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GI IMAGE

Slipped Liver Segment Mimicking an Esophageal Stromal Tumor

Ignacio Fuente[1] · Demetrio Cavadas[1] · Calderon Francisco[1] · Ines Oria[1] · Axel Beskow[1] · Fernando Wright[1]

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Case Report

A 36-year-old female patient with past medical history of a hiatal procedure in the neonatal period (which was not described in her medical history) for hiatal hernia was referred to our institution for thoracic pain. Abdominal examination was unremarkable. Initially, clinical tests (ECG and echocardiogram) were performed, ruling out cardiac pathology. Barium esophagram was carried out evidencing a slight filling defect on the distal third of the esophagus with no evidence of recurrent hiatal hernia. A CT scan with distention technique (PnCT) revealed a homogeneous 39 × 26 mm lesion located on the distal esophagus consistent with a submucosal tumor (Fig. 1). An upper gastrointestinal endoscopy showed no organic lesion on the mucosa. Due to the suspicion of esophageal stromal tumor, we executed an endoscopic ultrasound (EUS) which revealed a well circumscribed, hipoechoic, relatively homogeneous mass arising apparently from the fourth layer of the esophagus. The case was presented to a multidisciplinary committee and based on the presumptive diagnosis of esophageal stromal tumor, the patient was considered candidate for resection and underwent an initial laparoscopic ap-

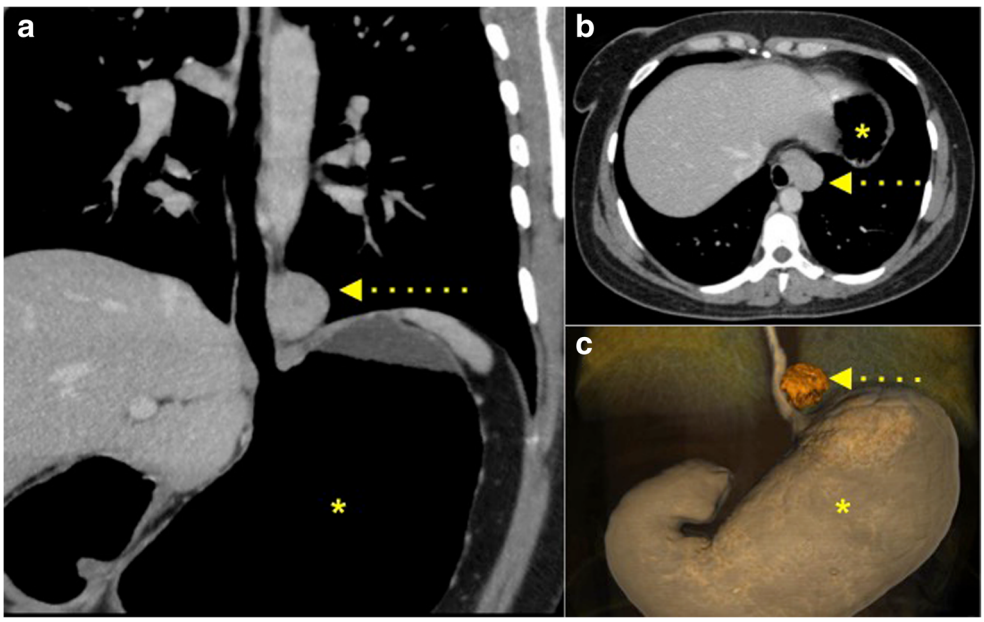

Fig. 1 Pneumo-CT image showing the slipped liver segment simulating a nodular paraesophageal lesion (yellow arrow) and the stomach (yellow asterisk) in coronal (**a**), axial (**b**), and reconstructive (**c**) views

✉ Ignacio Fuente
ignacio.fuente@hospitalitaliano.org.ar

[1] General Surgery Department, Hospital Italiano de Buenos Aires, Juan D. Perón 4190, Buenos Aires, Argentina

