

A Case to Scratch Your Head Over

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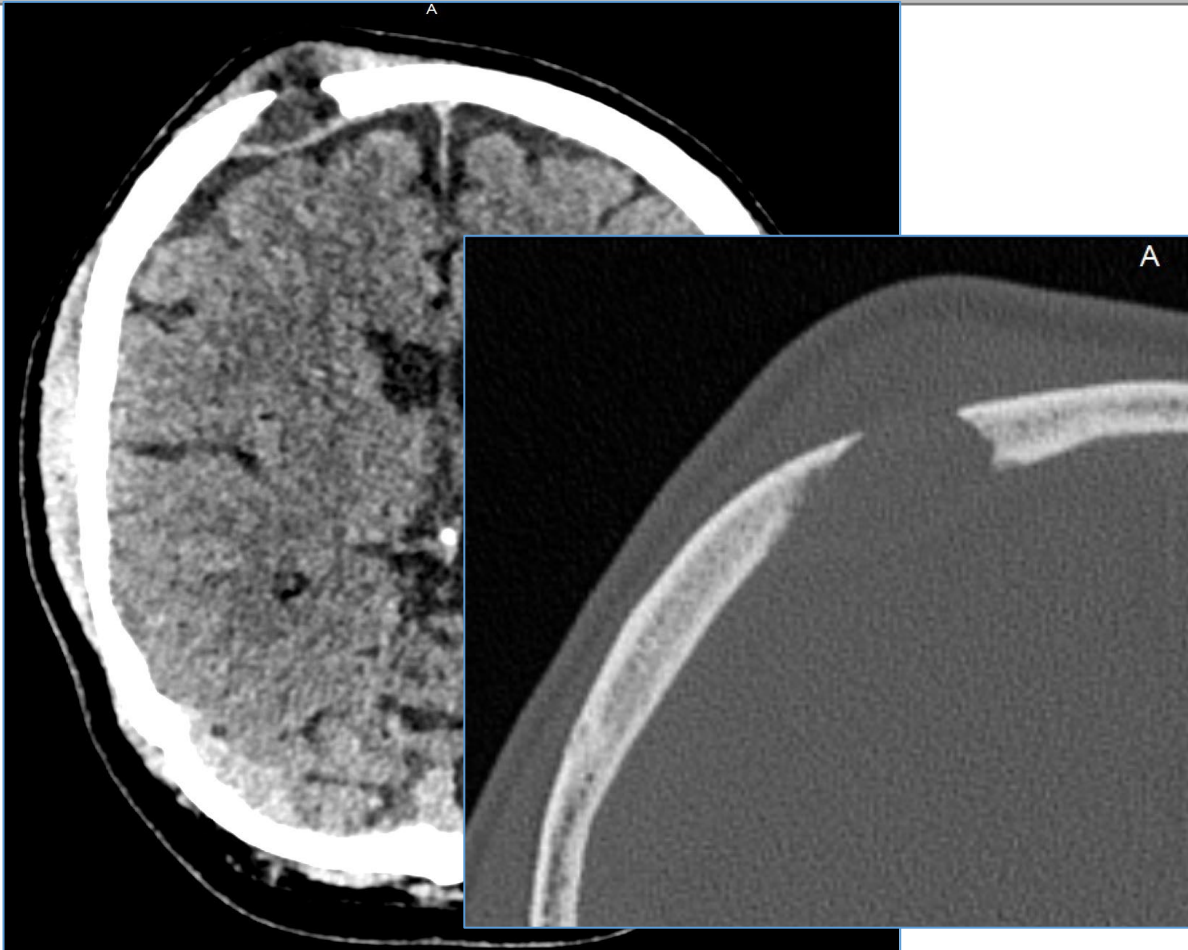
Wetscherek M, Guilfoyle M, O'Donovan D, Barker AP

