“Pretty Sure I Have Something Very Not Normal Here.”

A case study based on a BAL slide

William S. Middleton VA Hospital

Madison, WI

Patient Presentation

- 65 year old male from rural WI
- History of insulin-dependent DMII and severe Rheumatoid Arthritis
- Long-term use of methotrexate and adalimumab (Humira)

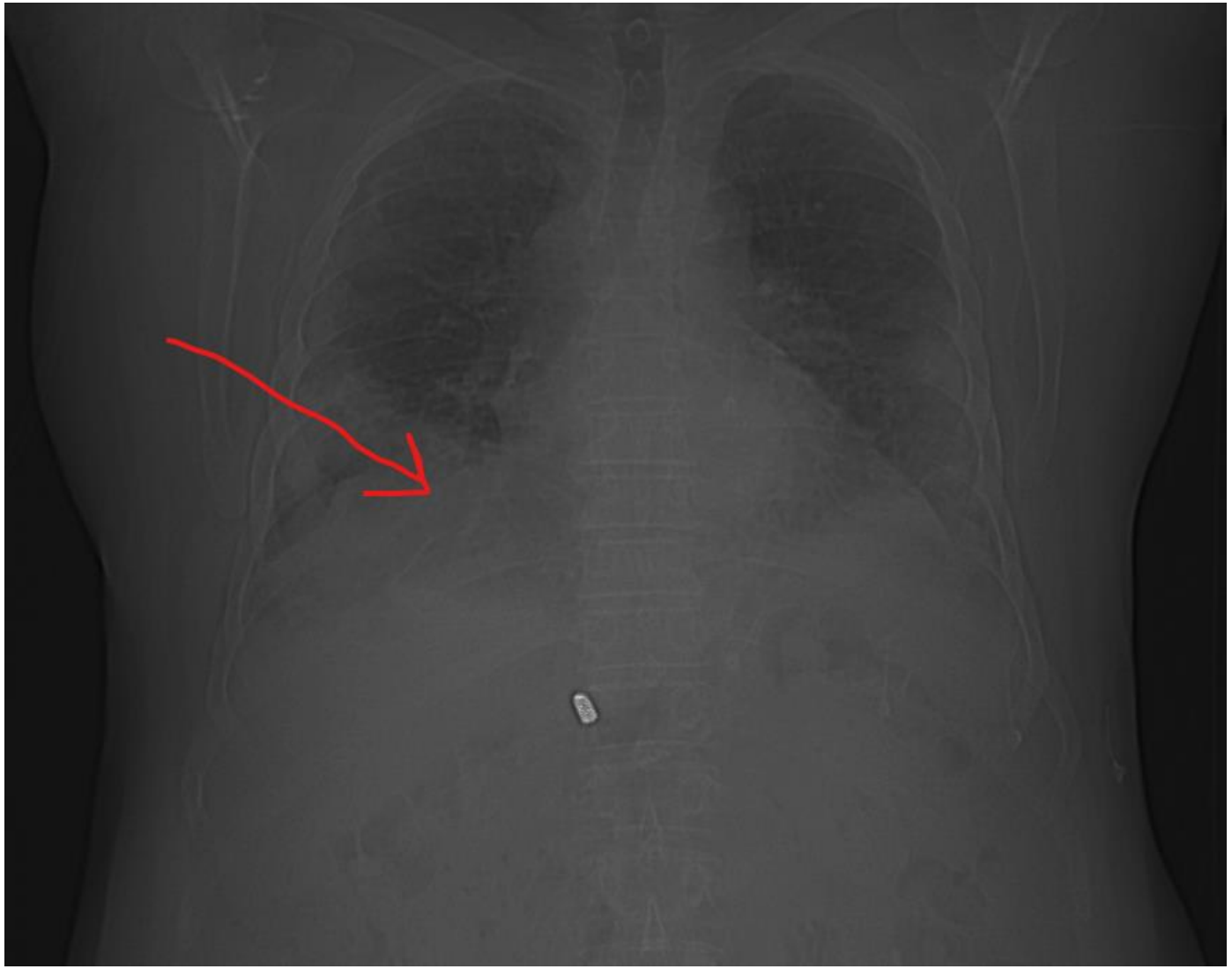
- 10 days of progressive dyspnea and chest pain
- New hypoxia requiring increased CPAP use
- Productive cough that is worse with exertion
- “Velcro-like” crackles at bilateral lung bases

Relevant Laboratory Results

- Procalcitonin = Negative
- Flu A/B, RSV, COVID = Not Detected
- D Dimer = 1131 ng/mL (ref: 0-499 ng/mL)
- Sed Rate = 50 mm/Hr (ref: 0-15 mm/Hr)
- CRP = 10.52 mg/dL (ref: <1.0 mg/dL)

Pulmonary CT

Ground glass opacities, suggestive of organized pneumonia



Patient taken to OR the following day. A lung biopsy was collected.

