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Case Report Open Access

Incidental Discovery of an Esophageal Leiomyoma: Thoracoscopic Surgical Approach

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Abstract

Background: Esophageal leiomyomas are the most common benign esophageal tumor, originating in the smooth muscle of the esophagus. Patients may accuse dysphagia, epigastric pain, but in 50% of cases are asymptomatic. Paraclinical exams used to highlight the esophageal tumor are esophageal and stomach barium swallow, esophagoscopy, chest CT scan, endoscopic ultrasonography. Thoracoscopic enucleation in recent years has gained many followers.

Case Report: We present herein the case of 43 years old patient admitted in our department for thoracic trauma; the CT scan revealed a tumor in the middle third of the esophagus suggestive for a leiomyoma. Upper GI endoscopy showed an extrinsic compression in the middle third of the esophagus, without mucosal lesions, and esophageal barium swallow showed a slight narrowing of the lumen at this level. Given the findings suggestive of a benign esophageal tumor, possible esophageal leiomyoma, thoracoscopic approach was chosen. We performed a thoracoscopic enucleation with uneventful postoperative follow-up. Histopathology confirmed the diagnosis of esophageal leiomyoma.

Conclusions: Thoracoscopic enucleation is a feasible method to treat esophageal leiomyomas.

Keywords: Esophageal benign tumor; Esophageal leiomyoma; Thoracoscopy; Thoracoscopic enucleation

Introduction

Benign tumors of the esophagus are rare, accounting for less than 10% of esophageal tumor [1]. In benign tumors, leiomyomas represent about two-thirds [2]. They are usually single tumors developed in the lower two thirds of the esophagus [3], originating in the smooth muscle of the esophagus. In most cases leiomyomas occur between 20 and 69 years, the peak incidence is in the fifth decade of life [4]. It occurs more frequently in men, male female ratio is 2:1. Symptoms are nonspecific, common causes are dysphagia and epigastric pain, but 50% of patients may be asymptomatic. The dimensions are between 1 and 29 cm, most of them being under 5 cm [5,6]. Surgical treatment by tumor extramucosal enucleation is a safe method in about 96% of esophageal leiomyomas [7]. We present a patient with esophageal leiomyoma discovered incidentally during investigations for thoracic trauma.

Case Report

We present a patient of 43 years, emergency admitted in 1st Surgical Unit Emergency County Hospital Targu Mures in January for thoracic trauma with fracture of the seventh and eighth ribs, left side arch and pulmonary contusion. Chest CT scan revealed an expansive mass (incidentaloma) in the middle third of the esophagus, with 60 x 55 mm, partially calcified (Figure 1).

Endoscopic exam showed an extrinsic compression of the esophagus in middle third, and no lesion on the esophageal mucosa. We mention that the patient reported no previous history of symptoms to be related to the presence of an esophageal tumor. The recover after thoracic trauma was uneventful and the patient was re admitted 2 months later for surgical treatment. The CT scan and upper gastrointestinal endoscopy revealed no changes from previous findings. Esophagogastric barium examination showed a slight narrowing in the middle third of the esophagus (Figure 2).

Given the suggestive findings of a benign esophageal tumor, probably esophageal leiomyoma, thoracoscopic approach was decided. The surgical procedure was performed, under general anesthesia with pulmonary selective intubation, the patient being positioned in the left lateral decubitus. Thoracoscopic ports were placed in intercostal spaces 9 and 6 on the anterior axillary line and intercostal spaces 7 and 5 on the posterior axillary line, respectively. We started by longitudinally dividing the mediastinal pleura over the esophageal tumor, then dividing the muscular fibers of the esophagus, progressively dissecting the tumor. The tumor had polylobate aspect, well defined, with 60×55 mm (Figure 3 and 4).

The tumor was completely dissected carefully not to injure the esophageal mucosa, by monopolar cautery, thermofusion device and ultrasonic dissector (Figure 5).

After enucleation of the tumor, esophageal mucosal integrity was verified by methylene blue dyne test on the nasogastric tube and nasogastric air insufflation (Figure 6). The esophageal muscular sheet and mediastinal pleura were then sutured interrupted absorbable stitches to prevent the development of esophageal pseudo diverticulum.

The tumor was extracted in a bag and a pleural drainage was performed.

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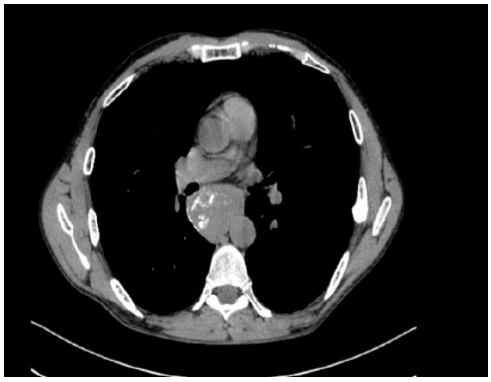

Figure 1: Esophageal Tumor CT image.

Figure 2: Esophagogastric Barium examination.

Figure 3: Intra Operative aspect of Esophageal Tumor.

The patient resumed a hydric diet from the first postoperative day and was discharged on day 7. Histopathological exam confirmed the diagnosis of esophageal leiomyoma (Figure 7).

