Dysphagia Caused by Giant Esophageal Fibrolipoma: Imaging Findings

Disfajiye Neden Olan Dev Özefagial Fibrolipom: Görüntüleme Bulguları

Selim Doganay
Specialist, M.D.
Department of Radiology
Erciyes University, Medical Faculty
selimdoganay@gmail.com

Mecit Kantarcı
Assoc. Prof., M.D.
Department of Radiology
Atatürk University Medical Faculty
akkanrad@hotmail.com

Özet
Kırk dört yaşında kadın olgu ilerleyici disfaji ve son 1 yıldır kilo kaybı şikayetleri ile kliniğimize başvurdu. Bilgisayarlı tomografi (BT) incelemede torasik vertebra ön komşuluğunda yağ içeren kitle tespit edildi. Ayırıcı tanıda özefagial lipom, tümör ve paraözefagial herni düşünüldü. Axial BT kesitleri kitle devamlılığını göstermede yeterli olmayıp koronal ve sagital plan (multiplanar) manyetik görüntüleme sekanslarının önemi ve doğru tanıda gerekliliği görüldü. Kitle dev özefagial fibrolipom tanısı aldı.

Anahtar kelimeler: **Disfaji; Lipom; Manyetik Rezonans; Özefagus.**

This study was presented at XXIIXth National Radiology Congress, 27-31 October 2007, Antalya, Turkey.

Abstract
A 44-year-old woman presented to our hospital with progressive dysphagia and weight loss of 1 year. CT scan showed a large mass consisting of fatty tissue anterior to the thoracic vertebra. The differential diagnosis involved esophageal lipoma, tumor, and paraesophageal herniation. Axial CT images are not appropriate for precise detection of the continuity. However, coronal or sagittal plane MR images are reliable for this purpose. Thus, multiple plane imaging is very important and necessary for correct diagnosis. The mass was diagnosed as giant fibrolipoma of the esophagus

Keyword: **Dysphagia; esophagus; lipoma; magnetic resonance.**

Submitted : October 23, 2007
Revised : November 25, 2007
Accepted : August 14, 2008

Corresponding Author:
Uz Dr. Selim Doganay
Department of Radiology
Erciyes University, Medical Faculty
Kayseri - Turkey

Telephone : +90 - 352 437 49 37
E-mail : selimdoganay@gmail.com

Introduction

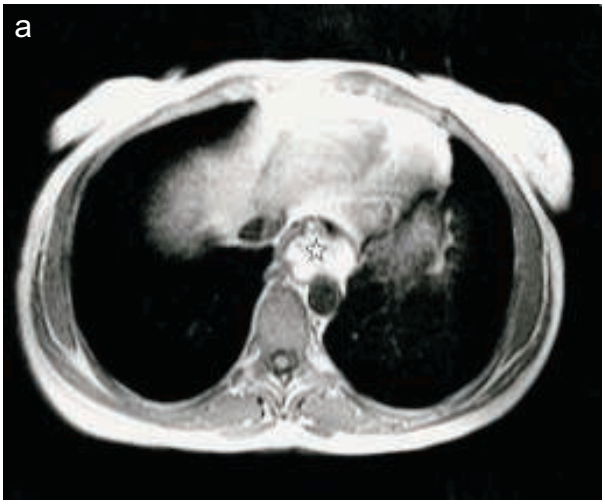
Lipoma of the alimentary tract is uncommon, with an overall incidence of 4.1%, but that of the esophagus is extremely rare with an incidence of only 0.4% (1). They originate from undifferentiated mesenchymal cells in the submucosal layer (2). Esophageal lipomas may exceed 10 cm in length and can be pedunculated or sessile (1, 3). They seem to have a predilection for the upper third of the esophagus, which is thought to be due to local effects of the propulsive forces of swallowing on the narrow cervical segment (4). Presenting symptoms are a consequence of progressive esophageal luminal obstruction, including dysphagia, chest discomfort, and regurgitation. Sloughing of the superficial mucosa with resultant low-grade gastrointestinal bleeding may occur due to from chronic friction injury as the pedunculated mass slides within the esophageal lumen or ball-valves across the gastroesophageal junction. Preoperative diagnosis can be reliably established on the basis of computed tomography, endoscopic, and endoscopic ultrasonographic findings (5, 6). In this report, we describe the advantages of multiple plane imaging for correct diagnose.

