Case report - Esophagus

Symptomatic mucocele after esophageal exclusion

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Abstract

Surgical exclusion of the thoracic esophagus can result in the accumulation of secretions and dilatation of the esophageal remnant, a clinical picture known as esophageal mucocele. Although it is usually asymptomatic, if it increases in size it can produce a variety of compressive symptoms such as coughing, chest pain and respiratory distress. We present two cases of symptomatic mucocele after esophageal exclusion treated successfully with surgical resection. We believe that surgical resection should be considered for symptomatic patients, and that esophageal bypass surgery should be used with caution and indicated mostly in patients with a limited life span or with contraindications for esophagectomy.

Keywords: Esophageal mucocele; Complication esophageal bypass; Mediastinum; Cyst

1. Introduction

Surgical exclusion of thoracic esophagus can lead to accumulation of secretions in the closed esophageal segment, with resultant formation of esophageal mucocele. This complication is rarely symptomatic but, when sufficiently large, the patient may present with coughing, chest and abdominal pain and vomiting. Life-threatening respiratory distress related to tracheo-bronchial compression is also possible. Infectious complications may occur, resulting in fistulization or septic presentation [1, 2]. We present and discuss herein two cases of symptomatic esophageal mucocele treated successfully with surgical resection.

2. Cases

2.1. Case 1

A male 40-year-old patient, admitted 28 years ago because of chest pain and cough. Twenty years before this admission, he underwent a retro-sternal colonic bypass for caustic esophagitis (voluntary ingestion of sodium hydroxide), and had stenosis of the cervical esophago-intestinal anastomosis that was dilated several times. For the past 10 years he reported no major complaints. Physical examination was normal, as were his EKG and complete blood work. A chest X-ray showed mediastinal enlargement (Fig. 1a) and mass effect anteriorly compressing the trachea (Fig. 1b). The patient was prepared and brought to the operating room (OR), a right posterolateral thoracotomy was performed under general anesthesia, a 12 × 7 cm tense cystic mass was dissected from the mediastinum without difficulties, some of the hypertensive mucous content was evacuated (Fig. 1c), and the lesion was resected (Fig. 1d). The postoperative period was uneventful and the patient was discharged on the 5th postoperative day.

2.2. Case 2

A male 36-year-old patient, admitted with intense shortness of breath (SOB). He reported admission to another hospital three years previously because of an emesis-related esophageal rupture and sepsis. He was operated on three times and had two episodes of severe mediastinitis. In the third operation, he underwent a retrosternal gastric bypass, and a cervical esophago-gastric tense anastomosis resulting in anastomotic leak that healed in four weeks. He had early stricture of this anastomosis and needed several dilatation procedures, but was otherwise well until three months before the current admission, when he noticed progressive shortness of breath and dyspnea even while resting. Chest X-ray showed mediastinal enlargement, and a CT-scan showed critical compression of the trachea by a regular cystic mass identified as a possible esophageal mucocele (Fig. 2a–c). Bronchoscopy and esophagoscopy showed compression of the trachea and a stricture at the level of the cervical anastomosis. He was brought to the OR, and a cystic esophageal lesion was resected through a right posterolateral thoracotomy under general anesthesia. Difficulties during the procedure included severe adhesions to all areas around the esophagus in the mediastinum. The
postoperative period was uneventful, and the postoperative CT-scan was normal (Fig. 2d–f). He still needs dilatation of the cervical anastomosis every 2–3 weeks.

3. Discussion

Esophagectomy is the treatment of choice for patients with both resectable cancers of the esophagus and end-stage benign esophageal disease. The goals of esophagectomy are: (1) eradication of the disease and (2) restoration of comfortable swallowing. Resection and reconstruction is by far the best palliation when it is not possible to cure the disease. Bypass of a diseased esophagus is a palliative procedure, indicated in selected patients when resection is not possible. Bypass has been undertaken in the treatment of a variety of esophageal conditions, including severe stricture, perforation and rupture, as well as congenital and malignant tracheoesophageal fistula [3, 4]. It is usually performed to relieve dysphagia and prevent persistent aspiration in patients with unresectable benign disease. Bypass of the thoracic esophagus has also been used to treat caustic strictures when dense adhesions between the esophagus and stomach cause damage and scarring to the mucosa, decreasing the esophageal secretion volume. If this scenario occurs esophagectomy may not become necessary. It is possible that the esophageal glands atrophy in response to the increased pressure within the esophageal remnant, makes progressive growth unlikely to occur. It can be supposed also that most patients with malignant disease of the esophagus will not live long enough for the esophagus to distend with mucus, either below or above the malignant stricture. On the other hand, as a mucocele enlarges, it can compress or narrow the trachea, causing respiratory symptoms such as coughing, dyspnea and respiratory distress. It can be also related to the development of tracheo-esophageal fistula. Since symptoms are not common, the presence of a mediastinal mass is better evaluated through imaging studies such as chest radiographs, CT and MRI. CT and MRI are helpful in the evaluation of patients with this problem. The location and size of the excluded esophageal segment can be assessed, and associated complications identified. In particular, coronal and sagittal MRI, or multislice CT with 3-D reconstructions, may clearly delineate the entire extent of the excluded esophagus and show its relationship to adjacent mediastinal structures [6]. Mucocele is confirmed by its high intensity signal in coronal T2 MRI or a ‘cystic’ regular mass in CT-scan. It is important to stress that tomographic density of content of this lesion is usually high (25–35 UH) and is sometimes confused with soft tissue density or a solid mass. In our cases we had, first, a late development of mucocele that was not difficult to resect; whereas, in the second case, an early presentation after two episodes of severe mediastinitis made resection very difficult. It is important to stress that resecting the esophagus after a previous local infection is a very hard and tricky operation, and can be a
relative contraindication for late esophagectomy when reconstruction is not primary done [7]. There is also an increased risk of development of carcinoma in the esophageal remnant; a condition that is very difficult to diagnose [4]. Due to this, and other potential complications, we believe that surgery for mucocele resection should be considered and that esophageal bypass surgery should be used with caution and reserved for patients with a limited life span or contraindications for esophagectomy.

References