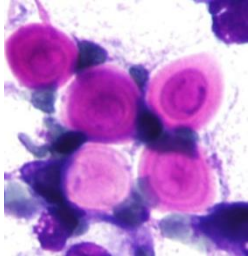
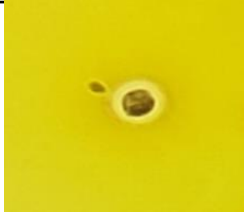


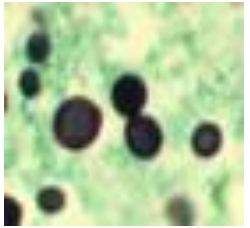
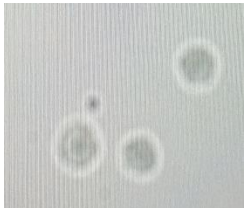
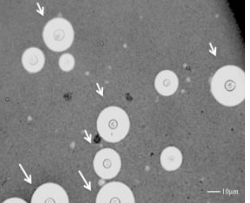
- Pleural fluid routine analysis:
 - Proteins (raised) = 4.10gms/dl,
 - Glucose (normal) = 67mg/dl,
 - ADA (normal) = 10.01U/L.

MICROSCOPY :



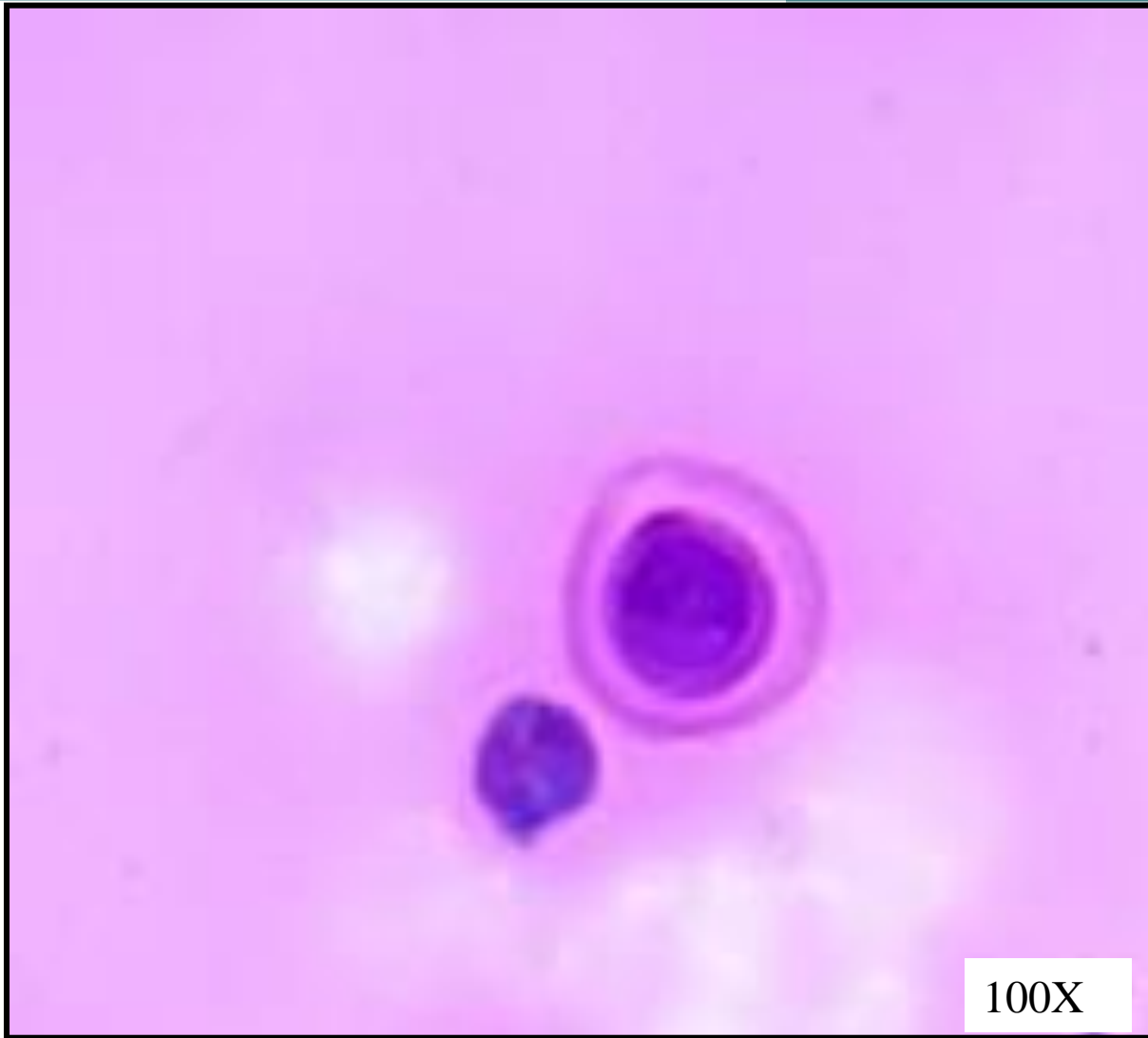


DIFFERENTIAL DIAGNOSIS :

STAIN	BLASTOMYCES (8-20 microns)	CRYPTOCOCCUS (5-20 microns)
PAS	+++; refractile cell wall 	+++; capsule 
Mucicarmine	+; refractile cell wall 	+++; capsule 
GMS	+; refractile cell wall, Broad based budding 	+; Narrow based budding 
India ink	- 	+ 