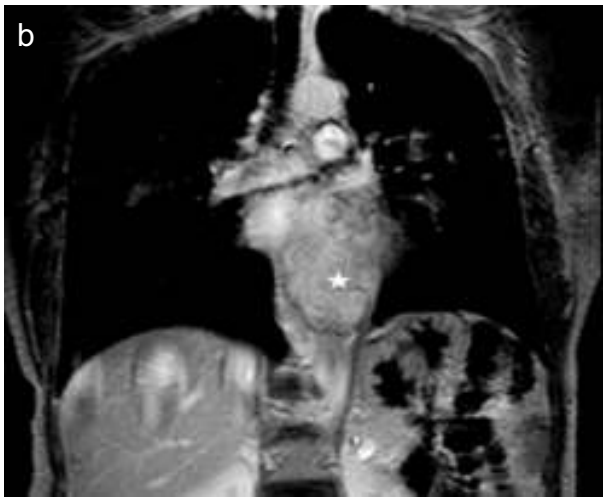
Case Report

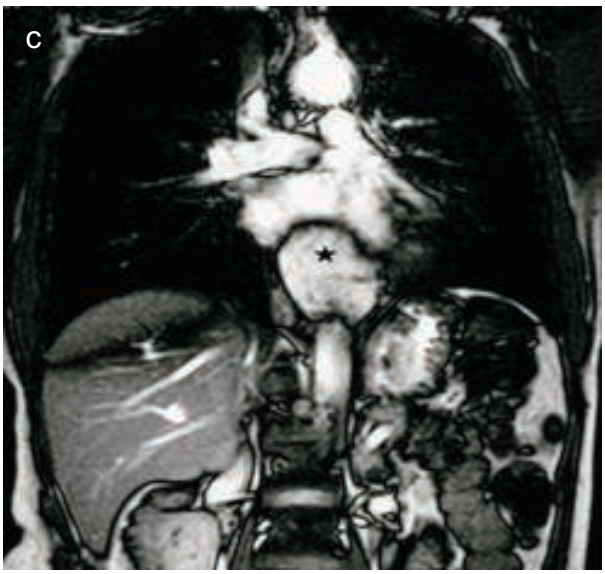
A 44-year-old woman was referred to our hospital because of progressive dysphagia and weight loss persisting for 1 year. Occasionally, she suffered from recognized chest pain and regurgitation. In her physical examination and laboratory tests, no abnormality was detected.

Computed tomography (CT) examination showed that a mass in the lower thorax was located anterior the thoracic vertebra, behind the left atrium, in the lower one-third of the esophagus (Pic.1a,b). The mass size was 75x46x33 mm. The CT attenuation of the mass was (-) 112 Hounsfield units, which was consistent with fatty tissue. No enlarged lymph nodes were seen in the neck, mediastinum, or upper abdomen. The mass seemed to extend through the esophageal hiatus to the peritoneal fatty tissue on axial sections of CT. The axial and coronal sections of MR images were used to distinguish esophageal mass from the paraesophageal herniation. The images demonstrated a nonhomogeneous hyperintense mass on T1 (Pic. 2a), T2- weighted images and decreased signal intensity on T1-weighted images with fat suppression (Pic. 2b). There was focal fibrous tissue which was hypointense on T2-weighted images. There were no peduncul or vasculary component of the mass. No herniation of the stomach or intestines to the thorax was detected. Although the findings observed on axial sections of CT and MR were similar, coronal sections of T2-weighted MR images (Pic. 2c) clearly showed the location of the fatty mass. Postoperative findings confirmed our diagnosis.

Picture 1. Contrast enhanced CT scans showed a lipomatous mass (star) anterior the thoracic vertebrae. **a:** mediastinal; **b:** paranchimal It is clearly showed that the mass is not related with lung paranchime.







Picture 2. Axial T1-weighted MR images showed a nonhomogeneous hyperintense mass (**a**; star); coronal fat suppressed T1-weighted MR images showed a lipomatous mass (star) with decreased signal intensity (**b**) and coronal Trufi T2-weighted MR imaging of the thorax showed an intraluminal esophageal lipomatous mass (**c**; star).

Discussion

Benign tumors of the esophagus are rare compared with malign tumors. Lipomas are extremely unusual, constituting only 2% of benign esophageal tumors (7), making it one of the rarest tumors reported. Fibrolipoma is a variant of lipoma but clinically does not differ much from lipoma (8). Other variants of lipoma, such as angiolipoma and angiofibrolipoma, have been reported (9, 10), but they do not significantly differ clinically from other lipomas. Lipoma occurs commonly in males above the age of 40 and is usually located in the upper esophagus (78.6%) in contrast to fibrovascular polyps, which are commonly located in the middle and lower thirds of the esophagus (67.4%). The size of these tumors varies from 2.0 to 22 cm with a mean of 8 cm (7). The etiology of these tumors is unknown even if some authors believe that the tumor arises from an embryological vestige of one of the branchial arches (11).

Esophageal lipomas may have malignant differentiation because of vascularity of large benign polyps (12), and ulceration may complicate the problem (13).

