A recalcitrant foreign body

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A 54-year-old woman with well-controlled mild intermittent asthma presented with a persistent cough productive of purulent sputum. She had no symptoms of dysphagia or gastroesophageal reflux disease. She had a remote 5-pack-year smoking history and previously lived in Lake of the Woods, Ontario, where her and her husband owned and operated a tree planting company for many years. There were no risk factors for tuberculosis nor travel out of country. Computed tomography of the chest (Figure 1A) revealed an obstructing calcified lesion within the anterior segment of the right upper lobe and calcified lymphadenopathy present in the right paratracheal region. Additional calcified granulomas were noted within the right middle and lower lobes. Flexible bronchoscopy confirmed the presence of an obstructing lesion within the anterior segment of the right upper lobe (Figure 1B). Attempts were made to extract the lesion via flexible bronchoscopy, but because these were unsuccessful, a rigid bronchoscopy was performed to remove the lesion (Figure 1C). Pathological examination was consistent with a broncholith, hypothesized to be related to blastomycosis infection given her occupation and residence in an endemic area, although cultures and fungal serology were negative.

KEY LEARNING POINTS

- Although rare, broncholithiasis should be included in the differential diagnosis of a suspected foreign body. Additional evidence of previous granulomatous inflammation and calcification may be supportive.

- Other considerations for a calcified endobronchial lesion include the following: chronic endobronchial infection; carcinoid tumours; hamartoma; amyloidosis; tracheobronchoplasia osteochondroplastica; osteomas; osteosarcomas; and chondromas and chondrosarcomas. All of these are rare.
- Symptoms from broncholithiasis may include hemoptysis, persistent cough and recurrent pneumonia.
- Treatment should be offered in symptomatic patients.
- Broncholiths can occasionally be safely removed by flexible bronchoscopic techniques, but in more difficult cases, rigid bronchoscopy or surgical bronchotomy may be required.

REFERENCES

- Anwer M, Venkatram S. Broncholithiasis: Incidental finding during bronchoscopy – case reports and review of the literature. *J Bronchol Intervent Pulmonol* 2011;18:181-3.
- Cerfolio RJ, Bryant AS, Maniscalco L. Rigid bronchoscopy and surgical resection for broncholithiasis and calcified mediastinal lymph nodes. *J Thorac Cardiovasc Surg* 2008;136:186-90.
- Seo JB, Song KS, Lee JS, et al. Broncholithiasis: Review of the causes with radiologic-pathologic correlation. *Radiographics* 2002;S199-213.
- Choptiany M, Wiebe L, Limerick B, et al. Risk factors for acquisition of endemic blastomycosis. *Can J Infect Dis Med Microbiol* 2009;20:117-21.

Figure 1 A A calcified obstructing lesion (white arrow) seen on computed tomography within the anterior segment of the right upper lobe with calcified mediastinal lymphadenopathy (white arrowhead). Mucous plugging and atelectasis is seen distal to the lesion. B Image from flexible bronchoscopy confirming the obstructing lesion within the anterior segment of the right upper lobe. C Gross specimen of the lesion (10 mm largest diameter) extracted from the right upper lobe, placed in a plastic specimen container

The 'Images in Respiratory Medicine' section of the *Canadian Respiratory Journal* aims to highlight the importance of visual interpretation, whether physiological, radiological, bronchoscopic, surgical/thorascopic or histological, in the diagnosis of chest diseases. Submissions should exemplify a classic, particularly dramatic or intriguing presentation of a disease while offering an important educational message to the reader (insightful diagnostic pearls or differential diagnosis, etc). This section is not intended to be a vehicle for publication of case reports (see the Clinical-Pathologic-Conferences for case-based learning series).

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