Discussion

More than 90% of esophageal tumors are malignant. Esophageal leiomyoma is the most common benign esophageal tumor, the rest of benign tumors being extremely rare [8]. The majority develop in the muscular tunic of the esophagus, a part appearing in the muscularis mucosae [9]. Some authors consider that there is no direct relationship between tumor size and symptoms [10]. Other authors have found a correlation between symptoms and tumor size. Thus, at the mean tumor size of 5.3 cm, patients accused dysphagia, retrosternal pain, epigastric pain on palpation, regurgitation, dyspnea, weight loss [11]. In the case presented, the patient did not experience previously suggestive symptoms, the oesophageal tumor being incidentally discovered during investigations for thoracic trauma. Laboratory investigations used to highlight the esophageal tumor are esophageal-gastric barium swallow, esophagoscopy examination, computer tomography, endoscopic ultrasound. At the esophageal-gastric barium swallow appears a semilunar filling defect in the esophageal mucosa, the tumor is usually mobile with the swallowing of the barium [12-14]. The esophageal-gastric barium swallow revealed, in the presented patient, a slight narrowing in the middle third of the esophagus. Computerized tomography and endoscopic ultrasonography reveals the anatomical relationships of the tumor and differentiate from intramural and extrinsic lesions. Tomographic differentiation of esophageal leiomyomas neurofibromas, hemangiomas and other esophageal tumors is achieved with difficulty [10,13]. In the present case, chest CT scan showed an expansive process in the middle third of the esophagus, measuring 60 x 55 mm, partially calcified. Esophagoscopy is useful in

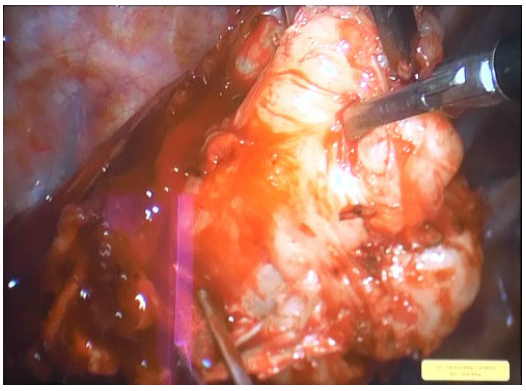

Figure 4: Dissecting the Tumor; to note the Polylobate aspect.

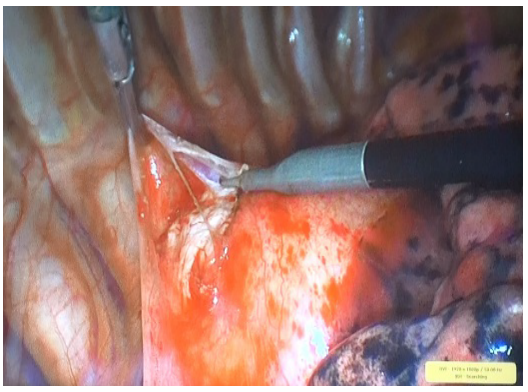

Figure 5: Cutting of the Muscular Tunic of the Esophagus.

Figure 6: Tumor dissection and Enucleation.

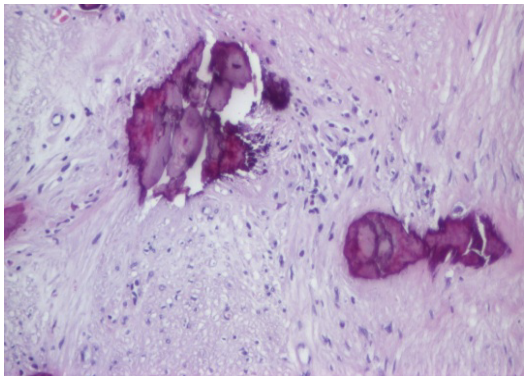

Figure 7: Histopathological aspect.

highlighting formations that protrude into the lumen and endoscopic biopsy may be beneficial in determining the nature of the tumor, but because of the risk of perforation, mediastinitis, most authors do not recommend it [6,11,15]. Preoperative endoscopic biopsy causes fibrosis between the tumor and submucosa, which increases the risk of mucosal perforation during tumor enucleation [16]. These tumors may into cyst degenerate, rarely can turn malignant [17]. There are authors who reported the discovery of a concomitant esophageal carcinoma and a leiomyoma [18]. The literature recommends surgery in symptomatic cases but also for asymptomatic cases, when the tumor is more than five centimeters, enlargement or ulceration of the mucosa [19,20]. There are authors who recommend non-surgical treatment in cases of asymptomatic or moderate symptoms, but radiological and endoscopic monitoring every 1-2 years [21]. Tumor removal can be done either by thoracotomy with esophageal resection or enucleation of tumor by thoracoscopic approach. Leiomyomas of the middle third of the esophagus are approached through right thoracotomy; tumors of the lower third require a left thoracotomy, while leiomyomas located near the gastro-oesophageal junction can be addressed through upper midline laparotomy. Esophageal resection is indicated for tumors over 8 cm, very adherent to the tumors mucosa or when there is extensive damage during mucosal dissection maneuvers [2,3]. Kent report even a thoracoscopic resection of leiomyoma measuring more than 8 cm [9]. During the last years, thoracoscopic approach of these tumors has gained many followers; Everitt made in 1992 the first thoracoscopic enucleation of an esophageal leiomyoma [22]. Thawatchai uses three points thoracoscopic approach [23]. In the present case we used four-point approach in 9 and 6 intercostal spaces, anterior axillary line, and the 7 and 5 intercostal spaces on the posterior axillary line. The advantages of thoracoscopic versus thoracotomy are: shortened hospitalization, reduced postoperative pain, quick re-expansion of the lung [24,25]. After enucleation of the tumor by blunt dissection and mucosal leak testing, myotomy is sutured with absorbable separate threads to prevent a pseudo diverticulum. According to some authors, suture of myotomy is not necessary [26], but most agree that the suture of muscular tunic is necessary to prevent protrusion of the mucosa [7,24-27].

Conclusion

Thoracoscopic enucleation is a feasible method for the treatment of esophageal leiomyomas with low morbidity rate and short hospital stay.

Conflict of interest

Authors have no conflict of interest to disclose.

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