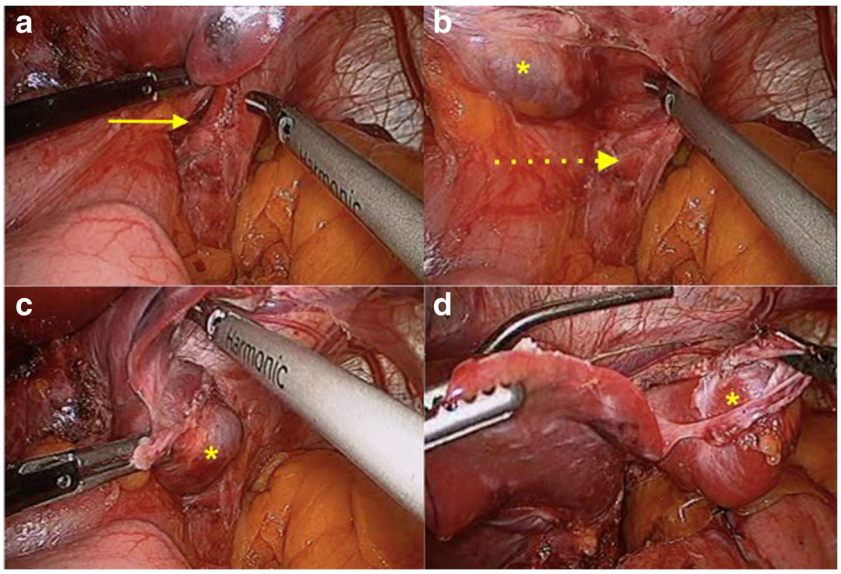

Fig. 2 Laparoscopic image evidencing the esophageal hiatus (yellow continued arrow), the left diaphragmatic crura (yellow discontinued arrow), and the slipped liver segment (yellow asterisk). As the dissection progresses, the reduction of the herniated hepatic segment is achieved

proach. During exploration, adhesions consistent with previous hiatal surgery were evident. Opening of the minor omentum was performed to access the esophageal hiatus and upon completion of its dissection, unexpectedly no esophageal tumor was recognized. Instead, we encountered the left lateral segment of the liver protruding through the esophagus hiatus as content of a hiatal hernia (Fig. 2). After realizing adhesions of the slipped hepatic segment and due to the impossibility to rule out liver tumor in the slipped segment, we performed resection of it using one white cartridge of mechanical stapler. In order to repair the hiatal defect, primary closure of the diaphragm with non-absorbable suture and standard Nissen fundoplication was carried out. No postoperative complications were noted and she was discharged on the second postoperative day. Anatomopathological examination of the resected specimen evidenced normal liver parenchyma.

Discussion

Stromal tumors, such as GIST and leiomyomas, are the most frequent nodular lesions of the distal esophagus, which appear similar on CT as intramural well defined masses with a predominantly exophitic growth pattern.[1] In this case, our preoperative presumptive diagnosis was indeed this type of tumor. Diagnostic work-up of esophageal tumors includes pneumocomputed tomography (PnCT) which is a non-invasive technique that achieves maximum lumen distension by insufflating CO_2 highlighting thickened areas of the esophageal wall, thus allowing an accurate assessment of the lesion.[2] However, in this case, the PnCT evidenced a lesion that was described as part of the esophageal wall.

Endoscopic ultrasound (EUS) allows a precise evaluation of submucosal esophageal and gastric tumors. Its main advantage lies in the assessment of the tumor's origin, whether it corresponds to an extrinsic compression or if it develops from the layers of the esophagus. The diagnostic rate depends on tumor's size and in tumors ranging 2 to 4 cm, it has been published to be 86%.[3]

Hepatic herniations through the diaphragm have been described previously, especially in trauma cases. To our knowledge, the herniation of a liver segment through the esophageal hiatus mimicking an esophageal tumor had not been reported in the literature. Although the majority of paraesophageal nodular lesions correspond to a neoplastic origin, it is important not to rule out other diagnostic possibilities such us hiatal hernia. Despite this extremely atypical form of presentation, the possibility of hepatic herniation through the esophagus hiatus is present; therefore, we must emphasize the importance of this possible diagnosis when treating paraesophageal lesion in the lower third of the esophagus, particularly if there is a history of hiatal surgery.

Authors' Contribution All authors have contributed to the design of the work, data acquisition and analysis data, revision for important intellectual content, and final approval of the version to be published.

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