Cambridge University Hospitals NHS Foundation Trust

Presenting History

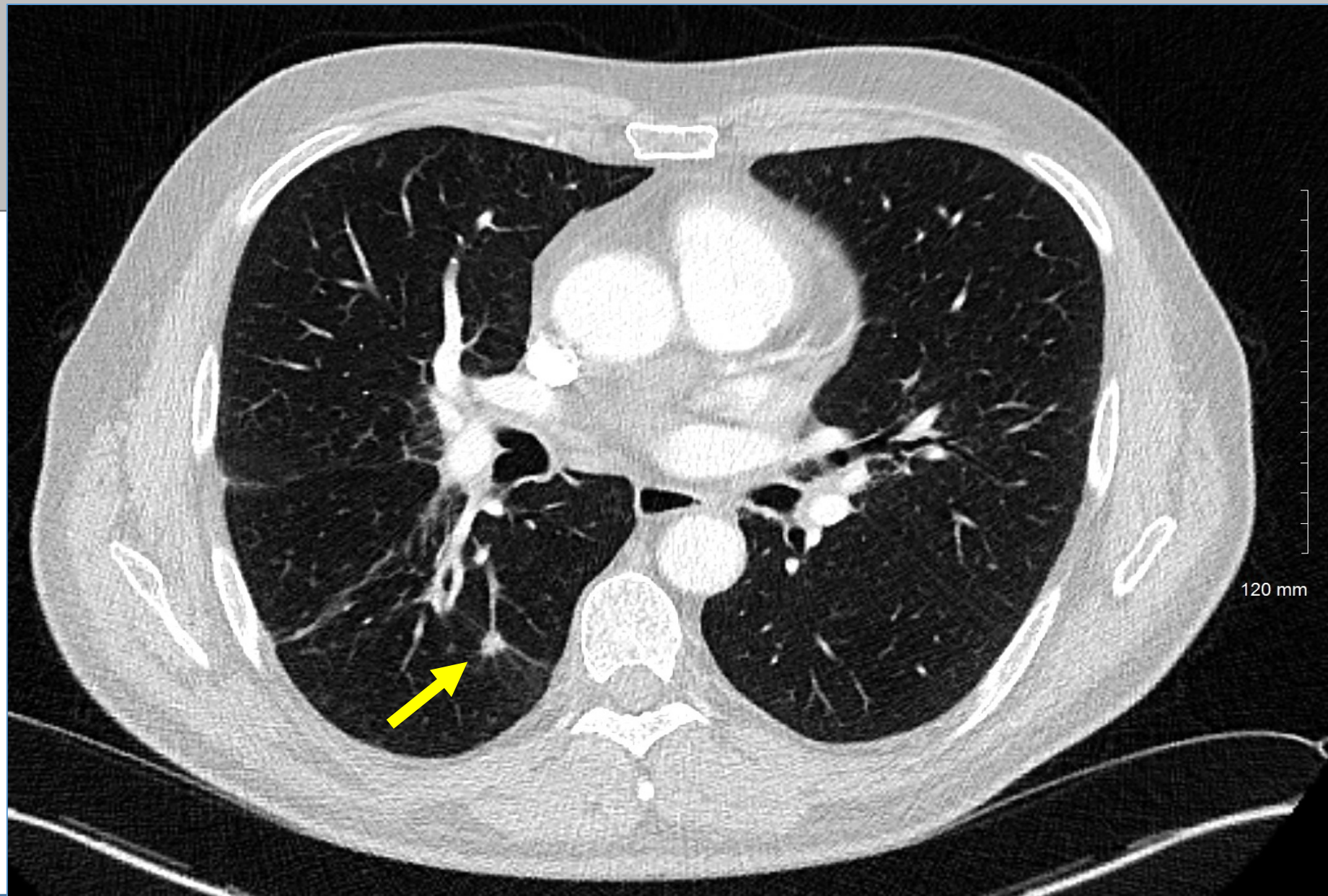
- 59 year old Caucasian male
- Presented to GP with a lump on his forehead, preceded by 4 week history of dull headache
- Otherwise systemically well
- Non-smoker with no significant past medical history

