Gastric bronchitis: a rare cause of recurrent haemoptysis

T G Ranganath,¹ Pratibha Sharma,² Harendra Yadav,¹ Rahul Srivastava³

¹Department of Pulmonary Medicine, Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, Uttar Pradesh, India

²KGMU, Lucknow, Uttar Pradesh, India

³Department of Pulmonary Medicine, CSM Medical University, Lucknow, Uttar Pradesh, India

Correspondence to
Dr TG Ranganath,
ranganathtg@gmail.com

SUMMARY

An 8-year-old boy presented with recurrent chest pain and haemoptysis since 3 years of age. He had taken multiple courses of antitubercular treatment without any symptomatic relief. His chest x-ray showed opacity consistent with right sided lung collapse. Further detailed work-up including high-resolution CT scan of thorax, pulmonary angiogram and radionuclide study confirmed intrathoracic gastrogenic cyst. Complete control of symptoms was achieved with pantaprazole 40 mg once daily.

BACKGROUND

Posterior mediastinal cysts form about 7% of all the reported posterior mass lesions.¹ Alimentary tract duplication cysts are anomalies with varied clinical presentation and cause diagnostic difficulties and delay. They can occur anywhere from the mouth to the anus. Intrathoracic enterogenous cysts are commonly associated with vertebral anomalies or they form part of the split notochord syndrome.² Here, we report a patient who was on antitubercular treatment due to clinic radiological feature mimicking tuberculosis. A detailed work-up led to the diagnosis of isolated intrathoracic gastrogenic cyst.

CASE PRESENTATION

An 8-year-old boy presented with recurrent chest pain and haemoptysis since 3 years of age. Chest pain had a burning character and was mainly in the interscapular region. Pain was non-radiating and had no aggravating and relieving factors. The episodes of chest pain were associated with expectoration of blood streaked sputum. There was no history of trauma, bleeding disorders, fever, recurrent respiratory tract infections, breathlessness and

weight loss. There was no history of contact with an open case of tuberculosis. He was born out of a non-consanguineous marriage. There was no significant antenatal or postnatal and family history. He had attained normal growth and developmental milestones. On examination his vitals were within normal limits. Respiratory system examination revealed decreased air entry on right side of interscapular and infrascapular area and rest of the systemic examination was within normal limits.

INVESTIGATIONS

His routine haematological investigations and coagulation profile were within normal limits. Chest roentgenogram showed a right-sided paracardiac homogeneous opacity along with signs of right middle lobe collapse (figure 1). Mantoux test showed an induration of 14 mm. Sputum for acid fast bacilli was negative on two consecutive occasions. High resolution CT of thorax revealed a soft tissue enhancing posterior mediastinal mass lesion along the collapse of right middle and lower lobe (figures 2 and 3) without any evidence of connection to the gastrointestinal tract or vertebral column. Pulmonary angiogram also revealed a soft tissue lesion in posterior mediastinum with no vascular malformation (figures 4 and 5). Radio nucleide study was conducted to detect the presence of ectopic gastric mucosa with ^{99m}Tc^m-pertechnetate which showed a strong intrathoracic uptake of the radio tracer (figures 6 and 7). This confirmed the diagnosis of intrathoracic gastrogenic cyst causing peptic ulceration leading to recurrent haemoptysis in the patient. No associated vertebral anomalies were seen on skeletal survey. His ultrasounds of the abdomen and echocardiogram were within normal limits.

Figure 1 Homogeneous opacity of the right cardiac border along with collapse of right middle and lower lobe.

Figure 2 Posterior mediastinal soft tissue enhancing lesion of right upper lobe.

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Figure 3 High-resolution CT thorax showing collapse of right middle and lower lobes and no associated vertebral anomaly.

OUTCOME AND FOLLOW-UP

The patient was completely asymptomatic with oral pantaprazole 20 mg once daily at 2 months but the patient was advised surgical removal of the cyst due to risk of infection.

DISCUSSION

Embryological foregut duplication cysts are congenital anomalies occurring all along the gastro-intestinal tract. In total 70% of them are abdominal (50% in ileum, 15% in oesophagus), 20% are thoracic and 5% are combined. They constitute 15% of all the mediastinal masses and 7% of masses in the posterior mediastinum.³ The earliest description of foregut duplication was made by Blassius and Bermer in 1711.⁴ It was first operated in 1931 by Sauerbuch. The exact aetiology of the malformation has not been established yet. Various theories proposed are epithelial recanalisation, vascular accidents, embryonic diverticula and external compression. The most agreed theory is that the endodermal tube focally adheres to the notochord during the development of embryo hence a traction diverticulum is formed which later separates to form the enterogenic cyst.⁵ Bronchogenic, intramural oesophageal and enteric are three

Figure 4 Pulmonary angiogram showing posterior mediastinal soft tissue lesion.

Figure 5 Pulmonary angiogram showing posterior mediastinal soft tissue lesion and no associated intrathoracic vascular anomaly.

types of foregut duplication cysts. Enteric cysts are commonly associated with vertebral anomalies and they form a part of the split notochord syndrome. Oesophageal cysts are never associated with vertebral anomalies.

Patients usually present in infancy and childhood with non-specific respiratory complaints like recurrent cough, dyspnoea and stridor or present to the emergency department with acute respiratory distress or peptic perforation. However, our patient had only recurrent haemoptysis due to peptic ulceration. A few may remain asymptomatic and may be diagnosed incidentally. Vertebral anomalies may produce restricted neck movement, scoliosis, nerve root compression, pain and even paraplegia.² The complications of the foregut duplication cyst include infection, superior vena cava obstruction, pulmonary artery stenosis and those containing gastric mucosa may present with perforation or haemoptysis. The common differential diagnoses

Figure 6 Transaxial view of ⁹⁹Tm-pertechnetate study showing an intrathoracic focus of 1.63 cm in diameter showing strong up take of the radio tracer agent.

Figure 7 Coronal view of ^{99}Tc -pertechnetate study showing an intrathoracic focus of 1.63 cm in diameter with strong up take of the radio tracer agent.

include pneumonia, pneumatocele, vascular ring, intrathoracic lobar sequestration, congenital lobar emphysema and tumours.

An intrathoracic mass may be apparent for chest roentgenogram. CT thorax is helpful in defining the anatomical extent and resectability of the lesion and rule out other associated anomalies. Exact nature of the cyst was only defined by histopathology after surgical excision but now with the use of the ^{99}Tc -pertechnetate study, the diagnosis can be established almost definitively as the tracer is selectively taken up and secreted by the gastric mucosa whether in stomach or ectopic⁶ like in our patient. Surgery is definite treatment of choice for a symptomatic cyst. Thoracoscopic removal can be attempted if

there are contraindications like lung distention, mediastinal shift or cyst sharing a common wall with the bronchus. Even asymptomatic cysts are excised due to 90% risk of infection and fear of malignancy.

Learning points

- ▶ Foregut duplication cysts occur all along the gastrointestinal tract, 7% give rise to posterior mediastinal masses.
- ▶ Most patients present with recurrent non-specific respiratory complaints and might rarely land up in the emergency department with peptic perforation.
- ▶ Always look for associated anomalies in patients with foregut duplication cyst.
- ▶ Lung collapse in childhood is always not due to tuberculosis even in high burden countries.
- ▶ Mantoux test is not a useful diagnostic test for tuberculosis, always confirm tuberculosis bacteriologically.
- ▶ Surgery is always the treatment of choice for the foregut duplication cyst.

Competing interests None.

Patient consent Obtained.

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