CASE REPORT

Surgical treatment of esophageal leiomyoma larger than 5 cm in diameter: A case report and review of the literature

Xuefei Sun, Jiabang Wang, Guotao Yang

Department of Thoracic Surgery, Qilu Hospital, Shandong University, Jinan, China

ABSTRACT

Although leiomyoma is the most common benign esophageal neoplasm, it is a rare condition. Resection of the tumor is recommended in symptomatic patients, and observation is recommended in asymptomatic patients with small lesions. We discussed here a patient admitted to our hospital for dyspepsia in whom a calcified mediastinal neoplasm was diagnosed preoperatively and esophageal leiomyoma was diagnosed postoperatively. Enucleation of a leiomyoma of the esophagus is recommended and the optimal approaches should be tailored based on the location and size of the tumor.

KEY WORDS

Benign esophageal tumor; enucleation; esophageal leiomyoma


Introduction

Benign tumors of the esophagus are rare and leiomyoma is the most common benign tumor of the esophagus (1). It is reported that most leiomyomas originate the inner circular muscle layer of the distal and midthoracic esophagus, particularly at the esophagogastric junction (2,3). Middle-aged men are most frequently affected (4,5). The main symptoms usually are dysphagia and epigastric pain, but they are not specific for the disease. The size of the esophageal leiomyoma may change, a size of 1 to 29 cm has been defined in the literature (1,6,7). But most of them was samller than 5 cm in diameter. Tumor that size lager than 5cm are rare. It was easily misdiagnosed as mediastinal mass, esophageal cancer (8) and esophageal stromal tumor. Its clinical feature and management are different with other smaller esophageal leiomyoma. Here, a patient with large calcified esophageal leiomyoma who was treated in our institute is presented, initial discuss its diagnosis and management against the background of previously published cases and series.

Case report

A 42-year-old woman was admitted to our hospital with dyspepsia and esophageal reflux. There was no nausea, vomiting, or weight loss. Results of a physical examination and standard laboratory tests were normal. A chest radiograph showed a mass in the right low mediastum, and a filling defect was apparent on esophagography. Computerized tomography (CT) scanning of the chest revealed a completely calcified 70 mm × 60 mm mass at the right lower posterior mediastinum narrowing the esophagus lumen and the cacified benign mediastinal neoplasm was diagnosis (Figure 1A, 1B). Growth over the organ borders or infiltration in neighboring structures was not detected. There were no enlarged lymph nodes, and there was no evidence for distant metastases. A right thoracotomy was performed. During surgical exploration, a unregular cacified mass in the distal esophagus (Figure 1C). The mass was enucleated completely. Histopathologic examination revealed a tumor of 70 mm × 60 mm × 50 mm and cacified spindle cell fascicles without mitosis or atypia was observed (Figure 1D).

Discussion

Leiomyomas are benign tumors descending from smooth muscle cells of the esophagus. They are the most common benign tumors of the esophagus and they may occur in all parts of the esophagus, but 60% occur in the distal third, 30% in the middle, and 10% in the proximal esophagus (4). Although gastrointestinal bleeding is a common finding in gastric leiomyomas, esophageal leiomyomas rarely bleed, which may be because they do not ulcerate (9). Leiomyomas grow slowly, and half of the patients are asymptomatic and the symptoms...
are not specific. Dysphagia with concomitant epigastric pain or retrosternal burning usually appears when the tumor’s diameter becomes larger than the critical point of 4.5-5 cm (10). It seemed that the size of tumor correlates with the severity of the symptoms, but larger leiomyoma usually grow toward outside of esophageal lumen. So dysphagia don’t always proportionate to the size of tumor in larger leiomyoma. In our report, the symptoms were dyspepsia and esophageal reflux.

The diagnosis of esophageal leiomyoma is mostly not clear preoperatively. It may present as a mediastinal mass on chest radiograph and may be seen as an incidental radiologic finding. Differential diagnoses include foreign oppressed disease of esophagus, malignant esophageal tumors such as squamous or adenomatous carcinomas or leiomyosarcoma and other benign tumors. Barium swallow is the most commonly used radiologic test for esophageal lesions (4). The finding on barium swallow is a smooth filling defect in esophageal lumen without a mucosal abnormality. More esophagus was involved in large esophageal leiomyoma, the mucosa of diseased region become thinnings, and show hyperaemia. So it can be regarded as mucosa destroy when barium swallow examination, that misdiagnosis as esophageal cancer (8) or esophageal stromal tumor. Computed Tomography scans of the chest show in most cases a mass originating from esophagus without mediastinal lymphadenopathy, but in giant leiomyoma, tumor usually grow toward outside of esophageal lumen. To form soft tissue

Figure 1. A/B: Computerized tomography (CT) scanning of the chest revealed a completely calcified 70 mm × 60 mm mass at the right lower post mediastinum; C: A solitary esophageal leiomyoma with a ginger-like shape after enucleation; D: Histopathologic examination revealed calcified spindle cell fascicles without mitosis or atypia (HE×100) course was uneventful, and the patient was discharged subjectively free of complaints on the 9th postoperative day.
The muscular wall should be repaired with pedunculated masses >5 cm, associated with muscle atrophy and more muscular propulsing activity. The larger the tumor that diameter, the more likely it is to be malignant. After nucleation, the muscular wall should be closed to avoid leakage. The junction can be approached via upper midline laparotomy (15).

For leiomyoma, the location and size of the tumor are important factors in determining the appropriate surgical approach. Endoscopic approaches are possible in case of small pedunculated tumors of 2-4 cm originating from the muscularis mucosae (14). Usually to execute endoscopic mucosal resection (EMR) or endoscopic submucosal dissection (ESD). Symptomatic small leiomyomas <5 cm can be enucleated either by open surgery (15,16) or by means of video-assisted thoracoscopic surgery (VATS) (17). Transthoracic extramucosal blunt enucleation via a left- or right-sided thoracotomy is the most common procedure for small- to mid-sized esophageal leiomyoma, which is easier, faster, and safer compared to resection (1,7). Low tumors and tumors of the esophago-gastric junction can be approached via upper midline laparotomy (15). After nucleation, the muscular wall should be closed to avoid diverticular-like mucosal bulging and for the preservation of the muscular propulsing activity. The larger the tumor that diameter >5 cm, associated with muscle atrophy and more muscular defects. The muscular wall should be repaired with pedunculated masses >5 cm, associated with muscle atrophy and more muscular propulsing activity. The larger the tumor that diameter >5 cm, associated with muscle atrophy and more muscular propulsing activity. The larger the tumor that diameter >5 cm, associated with muscle atrophy and more muscular propulsing activity. The larger the tumor that diameter >5 cm, associated with muscle atrophy and more muscular propulsing activity. The larger the tumor that diameter >5 cm, associated with muscle atrophy and more muscular propulsing activity. The larger the tumor that diameter >5 cm, associated with muscle atrophy and more muscular propulsing activity. The larger the tumor that diameter >5 cm, associated with muscle atrophy and more muscular propulsing activity. The larger the tumor that diameter >5 cm, associated with muscle atrophy and more muscular propulsing activity. The larger the tumor that diameter >5 cm, associated with muscle atrophy and more muscular propulsing activity.

In conclusion, diagnosis of esophageal leiomyomas requires both endoscopic and radiologic examinations. Once the clinical diagnosis of leiomyoma is established, the operation should be performed to remove the tumor.