ORIGINAL RESEARCH PAPER
Volume - 13 | Issue - 02 | February - 2024 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

ESOPHAGEAL DUPLICATION CYST IN A PATIENT WITH ISCHEMIC HEART DISEASE - A CASE REPORT

General Surgery

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ABSTRACT

Esophageal Duplication Cysts (EDC) are rare in adults, < 7% are symptomatic. About 90% do not communicate with the esophageal lumen. Majority occur in the lower one-third of the esophagus. Minimally invasive surgery is the preferred treatment, with shorter hospital stays. [1, 2] A 53-year gentleman with coronary artery disease (CAD), presenting with retrosternal chest pain, was found to have a soft tissue lesion arising from the right wall of the mid - esophagus on Computed tomography (CT) scan. Endoscopic ultrasonography (EUS) confirmed features of EDC. The cyst was excised by Video Assisted Thoracoscopic Surgery (VATS). Patient had an uneventful recovery. Histopathology confirmed EDC.

KEYWORDS

Esophageal duplication cyst, Gastrointestinal cyst, Esophageal cyst, Mediastinal cyst, Adult Esophageal duplication cyst, Endoscopic ultrasonography.

INTRODUCTION

Esophageal Duplication cysts (EDC) are a rare entity, with most literature consisting of case reports or small case series [1]. A review of almost 50,000 autopsies revealed an incidence of oesophageal duplication cyst of 1 in 8200, with 60% occurring in the lower third oesophagus, 17% in middle third, and 23% in upper third [2]. There is a male predominance in a ratio of 2: 1, and duplication cyst has been associated with congenital abnormalities such as small intestinal duplication cyst, oesophageal atresia, and spinal abnormalities [3]. Although the majority of adults are asymptomatic, presenting symptoms include progressive dysphagia to solids and liquids, epigastric or abdominal pain, and retrosternal chest discomfort [4-8].

Case Study

A 53-year gentleman, post coronary angioplasty in 2017, presented with complaints of retrosternal pain. Routine blood and cardiac evaluations were normal. CT scan thorax revealed a surprise finding of a well circumscribed lobulated soft tissue lesion arising from the right lateral wall of the mid esophagus with exophytic extension indenting the esophagus. [Fig. 1] Endoscopy revealed an extrinsic impression on esophagus. Endoscopic ultrasonography (EUS) revealed classical features of an EDC. [Fig.2]

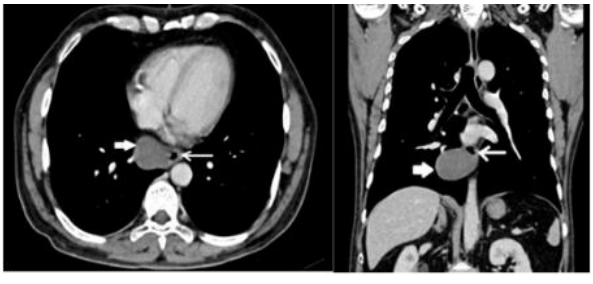

Fig. 1 CT scan a. EDC (Solid arrow) b. Esophagus (thin arrow)

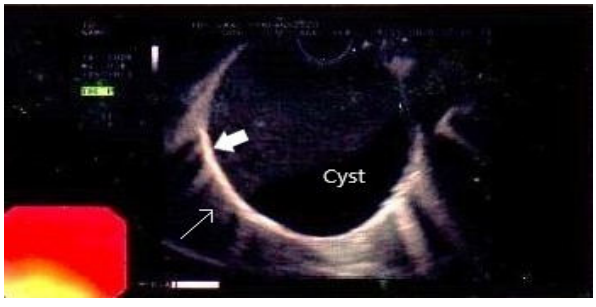

Fig. 2 EUS image a. Hyperechoic epithelial lining containing mucosa (Solid arrow) b. Hypoechoic smooth muscle (thin arrow)

The patient underwent Video assisted thoracoscopic surgery (VATS) excision of the cyst. With the patient in right semi prone position, the 10 mm camera port was placed in the 9th intercostal space (ICS), with working ports of 10mm in the 7th ICS and 5mm in the 11th ICS. **[Fig.3]**

