



## An Asymptomatic Esophageal Duplication Cyst

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### Abstract

We report a case of a mediastinal mass detected incidentally during evaluation of a patient with fever of unknown origin. Upper endoscopy showed a smooth indentation in middle and lower third of esophagus. Surgical excision of the mass confirmed an esophageal duplication cyst.

**Keywords:** Duplication cyst; Esophagus; Mediastinal mass

### Introduction

Duplication cyst of the gastrointestinal tract is rare, rarely symptomatic and often reported in young adults. These cysts can arise from foregut, small and large intestine. We report a case of an incidental asymptomatic esophageal duplication cyst which was removed through a transthoracic approach.

### Case Presentation

A 39 year old male, was undergoing investigation for pyrexia of unknown origin. Chest x ray showed mediastinal widening. Computed tomography of the chest showed a large mass 10 x 6 x 5 cm posterior mediastinum indenting the lower and middle third of esophagus and contiguous with distal third (Figure 1 and 2). There was no internal enhancement or invasion of surrounding structures.

On retrospective questioning, patient had no intra luminal symptoms to suggest a mechanical dysphagia. Upper endoscopy confirmed an extrinsic compression at the same site. Patient underwent transthoracic resection of the mass which was in the plane of submucosa and muscular wall of the esophagus and none communicating with the lumen (Figure 3). The excised mass was filled with mucinous material (Figure 4) and histology showed typical lining by squamous epithelium with wall of the cyst containing components of both submucosa and muscular layer. Patient was started on clear fluid on day 2. Recovery was uneventful.

### Discussion

Duplication cyst of the esophagus was described by Blasius in 1711 and was further classified as simple epithelial – lined cysts and esophageal duplication cyst. They are benign mediastinal mass. Embryologically, there is a defective development of the primitive foregut.

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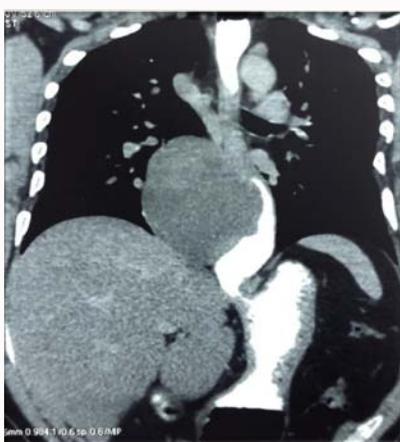
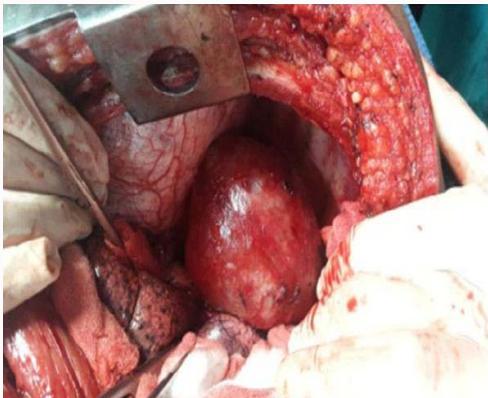


Figure 1: Large mediastinal mass seen and lower one third of esophagus.



**Figure 2:** Per operative view of the compressing the middle esophageal duplication cyst.



**Figure 4:** Collapsed cyst with mucinous material.



**Figure 3:** Resected esophageal cyst.

Typically, an esophageal duplication cyst has duplication of portions of mucosa and submucosa; epithelium remains none duplicated while a simple esophageal cyst have duplication of the epithelium. Either cyst does not communicate with the esophageal lumen. These cysts can occur in the neck, mediastinum or abdomen [1,2].

The most common location of esophageal duplication cyst is right posteroinferior mediastinum and this was also the location of cyst in our patient. While large cysts are often symptomatic, smaller cysts are incidental findings and are asymptomatic as was seen in our patient. Further, symptoms are common in children and seldom manifest in adulthood.

Dysphagia is the most common symptom (60%) and is due to extrinsic compression of the esophagus. Cysts in upper third of the esophagus manifests with respiratory symptoms due to compression of trachea bronchial tree, while middle third lesions present (20%) with dysphagia and chest pain radiating to the back. Rare presentations include cardiac dyssrhythmia by cysts located posteriorly in lower third of the esophagus, gastrointestinal bleed if the lining epithelium has gastric mucosa and very rarely malignant transformation of the cyst.

Differential diagnosis includes congenital cysts pericardial cyst, neuroenteric cyst, lymphangioma, cyst arising from thyroid and thymus, and transthoracic extension of pseudocyst of pancreas.

Diagnosis is confirmed by computed tomography of chest. The lesion is seen as a fluid filled cyst in relation to the esophagus. Magnetic resonance imaging is complementary. Chest X-ray shows widening of the mediastinum. Endoscopy shows extrinsic compression of the esophagus and is indicated for ruling out malignancy. Endoultrasound will provide information on the contents and origin and extent of the cyst [3].

Treatment of esophageal duplication cyst is surgical resection as majority of the cysts eventually become symptomatic. Options include transthoracic approach, minimal invasive procedure, endoscopic approach [4] and robotic assisted thoracic surgery [5,6]. Intra-abdominal cyst can be excised laparoscopically.

Our patient had cyst excision through transthoracic approach. The muscle layers were reapproximated after excision to prevent formation of pseudodiverticulum.

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