Esophageal duplication cysts are rare congenital abnormalities of the foregut. They are derived from the primitive foregut and constitute 20% of benign esophageal lesions.1 These are more common in males and may be associated with vertebral anomalies or other gut anomalies such as trachea-esophageal fistula.2 Most of the duplication cysts are diagnosed incidentally during endoscopy or radiologic studies. They are usually asymptomatic but can present with cough, recurrent chest infections, dysphagia, abdominal pain, retrosternal discomfort, pancreatitis etc.3 Duplication cyst with gastroesophageal reflux has been rarely reported in adults but not in children.4 Managing distal esophageal duplication with GER may also be a challenge as excision and fundoplication either has to be done through thoracic approach or combine thoraco-abdominal approach.

We are presenting a child with esophageal duplication cyst and gastro-esophageal reflux disease, who was managed successfully with open thoracotomy for removal of the cyst and thoracic fundoplication to control GERD.

CASE REPORT

A 16-month baby presented in the emergency department with history of coffee ground vomiting, recurrent chest infections secondary to GER, and failure to thrive. In the past history, the baby had antenatal ultrasound, study suggestive of diaphragmatic hernia. Postnatal CT chest, however, suggested a distal esophageal duplication cyst and a contrast esophagogram showed grade-IV GER. A thoracoscopy in another hospital excluded esophageal duplication at that time. Later, he presented with hematemesis in our department and was re-evaluated. Repeat CT confirmed a persistent 2.5 x 1.3 cm cyst in distal esophagus. Upper GI endoscopy suggested grade-II esophagitis with a wide patent gastro-esophageal junction. The child was treated with left thoracotomy, excision of the duplication cyst and thoracic fundoplication. He had an uneventful post-operative recovery and is doing well at 6 months follow-up.

Key Words: Esophageal duplication cyst. Gastro-esophageal reflux. Fundoplication.
cyst confirmed it to be a duplication cyst. Postoperative recovery was uneventful and baby showed immediate well being by better appetite and the vomiting episodes stopped. Upon follow-up at 6 months, the baby was well and thriving.

**DISCUSSION**

Esophageal duplications are not rare. The true incidence is not known, however, in one study of 50000 autopsied the incidence was around 1:8000 patients. They may affect any segment of the esophagus and are part of the much larger spectrum of anomalies of the foregut development and, therefore, may have other anomalies including gut and vertebral anomalies. Patients with thoracic foregut duplication may have a concomitant abdominal duplication. The duplications may be tubular or cystic. It has been shown in adults that esophageal duplications may be associated with gastro-esophageal reflux disease.

The diagnosis of esophageal duplications may be difficult. They usually present with vague symptoms and are detected when radiological evaluation is done for these symptoms. The common symptoms are recurrent chest infections, hematemesis and recurrent pneumonias. Sometime the cyst may be complicated by perforation, rupture and present as acute emergency. X-ray chest may show a shadow and suggest an anomaly, however, mostly the diagnosis is confirmed by CT scan or MRI of the chest.

Treatment of choice for duplication cyst is thoracoscopic excision, if present in accessible areas. Open surgery is reserved for cysts in difficult areas. This patient presented with antenatal diagnosis of diaphragmatic hernia. There is a possibility that cyst was confused as herniated bowel. Once the diagnosis of a duplication cyst was made, the patient had thorascopy for excision of the cyst. During the procedure, the cyst was not visualized and the surgeon mentioned that an esophageal duplication cyst was definitely excluded. This may represent a limitation of thorascopy. The explanation may be that as the cyst was sharing the muscular wall with the esophagus, therefore, it was missed on thorascopic evaluation. The other interesting feature was the persistent reflux symptoms of the patient. He had episodes of recurrent chest infections due to severe GER, which was documented by the contrast studies in infancy. It has been mentioned in some studies in adult patients that patients having esophageal duplications have high incidence of reflux esophagitis. This patient had severe GER causing esophagitis and recurrent chest infections. The explanation may be two-fold. First of all, the patients with distal esophageal cyst may have high incidence of hialtal insufficiency due to anatomical derangements causing GER or there may be an associated motility problem in the body of esophagus causing poor esophageal clearance and more symptoms with GER. In this patient, the location of the cyst and patulous gastro-esophageal junction suggested an anatomical alteration of anti-reflux mechanism. During endoscopy, no communication was noted between the cyst and esophagus. Hematemesis
in this baby was probably due to severe reflux esophagitis and that may also explain the recurrent chest infection. Management of this baby was also a challenge. The options were to perform a thoracic excision of the cyst and an abdominal or thoracic fundoplication in one sitting or as a staged procedure.\textsuperscript{5} He had initially failed thoracoscopy, therefore, the family was not keen for a thoracoscopic repair. It was preferred to perform open thoracic excision of the cyst and a thoracic fundoplication as it involved surgery in one area. A 180-degree thoracoscopic wrap was performed due to our previous experience of good results in children with GER.\textsuperscript{6}

The association of distal esophageal duplication with GER has not been reported in children. Possibly, this aspect of the problem was not given due consideration in the past. Many patients with esophageal duplication cyst may have symptoms secondary to either GER or delayed emptying causing reflux esophagitis.

\textbf{REFERENCES}


