

CASE REPORT

Bronchial dentures as a cause of airway actinomycosis

Michelle A Murray,¹ Mark P Rogan,² Ross K Morgan,¹ Seamus J Linnane¹

¹Department of Respiratory Medicine, Beaumont Hospital, Dublin, Ireland
²Waterford Regional Hospital, Waterford, Ireland

Correspondence to Dr Michelle A Murray, michellemurray@rcsi.ie

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SUMMARY

A 65-year-old man was referred to the respiratory clinic with recurrent chest infections on a background of stage 3 chronic obstructive pulmonary disease. On examination, there was wheeze bilaterally more marked on the left lower lobe. Subsequent imaging revealed an obstruction of the left main bronchus that was concerning for malignancy. Initially, on flexible bronchoscopy, a hard mass was found and multiple biopsies were positive for actinomycosis. Subsequent rigid bronchoscopy was undertaken and a set of dentures were removed from the airway.

BACKGROUND

This is a case of a 65-year-old man who was treated for recurrent infective exacerbation of his chronic obstructive pulmonary disease (COPD) for a year. On chest X-ray and CT thorax, he had an obstructive lesion that was suspicious for lung cancer. Biopsies at flexible bronchoscopy showed actinomycosis. This case brings together respiratory, microbiology and cardiothoracic surgery.

CASE PRESENTATION

A 65-year-old man was referred to the respiratory clinic with a 12-month history of recurrent chest infections, worsening dyspnoea and wheeze. He had been treated with multiple courses of antibiotics and steroids, but failed to improve. He had a background of COPD GOLD stage 3, (forced expiratory volume in 1 s 1.3 L, 43% predicted) and myocardial infarction with angioplasty 3 years previously. He was an ex-smoker with a 40 pack-year history. Clinical examination revealed no clubbing or lymphadenopathy; however, he did have

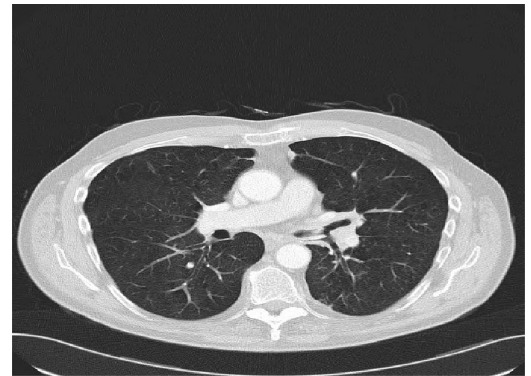


Figure 2 CT thorax: early emphysematous change with consolidation in the left lung and air bronchograms; however, a mass lesion could not be excluded.

bilateral wheeze more marked on the left lower lobe. Oxygen saturations were normal on room air.

INVESTIGATIONS

Chest X-ray showed left lower lobe consolidation ([figure 1](#)). A CT of the thorax revealed obstruction of the left main bronchus with distal air bronchograms, concerning for central malignancy ([figure 2](#)). Initial bronchoscopy demonstrated a mass occluding the distal left main bronchus 1.5 cm distal to the carina with prominent granulation tissue. Endobronchial sampling revealed actinomycosis with no malignant cells. He was referred to our hospital for a bronchoscopy with a view to endobronchial debulking via argon plasma coagulation. At bronchoscopy, proximal granulation tissue was

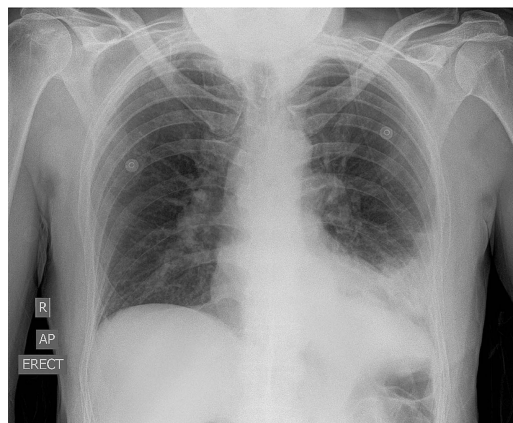


Figure 1 Chest X-ray: consolidation of the left lower lobe.

