

Bovine TB tracheitis following introduction of steroid inhaler

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History and exam

An 86 year old Caucasian male was referred to the respiratory outpatients department with an intermittently productive cough and weight loss. He had had no notable TB exposure. He had recently been started on a steroid inhaler.

Examination findings were a loud wheeze heard throughout his chest with no lymphadenopathy or clubbing.

PMHx:

COPD/Asthma

HTN

CABG

Bowen's Disease

CKD 3

30 pack year ex-smoker

Medications:

Tiotropium inhaler 18mcg OM

Fluticasone/Salmeterol inhaler

50/500mcg BD

Salbutamol Inhaler PRN

Nifedipine 30mg OD

Carbocysteine 750mg TDS

Omeprazole 20mg OM

Investigations and Results

- Chest x ray showed partial collapse of the right lower lobe.
- CT Thorax showed diffuse irregular concentric thickening of the large airways and partial right lower lobe collapse.
- Bronchoscopy showed a grossly abnormal trachea with thick white secretions and diffuse nodular change ? candida. No endobronchial lesions seen.
- Histology showed necrotising granulomata and numerous mycobacterium.
- Bronchial washings on acid fast smear showed numerous mycobacteria.
- Culture ultimately grew Mycobacterium bovis.

Learning Points

• Inhaled corticosteroids may lead to reactivation of primary tuberculosis, due to decreased local immunity

Two recently published studies both showed inhaled corticosteroids can increase the risk of reactivation tuberculosis.^{1,2} There has not been sub group analysis however it may be that inhaled corticosteroids increase the risk of endobronchial tuberculosis or tracheal tuberculosis in particular.

