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Medical Imagery

Obstructive pneumonia caused by *Gordonia bronchialis* with a bronchial foreign body

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A 68-year-old man who was an ex-smoker with 35 pack-years presented with a 9-month history of cough. He was previously diagnosed with intraductal papillary neoplasm of the pancreas but did not have other diseases or conditions associated with immunosuppression. Chest computed tomography revealed infiltrations in the right lower lung (Figure 1a). Fiber-optic bronchoscopy revealed a bronchial foreign body with yellow sputum in the right lower lobe bronchus (Figure 1b), confirming obstructive pneumonia secondary to bronchial foreign body aspiration. The foreign body was a peanut fragment (Figure 1c). We performed 16S ribosomal (r)RNA gene sequencing after histopathological examination with Grocott staining revealed numerous hyphae (Figure 1d). Sputum culture analysis revealed gram-positive bacilli, suggesting an aerobic actinomycete, possibly *Nocardia* sp. Basic Local Alignment Search Tool analysis of 16S rRNA gene sequence showed 100.00% concordance with *Gordonia bronchialis* Diagnostic and Statistical Manual 43247

(accession number CP001802). No other organisms were previously isolated from the patient's sputum. His symptoms and radiological findings improved after foreign body removal without antibiotics.

To the best of our knowledge, this is the first report of pneumonia caused by *G. bronchialis*. *G. bronchialis* causes infectious diseases attributed to foreign body insertions (e.g. coronary artery surgeries, insertion of pacemakers, intravascular catheters) (Johnson et al., 2011) and needle injuries (Choi et al., 2019). Most infections are intraoperatively transmitted from the environment. Herein, pneumonia developed from an obstruction with infiltrations, instead of the usual violation of soft tissue and isolation of bacterium. Diagnosis is difficult because conventional cultures cannot accurately identify *G. bronchialis*, which leads to its misdiagnosis as an actinomycete, such as *Nocardia* or *Rhodococcus*. Identification of *Gordonia* species is becoming more common with the incorporation of 16S rRNA gene sequencing (Franczuk et al., 2022).

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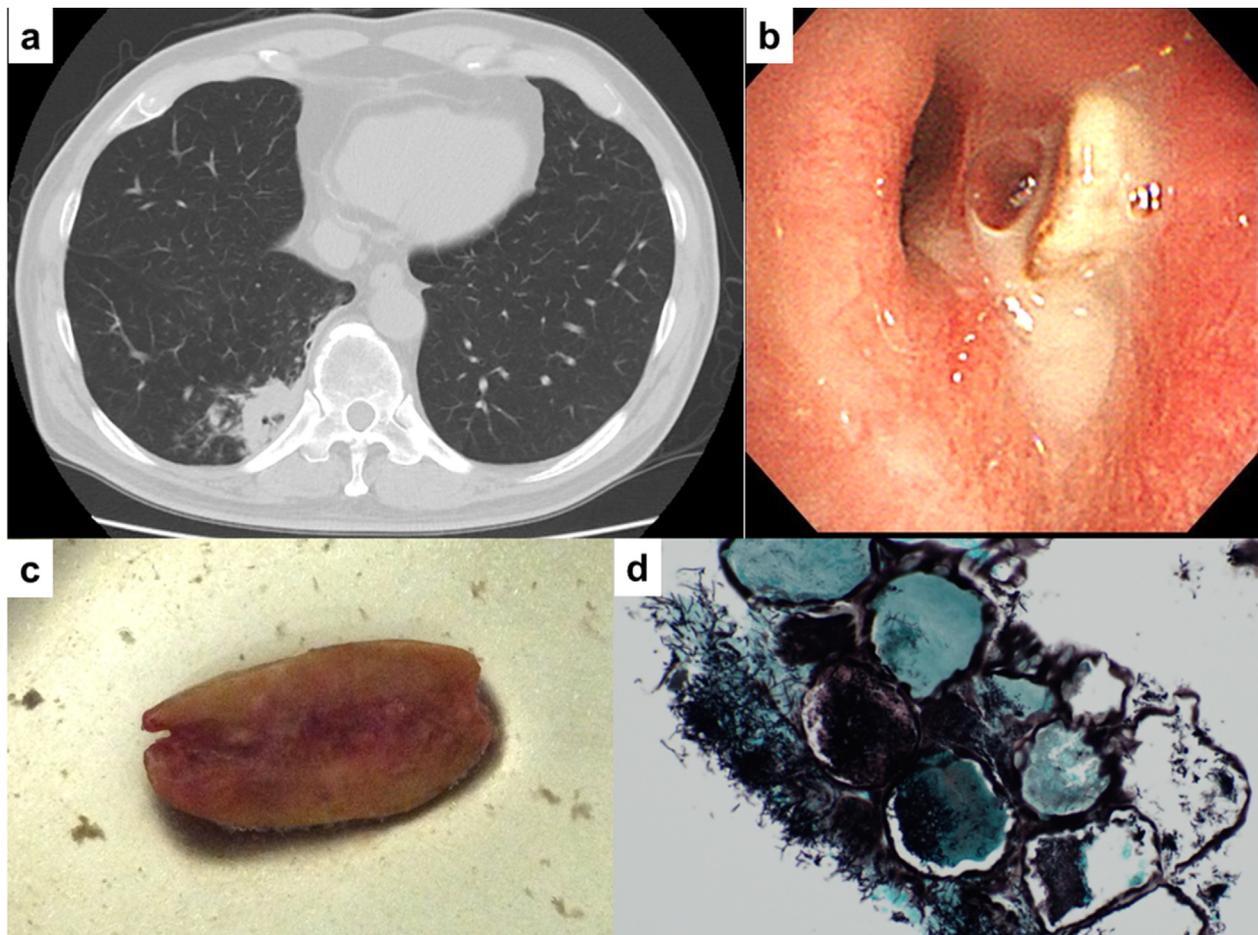


Figure 1. Radiological, bronchoscopic, and pathological findings of obstructive pneumonia with a bronchial foreign body. (a) Chest computed tomography revealed infiltrations in the right lower lung field. (b) Fiber-optic bronchoscopy imaging revealed a bronchial foreign body with yellow sputum in the right lower lobe bronchus. (c) The foreign body was a peanut fragment. (d) Grocott stain revealed numerous branching hyphae around the peanut.

The present case draws the attention of clinicians to this emerging pathogen.

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Ethical approval

Written informed consent was obtained from the patient for publication of this case report and the accompanying images.

Author contributions

Directly provided patient care: H.N., S.H., S.M., K.M., A.M., and K.K. Microbiological and pathological analysis: K.U. and T.F. Drafted and edited manuscript and images: H.N., S.H., D.T., and M.T. Manuscript revision: all authors.

Declaration of competing interest

The authors have no competing interests to declare.

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