Imaging Findings

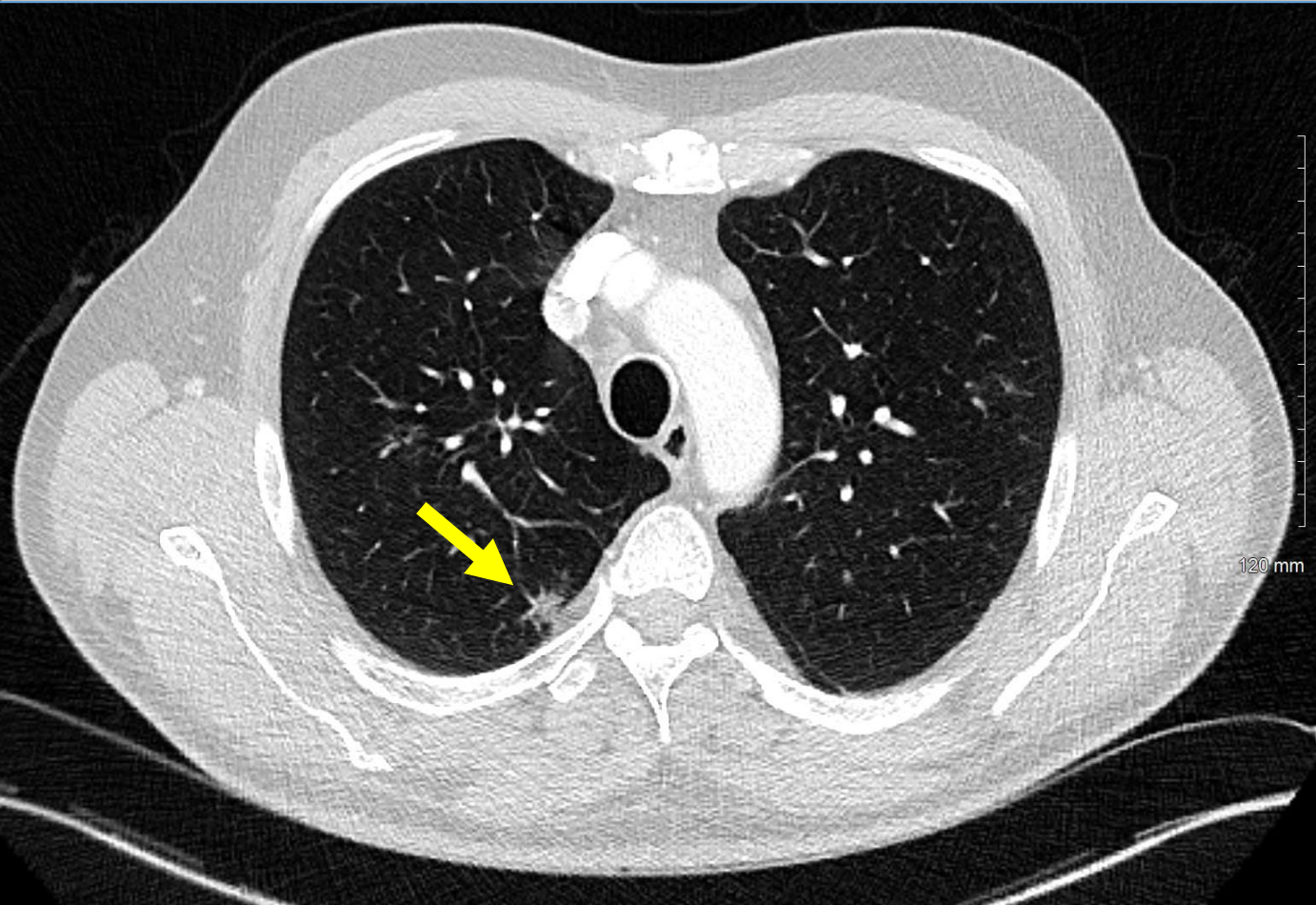


- CT head - destructive frontal bone lesion with central low attenuation
 - ? Osteomyelitis – TB vs other
- Patient admitted to neurosurgery for further investigation and treatment
- CT chest, abdomen and pelvis performed as part of work-up to illicit underlying diagnosis...

CT Chest



CT Chest



- Bilateral scattered solid and sub-solid nodules throughout both lungs

DDx:

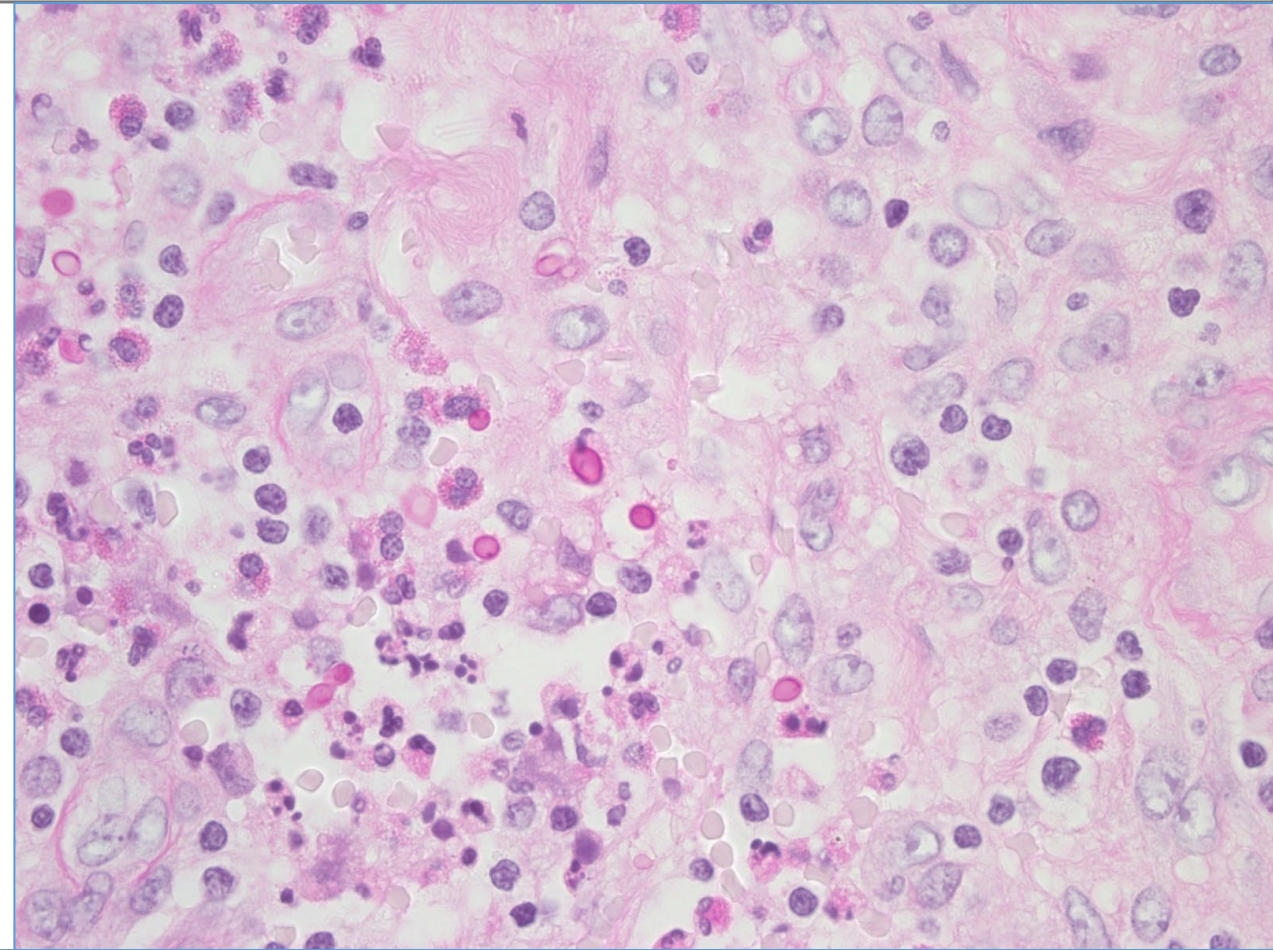
- Disseminated malignancy
 - Multifocal infection
 - Tuberculosis
 - Fungal infections
 - Sarcoidosis
 - Vasculitis
-
- No other abnormalities identified

Clinical course

- Excision and drainage of frontal bone collection
 - Granulomatous inflammation with micro-abscesses, yeast and oval structures
 - Tuberculosis excluded
 - Cryptococcus antigen positive
- **On further questioning, the patient described being scratched on the head by a tree branch two months earlier...**
 - In the correct clinical setting bilateral lung nodules are in-keeping with pulmonary Cryptococcus, introduced via haematogenous spread

Cryptococcus Neoformans

- Fungal infection
- Usually spread via inhalation of fungal spores
 - Less commonly haematogenous spread as seen in this case
- Common in immunocompromised patients but relatively rare in the immunocompetent population
- This patient was immunocompetent