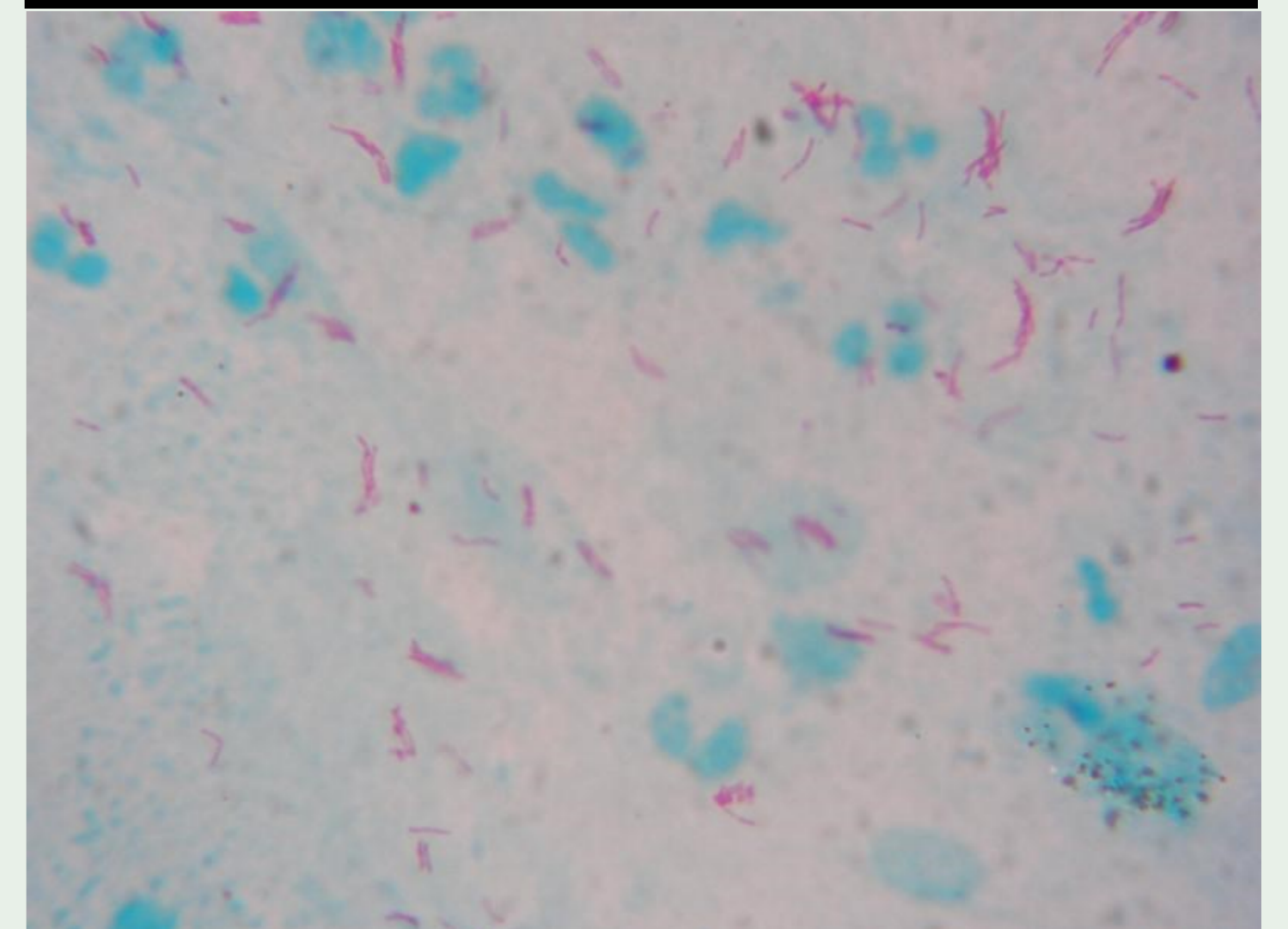
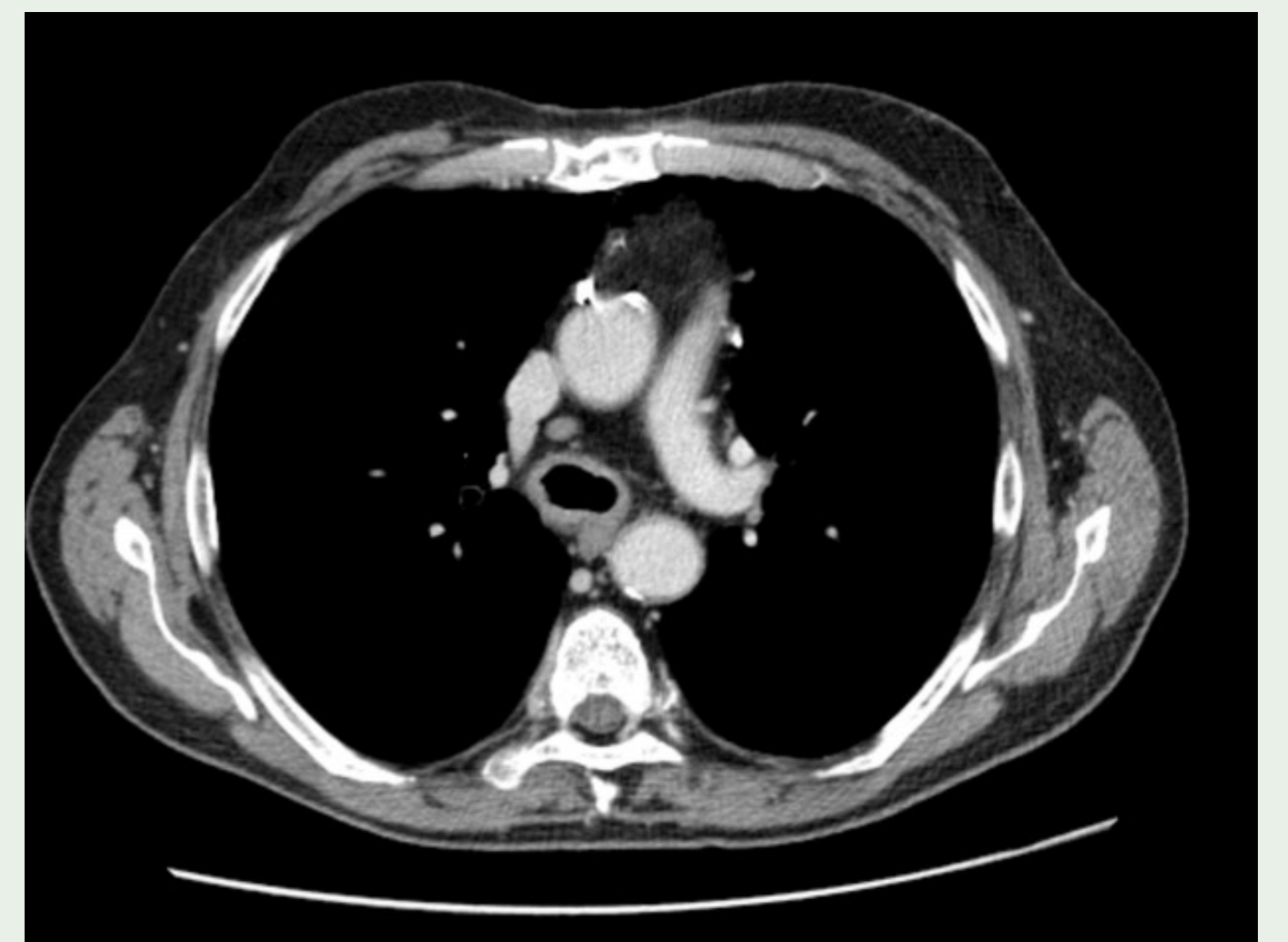
• Tracheal tuberculosis could be misdiagnosed as bronchogenic carcinoma

Tracheal tuberculosis is very uncommon. Endobronchial involvement is seen in 10 - 40% of patients with active pulmonary tuberculosis but only around 4% of those will have evidence of tracheal infection.^{3,4} Radiological features as in this case may be similar.⁴

• This is a concern as early diagnosis and treatment is needed to reduce the likelihood of stenotic/fibrotic complications

Mycobacterium infection of the trachea and endobronchial system can present with airway stenosis and stridor which may require acute surgical or radiological intervention.³

Early treatment is thought to reduce the likelihood of this developing.³



References

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2. Brassard P, Suissa S, Kezouh A, Ernst P. Inhaled Corticosteroids and Risk of Tuberculosis in Patients with Respiratory Diseases. *American Journal of Respiratory and Critical Care Medicine*. 2011;183(5):675-678.
3. Kashyap S, Mohapatra PR, Saini V. Endobronchial Tuberculosis. *Indian Journal of Chest Diseases and Allied Sciences*. 2003; 45(4):247-256.
4. Barbosa B, Amorim V, Ribeiro L, Marchiori E. Tuberculosis: tracheal involvement. *Radiologia Brasileira*. 2016;49(6):410-411.