SPECIAL STAINS

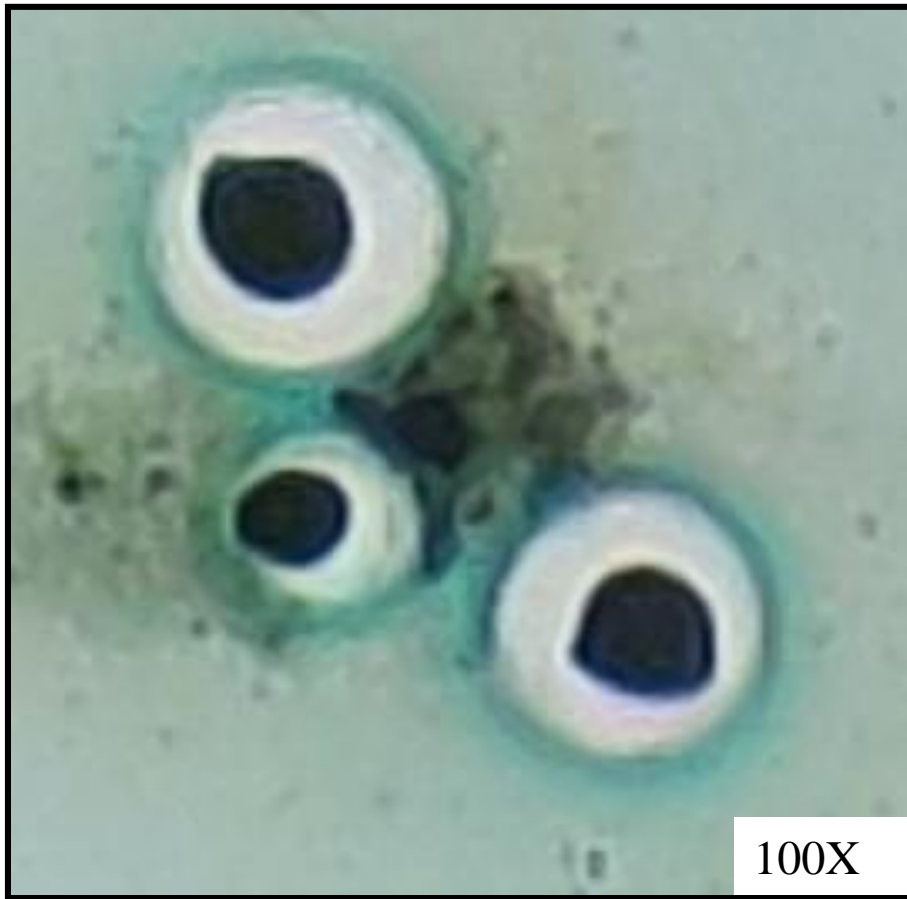




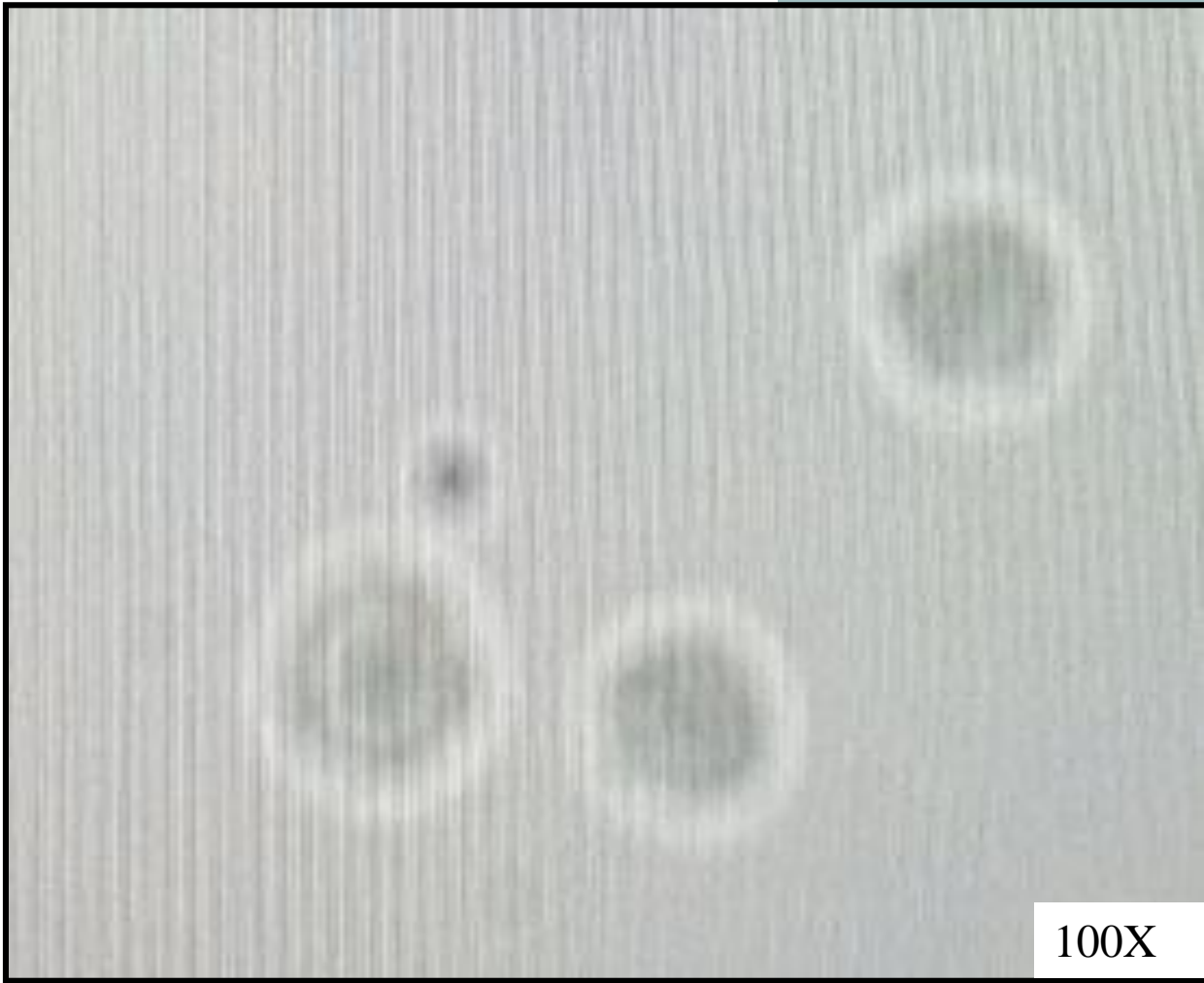
PAS stain



Mucicarmine stain



GMS stain



India ink stain

FINAL DIAGNOSIS

BLASTOMYCOSIS

CONCLUSION :

In modern era, cytology still remains a vital diagnostic tool for fungal infections and its value should not be overlooked.

References:

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2. Badiee P. Evaluation of human body fluids for the diagnosis of fungal infections. *Biomed Res Int.* 2013;2013:698325. doi: 10.1155/2013/698325. Epub 2013 Aug 1. PMID: 23984401; PMCID: PMC3747334.
3. McClain CM, Van Horn GT, Chappell JD, Stratton CW. *Coccidioides*, *cryptococcus*, or *Blastomyces*? A diagnostic dilemma encountered during frozen section evaluation. *Pediatric and Developmental Pathology.* 2012 Jan;15(1):71-5.
4. Yan L, Rohra P, Cheng L, Gattuso P. Pleural Effusion in Pulmonary and Extrapulmonary Blastomycosis. *Acta Cytol.* 2020;64(3):241-247. doi: 10.1159/000500973. Epub 2019 Jul 2. PMID: 31266012.
5. Davies SF, Sarosi GA. Epidemiological and clinical features of pulmonary blastomycosis. *Semin Respir Infect* 1997;12:206-18



THANK YOU !