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Thoracoscopic and laparoscopic resection of a huge oesophageal liposarcoma: a case report

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Abstract

Oesophageal liposarcomas are particularly rare, accounting for 1.2–1.5% of all gastrointestinal liposarcomas. Surgical resection is the usual treatment. Endoscopic resection is minimally invasive but still controversial. This current case report describes a rare case of a large oesophageal liposarcoma in a 52-year-old male that presented with 10-year history of dysphagia for dry and solid food that was exacerbated by a recent common cold. Thoracoscopic and laparoscopic oesophagectomy was performed. He did not have any dysphagia or dyspnoea 1 week postoperatively. The excised specimen consisted of a polypoid mass measuring 21.0 cm × 5.1 cm. Histological examination confirmed that it was an oesophageal liposarcoma. At 1-year postoperatively, there was no sign of recurrence. Thoracoscopy and laparoscopy can be used to treat large oesophageal masses. Long-term follow-up is required as oesophageal liposarcomas tend to recur.

Keywords

Thoracoscopic and laparoscopic, oesophageal liposarcoma

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Introduction

Liposarcoma is the most common soft tissue sarcoma in adults representing around 20% of mesenchymal tumours.[1] It usually occurs in the retroperitoneum and deep soft tissues of the trunk and lower extremities.[1] Its occurrence in the oesophagus is extremely rare, accounting for 1.2–1.5% of all gastrointestinal liposarcomas.[2] This current case report describes a rare case of a large oesophageal liposarcoma that was successfully excised.

Case report

In March 2020, a 52-year-old male presented to the Department of Radiology, The First Hospital of Lanzhou University, Lanzhou, Gansu Province, China with 10-year history of dysphagia for dry and solid food. Two months prior to his admission, the condition had worsened following him having a common cold. During presentation, he complained of worsening dysphagia associated with dyspnoea.

A computed tomography (CT) scan of the chest was performed. A mixed density mass with low density (CT value was –56HU) in the upper portion and high density (CT value was 28HU) in the lower portion of the thoracic oesophagus was observed. The mass originated from the chest cavity entrance and extended intraluminally up to the gastro-oesophageal junction, measuring 21 cm (Figure 1a).

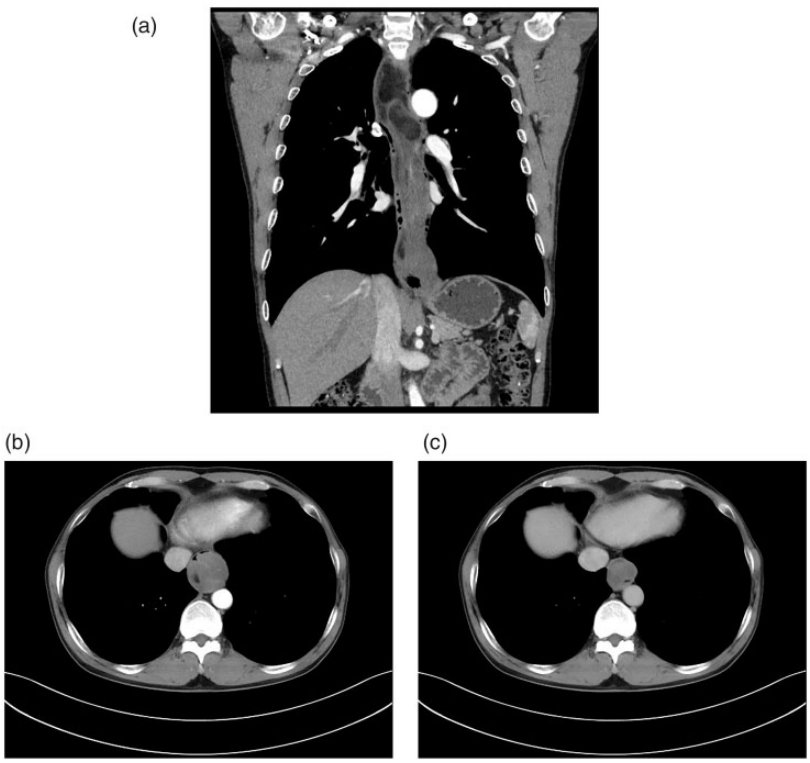

Figure 1. Computed tomography (CT) imaging of a 52-year-old male that presented with 10-year history of dysphagia for dry and solid food. (a) A CT scan of the chest showed a mixed density mass with low density in the upper portion and high density in the lower portion of the thoracic oesophagus. (b and c) CT scans confirmed that the texture of the tumour was soft and the range of activity was high.

The solid components of the enhanced scanning lesions were obviously enhanced (CT value was 40HU). The shape and size of the tumour in the lower segment of the oesophagus varied in both the arterial phase and venous phase, which confirmed that the texture of the tumour was soft and the range of activity was high (Figures 1b and 1c).

Gastroscopy showed protruding lesions in the thoracic oesophagus, narrowing of the cavity and a smooth mucous membrane on the surface (Figure 2a). Endoscopic ultrasound identified a mixed echo mass lesion in the middle and upper segment of the oesophagus, which ranged from 30 to 40 cm below the incisor and had a cross-sectional area of 146 × 110 mm (Figure 2b).