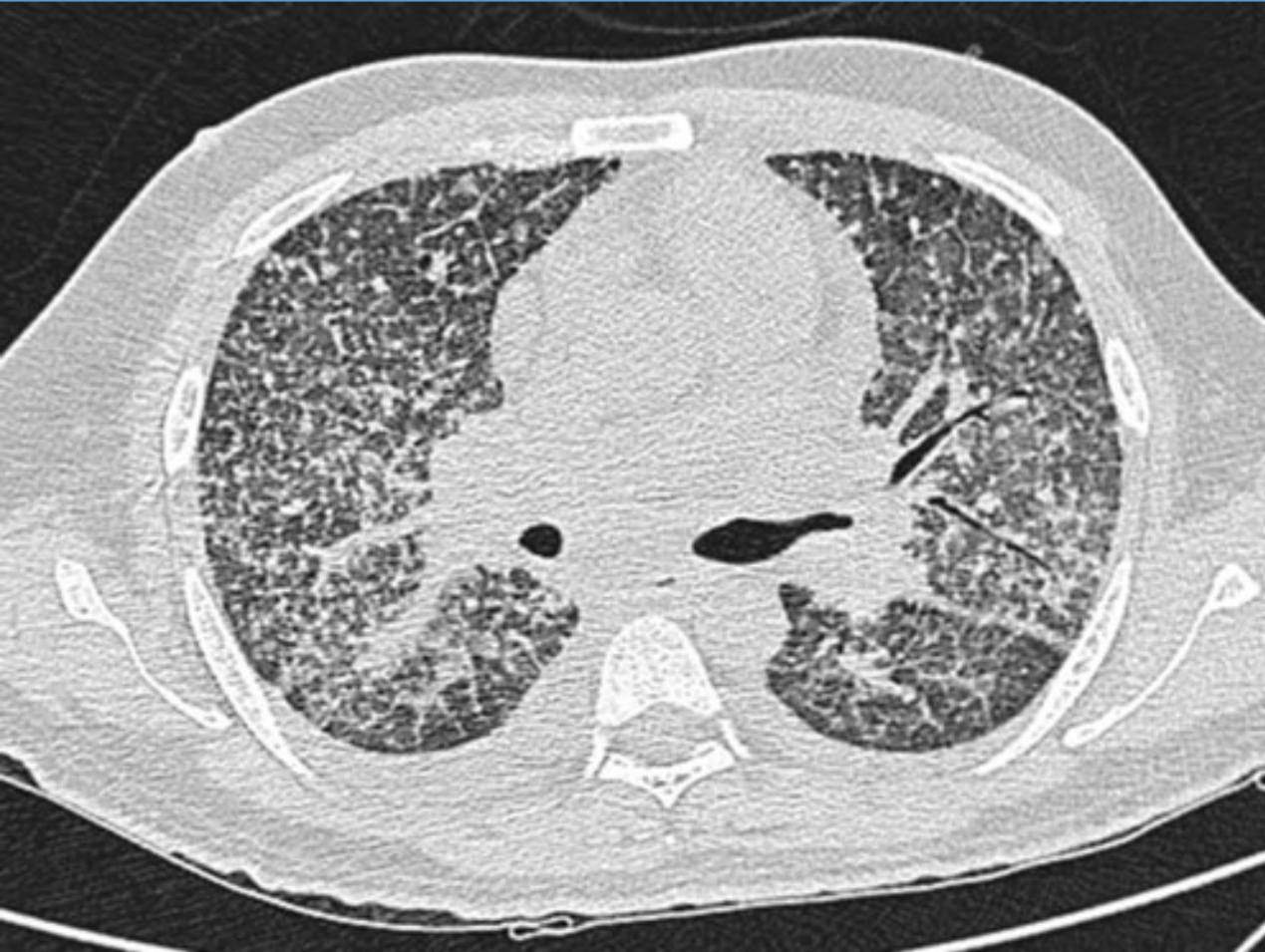


Pulmonary manifestations of Cryptococcus

Varied radiological presentations which can mimic other (often more common) pathologies, presenting a diagnostic challenge for radiologists and clinicians