Fig. 3 Port placement

A cystic lesion of approximately 4 cm x 4cm was identified on the right wall of mid-esophagus. **[Fig. 4]** The cyst was excised using ultrasonic scalpel. After confirmation of the esophageal mucosal integrity, the edges of the muscular layers of the esophagus were apposed with sutures of Polyglactin-910 to avoid a pseudodiverticulum**.**

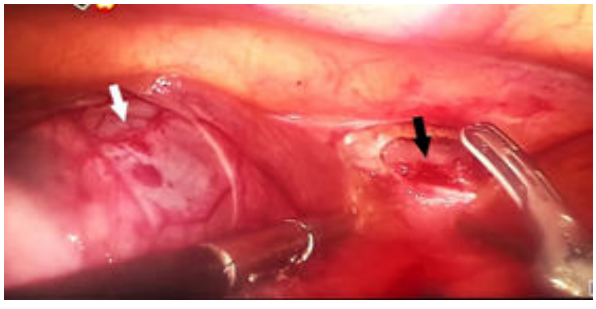

Fig. 4 Intra-operative image a. EDC (white arrow) b. Esophagus (black arrow)

The post operative course was uneventful and patient was discharged on 4th post – operative day (POD) on semi solid diet and full diet resumed on 7th POD. The patient is doing well in the subsequent post operative follow up. Histopathology confirmed features of an EDC.

DISCUSSION

During the fifth to eight weeks of fetal life, the esophageal lumen gets obliterated due to epithelial growth. Esophageal secretions form into vacuoles, whose persistence form EDC. Right sided preponderance of EDC occurs because of the elongation of the viscera and dextrorotation of the stomach [1]. EDCs constitute around 20% of all the gastrointestinal duplication cysts, only 15% to 20% occur in adults. Lower esophagus is the commonest site. Palmer's pathologic criteria

for an EDC are: a) The lesion should be within or attached to esophageal wall, b) There should be two layers of smooth muscle (inner circular, outer longitudinal) and c) The cyst wall lining should contain ciliated or ciliated columnar epithelium.[3]. Heterotopic gastric/pancreatic mucosae have been reported in some cases.

Differential diagnoses include bronchogenic cysts, leiomyoma, GIST, pericardial cysts, cystic degeneration of mediastinal tumors, etc. [4] Majority of adults are asymptomatic, incidentally detected during routine radiological investigations. Presenting symptoms include progressive dysphagia to solids and liquids, epigastric or abdominal pain, and retrosternal chest discomfort [2, 5].

CT scan, the most commonly used imaging, shows a thick-walled complex/simple smooth cystic structure with fluid within.[6] Magnetic resonance imaging (MRI) is helpful to delineate anatomic relationships and rule out other abnormalities, like GIST or leiomyomas. High signal intensity on T2-weighted images is seen due to the high proportion of water within the cyst contents.[6] On endoscopy, esophageal luminal narrowing or extrinsic compression can be seen. EUS demonstrates smooth, homogenous, hypoechoic periesophageal multi-layered wall mass with muscularis propria of the esophagus in direct contact with the cyst wall. [7] Besides helping in differential diagnosis of masses in the mediastinum, it helps in identifying the presence of luminal communications between the cyst and esophagus, taking biopsies, or emptying the cyst, in selected cases. Surgical excision of the EDC is the mainstay treatment. Prognosis is very good, recurrence is rare. More recently, VATS or robotic assisted thoracoscopic surgery (RATS) are preferred over the traditional posterolateral thoracotomy, with better cosmetic outcomes and shorter post operative hospital stays.[8] In asymptomatic cases, surgery is still advised to prevent complications like compression of the esophagus, aspiration, bleeding, ulceration, perforation, due to heterotopic gastric/pancreatic mucosa in the cyst, but no clear guidelines exist.[1]

CONCLUSIONS

This case report is about the rare adult EDC in a post angioplasty patient presenting with symptoms mimicking coronary artery disease with compression of the esophagus. The patient underwent excision of the EDC by VATS, the current preferred modality, with an uneventful recovery and early discharge from the hospital.

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