Clinically the symptoms are correlated with the size of the tumor, the commonest being dysphagia more to solids

than to liquids (86.7%). Other symptoms associated with such pedunculated tumors are chest pain, regurgitation, cough, dyspnea, recurrent chest infection, and even haemoptysis (14). Weight loss, though uncommon, can also be a presenting symptom.

The omentum sometimes herniates because of congenital defects of the diaphragm, such as Morgagni (15) or Bochdalek defects. However, omental herniation through the esophageal hiatus is rare (16). Eliska, using human cadavers of both sexes and all ages, investigated the mechanism of the development of hiatal herniation. He suggested that the phreno-esophageal membrane acts as one of the main mechanisms of competence of the cardio-esophageal junction, which prevents reflux and hiatal hernia. The membrane arises from the abdominal surface of the diaphragm and attaches to the esophagus by two limbs. He suggested that the arrangement of the membrane gradually changes with age, and that a transitional type appears during the formation of a hiatal hernia. In the transitional type, the membrane is pushed upwards by sliding of the esophagus and by subperitoneal fat (17).

Differentiation of esophageal lipomatous tumor and paraesophagial omental hernia is very important because treatment protocols and operation methods are completely different for both pathologies. Both CT and MRI can reveal the fatty nature of esophageal tumor and omental herniation. Paraesophageal omental herniation should extend through the esophageal hiatus on both sides of the diaphragm. Axial CT images are not appropriate for precise detection of the continuity. However, coronal or saggital plane MR images are reliable for this purpose. Therefore, multiple plane imaging is very important and necessary for correct diagnosis. Similar to our case, based on axial CT images, the diagnosis was suspicious but MRI with multiple planes, particularly coronal images, showed the esophagus and diaphragm from end to end, thus assisting the correct diagnosis. Coronal or saggital MR images of such patients should be obtained for definitive diagnosis.

In conclusion, rare lipomatous esophageal tumors should be differentiated from paraesophageal omental herniation. Although both CT and MRI can show the fatty nature, multiple plane imaging is required to detect the continuity of the mass and to diagnose correctly.

References

1.Mayo CW, Pagtalunan RJ, Brown DJ, Lipoma of the alimentary tract. Surgery 1963; 53:598-603.

2.Kim YH, Reiner L. Ultrastructure of lipoma. Cancer 1982; 50: 102-106.

3.Sossai P, De Bernardin M, Bissoli E, Barbazza R. Lipomas of the esophagus: a new case. Digestion 1996;57:210-212.

4.Avezzano EA, Fleischer DE, Merida MA, Anderson DL. Giant fibrovascular polyps of the esophagus. Am J Gastroenterol 1990; 85: 299-302.

5.Chak A. EUS in submucosal tumors. Gastrointest Endosc 2002; 56 Suppl 4: S43-48.

6.Heiken JP, Forde KA, Gold RP. Computed tomography as a definitive method for diagnosing gastrointestinal lipomas. Radiology 1982; 142:409-414.

7.Nabeya K. Nakata Y. Benign tumours of the esophagus in Japan along with personel experience. Dis Esopha 1991; 4:21-30.

8.Elner A, Palm NG. Pedunculated intraluminal fibro-lipoma of the esophagus. Case report. Acta Otolaryngol 1976; 82:457-462.

9.Rasenberg EI, Joosten FB. Esophageal fibrovascular polyp. J Belge Radiol 1997; 80:308.

10.Koyuncu M, Tekat A, Sesen T, et al. Giant polypoid tumour of the esophagus. Auris Nasus Larynx 2000; 27:363-366.

11.Samson PC. Zelman J. Pedunculated tumours of the esophagus. Arch Otolaryngol 1942; 36:203-211.

12.Bak YT, KimHJ, Kim JG, et al. Liposarcoma arising in a giant lipomatous polyp of the esophagus. Korean J Intern Med 1989; 4:86-89.

13.Patel J, Kieffer RW, Martin M, Avant GR. Giant fibrovascular polyp of the esophagus. Gastroenterology 1984; 87:953-956.

14.Postlethwait RW. Benign tumours and cysts of the esophagus. Surg Clin North Am 1983; 63:925-931.

15.Sekiguchi Y, Shimura S, Takishima T. Intrapleural omentum simulating pleural effusion. Chest 1994; 106:285-287.

16.Anderson TM,Gibbs JF, Kollmorgen DR, Urschel JD. Paraesophageal omental hernia mimics pleural lipomatous tumour. J Cardiovasc Surg (Torino) 1999; 40:757-759.

17.Eliska O. Phreno-oesophageal membrane and its role in the development of hiatal hernia. Acta Anat (Basel) 1973; 86:137-150.