Thoracoscopic and laparoscopic oesophagectomy was performed in this current patient. The entry of the left neck anastomosis in thoracoscopic and laparoscopic resection mass was at the anterior edge of the left sternocleidomastoid muscle. Anastomosis of the oesophagogastric junction was performed and a drainage tube was placed in the neck incision. He did not have any dysphagia or dyspnoea 1 week postoperatively. The excised specimen consisted of polypoid mass measuring 21.0 cm × 5.1 cm (Figure 3a) with a smooth, white surface. The cut surface revealed yellow-white, oedematous mass. The mass was identified as an oesophageal liposarcoma.

Pathological examination showed that the tumour was highly vascular and was composed of some discrete spindle cells with little adipose tissue (Figure 3b). Immunohistochemically, the adipose cells were positive for cyclin-dependent kinase 4 and S-100 protein. Discrete spindle cells were positive for desmin and cluster of differentiation (CD)34; and negative for S-100, discovered on gist-1 (DOG-1), smooth muscle actin (SMA) and signal transducer and activator of transcription (STAT).

The patient subsequently underwent CT and oesophagoscopy every 3 months. The patient's last CT and oesophagoscopic examination did not find any signs of recurrence at 1 year postoperation.

The First Hospital of Lanzhou University does not require ethical approval for reporting individual cases. Written informed consent was obtained from the patient for publication of this case report and his images.

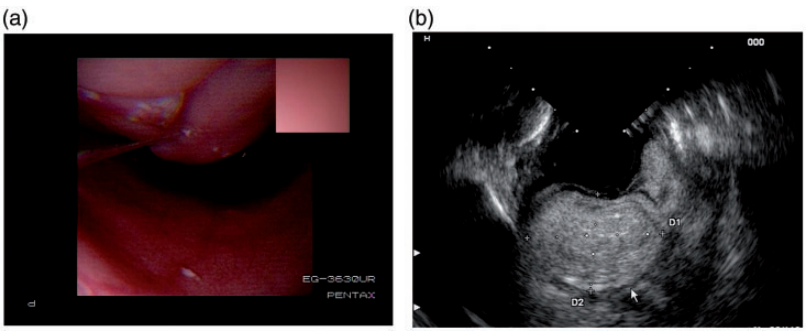

Figure 2. Imaging investigations of a 52-year-old male that presented with 10-year history of dysphagia for dry and solid food. (a) Gastroscopy showed protruding lesions in the thoracic oesophagus, narrowing of the cavity and a smooth mucous membrane on the surface. (b) Endoscopic ultrasound confirmed that the lesion had a cross-sectional area of 146 × 110 mm.

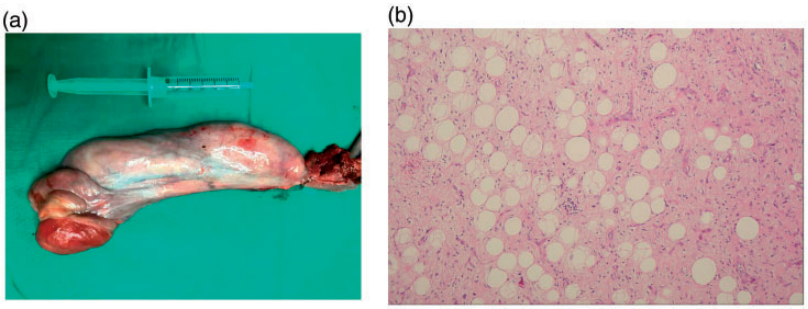

Figure 3. Representative photomicrograph of the tumour specimen excised from a 52-year-old male that presented with 10-year history of dysphagia for dry and solid food. (a) The excised specimen consisted of a 21.0 × 5.1 cm polypoid mass. The colour version of this figure is available at: http://imr.sagepub.com. (b) The adipocytes in the tumour tissue formed vacuoles and dispersed around the spindle cells (haematoxylin and eosin, scale bar 100 μm). The colour version of this figure is available at: http://imr.sagepub.com.

Discussion

Oesophageal liposarcoma was reported for the first time in 1983.[3] The current World Health Organization classification system divides liposarcomas into four subgroups: (i) atypical lipomatous tumour/well-differentiated liposarcoma; (ii) dedifferentiated liposarcoma; (iii) myxoid liposarcoma; and (iv) pleomorphic liposarcoma.[4] Among them, atypical lipomatous tumours are the most common type with the highest adipose content among all subtypes, accounting for more than 75% of the tumour tissue.[4]

The diagnosis of oesophageal liposarcoma is dependent on a pathological examination. Microscopically, adipocytes, adipoblasts and spindle cells with different degrees of differentiation can be seen; and the three cell types can mix and migrate with each other.[5]Immunohistochemical analysis shows high levels of S-100 and CD34.[5] The detection of the *MDM2* gene can further support the diagnosis.[6] The reported treatment of oesophageal liposarcoma mainly includes transthoracic oesophagectomy, transoral resection and endoscopic submucosal dissection, along with total esophagectomy.[7] It is not possible to resect large oesophageal tumours with endoscopic submucosal dissection.[5] However, compared with open surgery, thoracic laparoscopy can safely and effectively resect large oesophageal masses and reduce the surgical duration, intraoperative blood loss, lymph node dissection and postoperative complications.[8] This current patient underwent successful thoracoscopic and laparoscopic oesophagectomy and he did not have any dysphagia or dyspnoea 1 week postoperatively. At 1-year postoperatively, there was no sign of recurrence. Long-term follow-up of patients is required as the disease tends to recur even after decades following surgical resection.[6] The reporting of this case conformed to the CARE guidelines.[9]

Declaration of conflicting interest

The authors declare that there are no conflicts of interest.

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