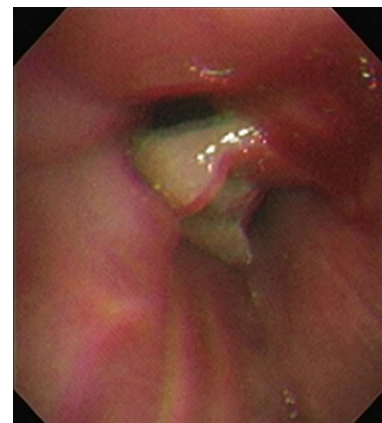


Figure 3 Dentures visible on flexible bronchoscopy obstructing the left main bronchus 1.5 cm distal to the carina.



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Figure 4 Partial dentures retrieved after rigid bronchoscopy.

removed to reveal a hard immobile foreign biopsy (figure 3). Actinomyces was again cultured.

DIFFERENTIAL DIAGNOSIS

Actinomyces is a chronic suppurative anaerobic infection usually residing in the oropharynx or gastrointestinal tract. Endobronchial actinomyces is rare and uncommon but when found it is generally in association with foreign body aspiration or necrotising pneumonias. It is usually acquired through inhalation, aspiration or haematogenous spread. Classic presentations are thoracic mass lesions, rib destruction and empyema. However, it can masquerade behind presumed bronchogenic malignancy and tuberculosis.

TREATMENT

On questioning he did admit that he had ‘misplaced’ his dentures 1 year previously. He was referred for rigid bronchoscopy where a set of dentures (figure 4) were removed.

OUTCOME AND FOLLOW-UP

His symptoms rapidly improved with clearance of his X-ray and reduced dyspnoea.

DISCUSSION

In adults, foreign body aspiration is much less common than with children and it often is due to intoxication, general

anaesthesia, neurological condition or sedation, and is often tolerated for much longer than it is in children.¹ There is a diagnostic challenge when trying to take a history from a patient who may have aspirated or inhaled their dentures. Many patients may not recall that they have aspirated them and the denture plate and teeth are radiolucent making the identification on imaging much more difficult.² Patients may have coexistent disease and this may delay in further investigating.

Learning points

- ▶ This case highlights the need to investigate patients with persistent and ongoing dyspnoea and recurrent infections despite having advanced chronic obstructive pulmonary disease.
- ▶ Unilateral clinical and radiological signs should always be investigated.
- ▶ A clinical and radiological diagnosis of malignancy should always be confirmed, if possible.
- ▶ Aspiration in adults is not common and detection of aspirated dentures can be difficult as they are not radiopaque.³
- ▶ An interesting aspect of this case was the detection of actinomyces. This anaerobic bacteria can grow around a foreign body in an airway and mimic bronchogenic carcinoma.^{4 5} We suggest that the presence of this organism in the airway should prompt a thorough evaluation for foreign body.

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REFERENCES

- 1 Baharloo F, Veyckemans F, Francis C, *et al.* Tracheobronchial foreign bodies: presentation and management in children and adults. *Chest* 1999;115:1357–62.
- 2 Hashmi S, Walter J, Smith W, *et al.* Swallowed partial dentures. *J R Soc Med* 2004;97:72–5.
- 3 Chadwell JB, Mitchell JR, Donnino M, *et al.* Aspiration of radiolucent dentures in facial trauma: case report. *Ear Nose Throat J* 2010;89:E1.
- 4 Yidiz O, Doganay M. Actinomyces and nocardia pulmonary infections. *Curr Opin Pulm Med* 2006;12:228–34.
- 5 Chouabe S, Perdu D, Deslee G, *et al.* Endobronchial actinomyces associated with foreign body: four cases and a review of the literature. *Chest* 2002;121:2069–72.

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