The sample was insufficient for plating, so only a CM broth was set up for this specimen:

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CULTURE RESULTS:  1. VIRIDANS STREPTOCOCCI - Quantity: BROTH MEDIA CONTAINS

                  2. DIPHTHEROIDS - Quantity: BROTH MEDIA CONTAINS
                     Comment: UNABLE TO FURTHER ID.
                              NO FURTHER TESTING PERFORMED.
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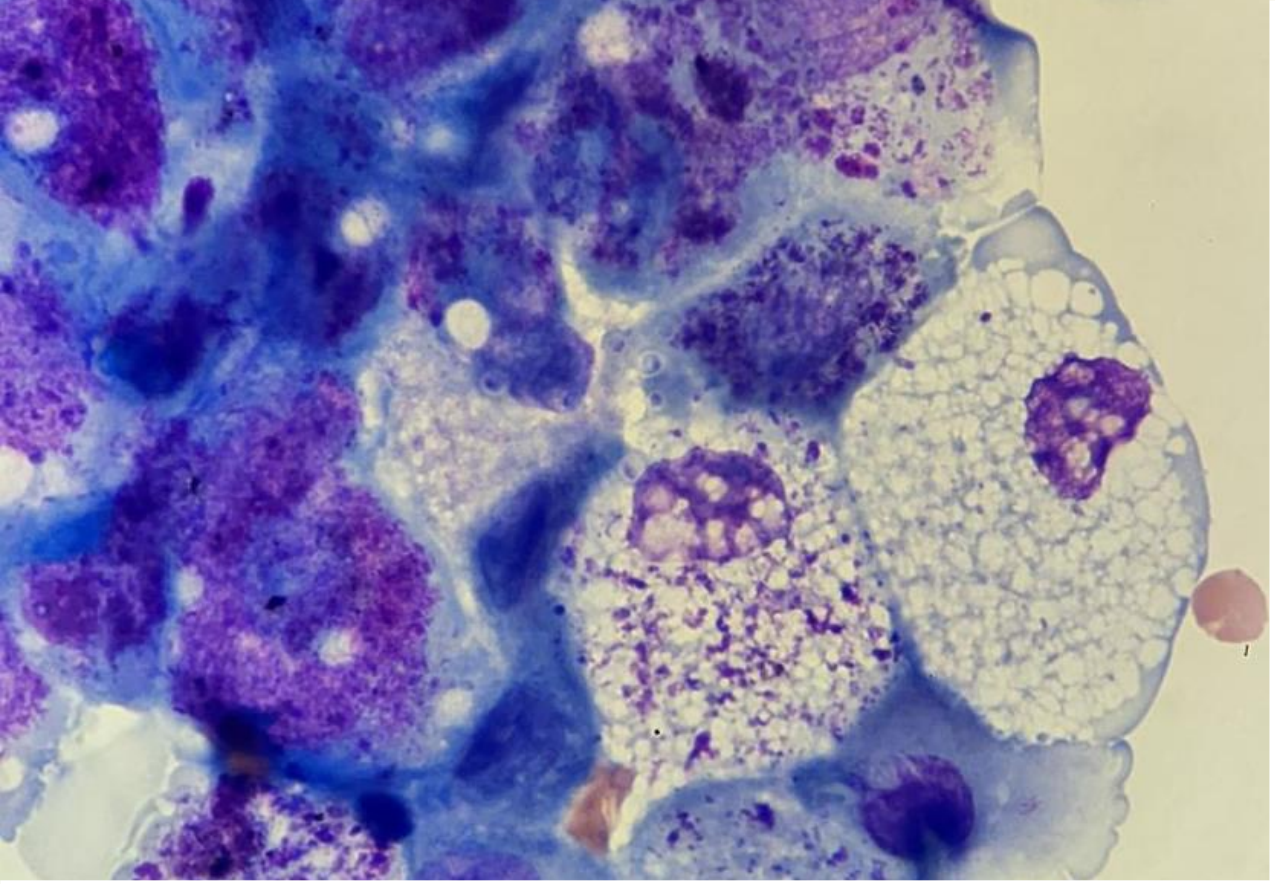
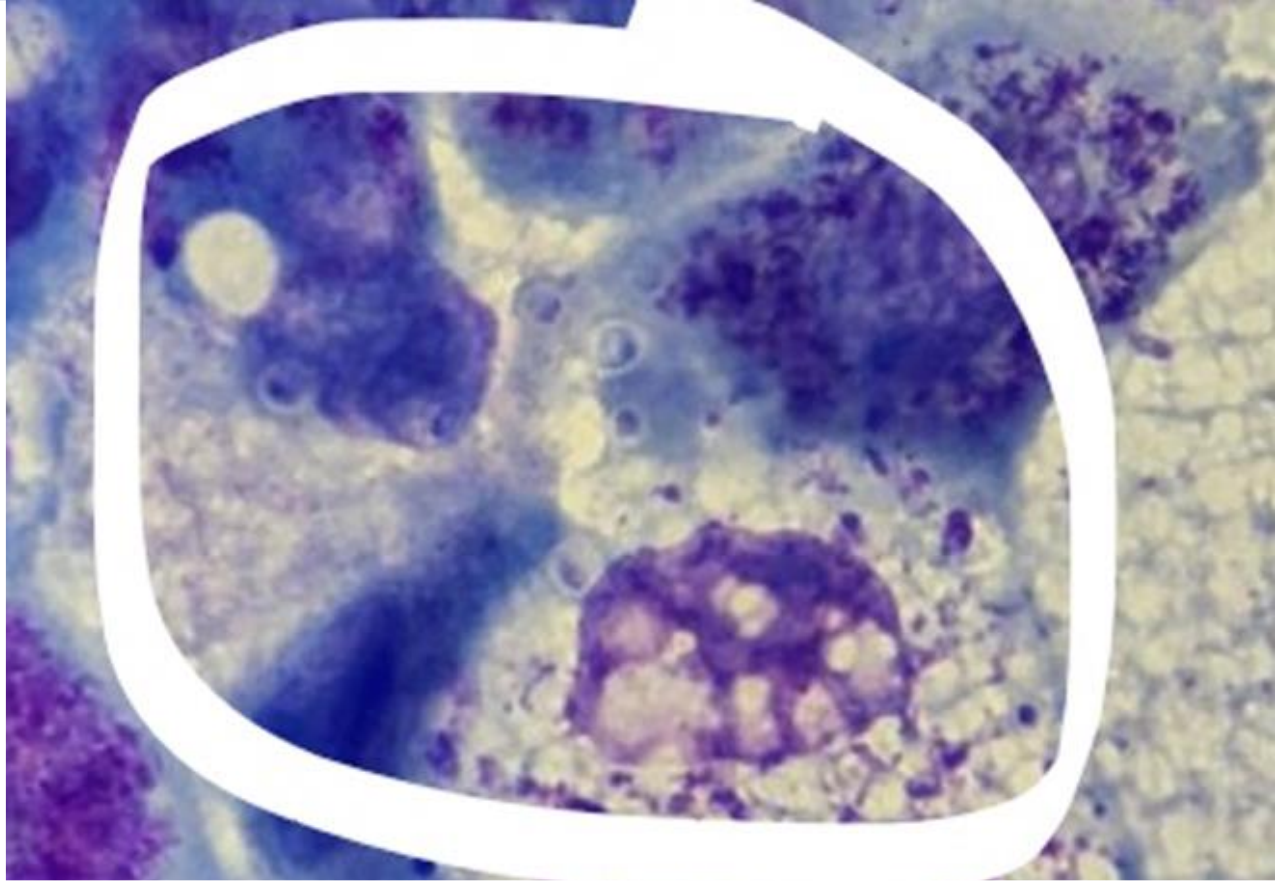
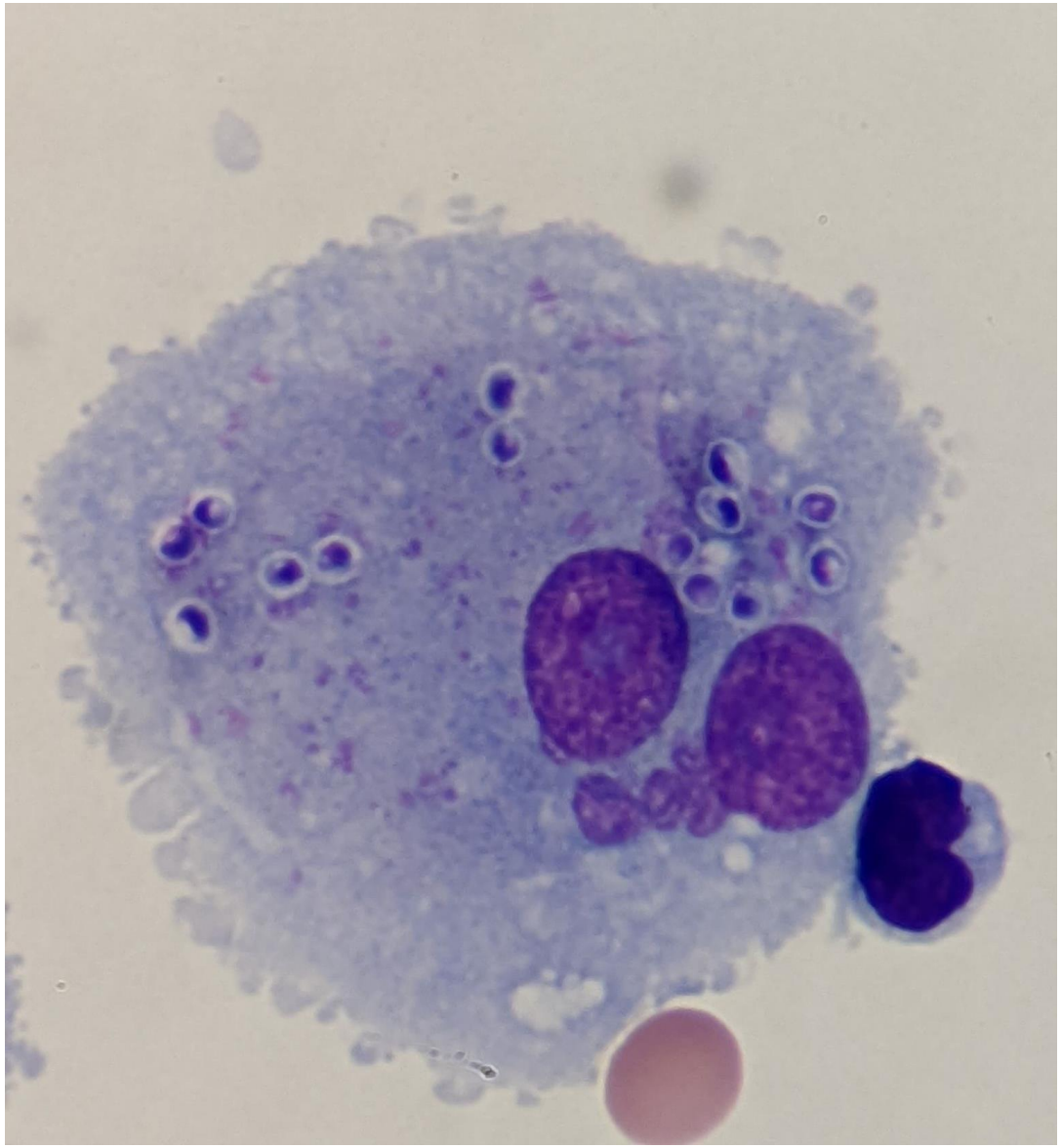
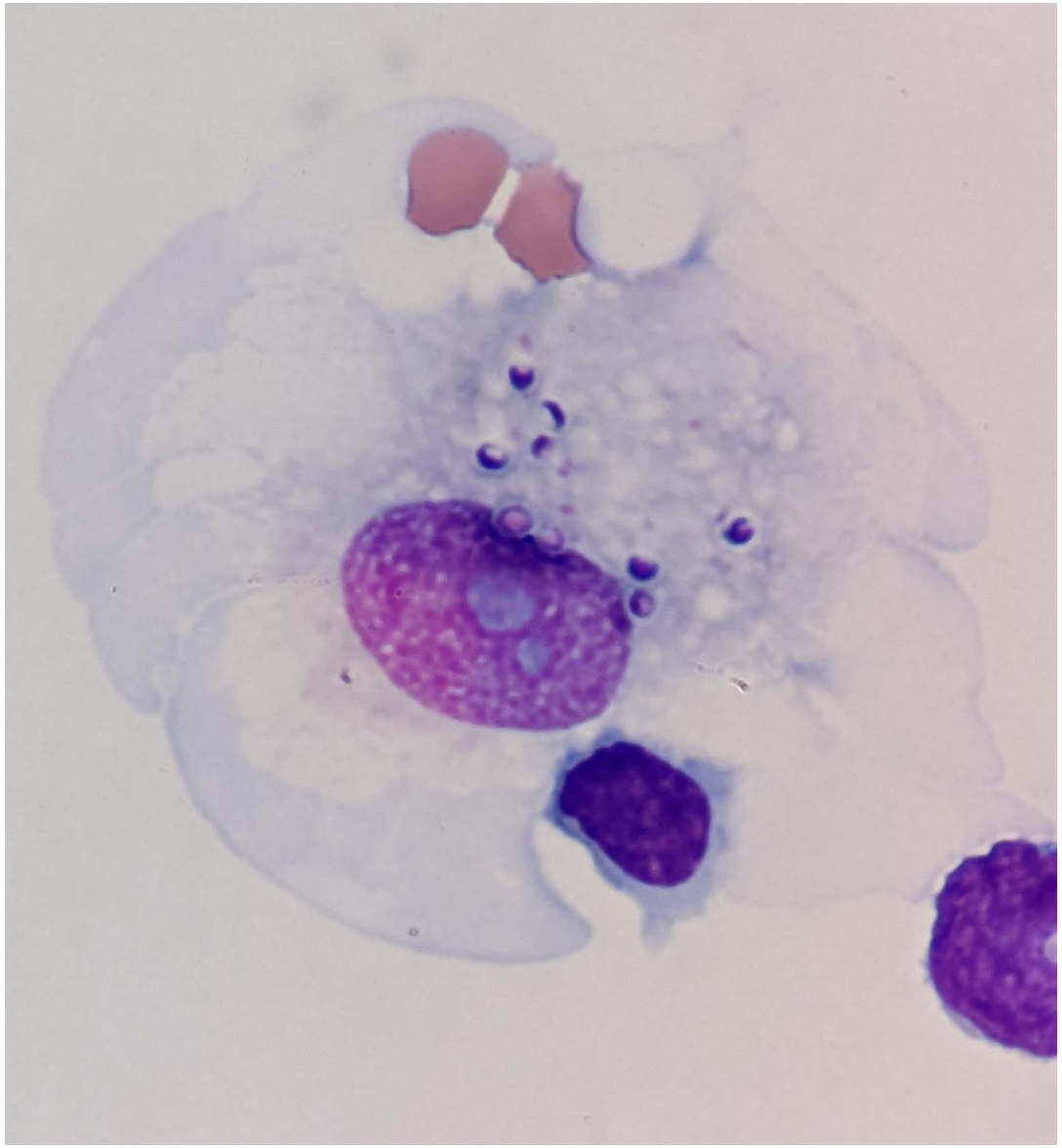
But they also collected a Bronchoalveolar Lavage. . .





Cytospin Prep BAL Differential using Wright/Giemsa Stain at 100X





Reaching a Diagnosis

ID Fellow ordered follow up serum testing to confirm our suspicions:

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HISTOPLASMA AG RESULT          1.19     ng/mL
HISTOPLASMA AG INTERP      POSITIVE
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Which was also corroborated by the pathology report:

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BAL: Many small fungal yeast forms are seen with GMS staining.

Capsular mucicarmine staining is not identified.  The features
appear most consistent with Histoplasma, as reported in the
lung biopsy specimen.  Correlation with microbiology results is
recommended
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And finally confirmed nearly a month later in culture:

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 MYCOLOGY FINAL REPORT =

Fungus/Yeast:

 HISTOPLASMA CAPSULATUM
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Where did it come from?