On-line Case Report

Bronchogenic cyst imitating chronic asthma

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ABSTRACT

This case report demonstrates the dangers of assuming the accuracy of a neonatal diagnosis of asthma, that is not responsive to medical therapy, and highlights the value of CT imaging.

Keywords: Asthma – Bronchogenic cyst

An asthmatic 15-year-old girl, diagnosed as a neonate, and with a strong family history presented with increasing shortness of breath on minimal exertion. Her previous exacerbations had been associated with the use of NSAIDs and excessive exercise, as well as exposure to animals and damp conditions. Despite significant escalation of her asthma therapy (Seretide 375 µg bd inh; Montelukast 10 mg od po; Cetirizine 10 mg od po; Prednisolone 15 mg po od; Azithromycin 50 mg po od), only a minor improvement in her respiratory symptoms occurred.

Initial investigations included screening for cystic fibrosis, chest X-ray, spirometry and IgE level measurement in view of the strong family history of atopy.

The investigations for cystic fibrosis were found to be negative and the total IgE level was 30 kU/l. Spirometry provided limited information with the FEV₁ and FVC consistently 100% or greater, peak flow 75% and FEF₅₀ equivalent to 62–69% predicted with no reversibility.

Further imaging was obtained in the form of a computed tomography (CT) scan due to increasing exercise-induced breathless and a reduced transfer factor (KCO predicted value 2.2, observed value 1.64; TLC corrected 6.03, predicted 7.4). This revealed normal bronchial anatomy and lung parenchyma, with no evidence of chronic airways inflammation. However, a poorly defined airspace posterior and distal to the carina

was demonstrated (Fig. 1) although its relation to the tracheobronchial tree could not be determined. A fibre-optic bronchoscopy was then performed to investigate the CT findings. This identified a slit-like opening on the medial aspect of the right bronchus intermedius (Fig. 2),

Figure 1 CT scan demonstrating a poorly defined airspace

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Figure 2 Views from a fibre-optic bronchoscopy showing (A) slit-like opening on the medial aspect of the right bronchus intermedius (B) which enters into a large saccular structure.

which entered into a large saccular structure, filled with green purulent material. Surgery was then performed to identify and correct the lesion. A right thoracotomy was performed, the cyst identified, and separated from the oesophagus. The lower trachea and right main bronchus

Figure 3 Histology confirming the lesion as a bronchogenic cyst lined by ciliated columnar epithelium, with cartilage and mucus-secreting glands.

were separated from the cyst and, following excision of the cyst, the right main bronchus was then incised to allow closure of the fistula.

Microscopic examination confirmed the lesion to be a bronchogenic cyst, lined with benign respiratory type epithelium, cartilage and mucus-secreting glands (Fig. 3).

Following an uneventful recovery, the patient was discharged with no further symptoms of shortness of breath on exertion, cough, or expiratory wheeze. Her asthma therapy has since been reduced to a salbutamol inhaler.

Conclusions

This case demonstrates the dangers of assuming the accuracy of a neonatal diagnosis of asthma, that is not responsive to medical therapy, and highlights the value of CT imaging.