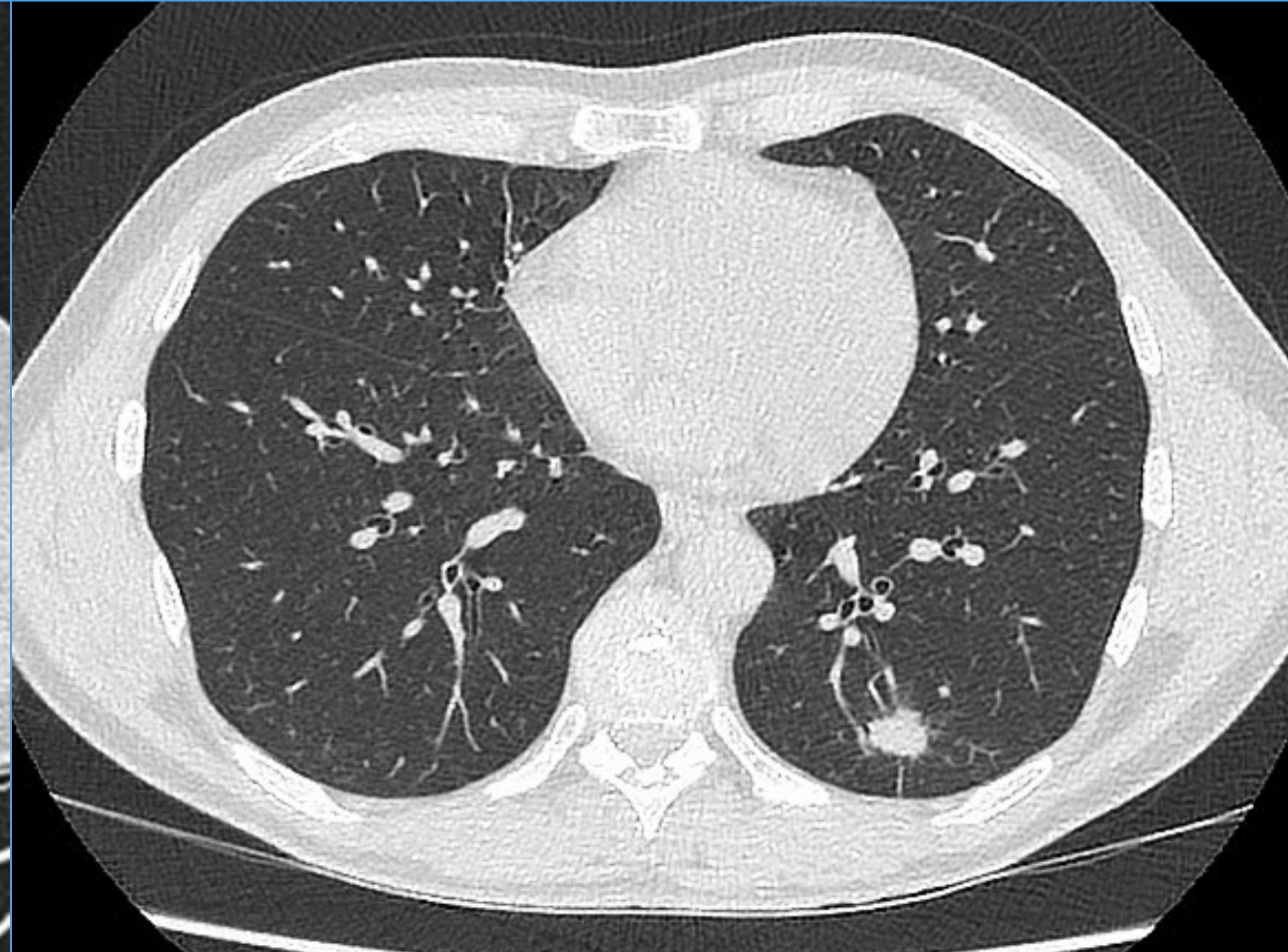
IMMUNOSUPPRESSED PATIENTS

Disseminated thoracic disease with lymph node enlargement



IMMUNOCOMPETENT PATIENTS

Pulmonary nodules or focal areas of consolidation +/- cavitation



Diagnosis and Treatment of Cryptococcus


- Final diagnosis of cryptococcal infection is based on pathological findings:
 - Tissue sampling of lymph nodes, nodules or areas of mass-like consolidation
 - Serum cryptococcal antigen test
 - Bronchoalveolar lavage with culture
- Treated with long-term antifungal therapy

Summary

- Pulmonary nodules caused by *Cryptococcus neoformans* are usually caused by inhalation
- Can be caused by haematogeneous spread – as in this case from a head wound
- Other potential causes of bilateral pulmonary nodes with skull lesion are more common and include
 - TB
 - Malignancy
 - Vasculitis
 - Sarcoid

References

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A photograph of a Japanese garden. In the foreground, a large, gnarled tree trunk with dark bark curves across the frame. The background is filled with dense foliage in vibrant autumn colors, including reds, oranges, and yellows. A small pond is visible in the lower right, reflecting the surrounding greenery and trees. The overall scene is peaceful and scenic.

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