CASE REPORT

Intramural Lipoma of the Esophagus

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Lipomas of the gastrointestinal tract are rare, and those of the esophagus are extremely rare. Indeed, fewer than 20 resected cases of esophageal lipoma have been reported in the literature. In the current case, a 71-year-old man presented with a 4-month history of a slight swallowing disturbance in the upper chest. Upper gastrointestinal endoscopy revealed a submucosal space-occupying mass, with normal mucosa, in the upper third of the thoracic esophagus; the mass was yellowish in color, soft in consistency, and about 3.5 × 3.0 cm in diameter. The patient underwent video-assisted thoracoscopic enucleation of the submucosal esophageal tumor, which pathologically, was proved to be a lipoma. [*J Chin Med Assoc* 2005;68(5):240–243]

Key Words: enucleation, esophagus, lipoma

Introduction

Benign tumors of the esophagus, especially esophageal lipomas, are uncommon. Indeed, Mayo et al[1] reported 4,000 clinical cases of benign neoplasms of the digestive tract: lipomas accounted for only 4.1% of cases, and esophageal lipomas for only 0.4%. In a review of the literature by Nora in 1964,[2] 16 of the 17 esophageal lipomas previously recorded were located intraluminally. Intramural esophageal lipoma was reported only by Kinnear in 1955,[3] and by Tolis and Shields in 1967.[4]

Most lipomas are small, do not cause symptoms, and may be found incidentally during imaging studies; however, they must be differentiated from malignancy. Rarely, lipomas become large and cause symptoms such as central ulceration with bleeding and pain, and surgical excision is required. Herein, we report a patient with intramural lipoma of the upper thoracic esophagus; we also review and discuss the relevant literature.

Case Report

A 71-year-old man was admitted to our hospital with dysphagia that had progressively worsened during the previous 4 months. The clinical interview disclosed a history of benign prostatic hyperplasia and erosive gastritis, for which he had been taking regular medication for many years. Physical examination on admission revealed normal findings. The patient's hemoglobin concentration was 14.3 g/dL, white blood cell count was 5,800/mm^3, and tumor markers (squamous cell carcinoma antigen and carcinoembryonic antigen) were within normal limits. Upper gastrointestinal endoscopy revealed a submucosal space-occupying mass with normal mucosa; the mass was yellowish in color and soft in consistency. A barium swallow contrast study disclosed a submucosal lesion with luminal narrowing (Figure 1A), and computed tomography (CT) of the chest (Figure 1B) revealed a submucosal lesion with narrowing in the upper third of the thoracic esophagus. Thus, a submucosal tumor was identified in this region, and esophageal submucosal lipoma was considered the most likely diagnosis. No lymph node, lung or liver metastasis was evident. A right-side mini-thoracotomy, with video-assisted thoracoscopic surgery, was performed. The tumor location was identified, and the overlying muscle layer of the upper third of the esophagus was incised to expose the tumor, which was completely enucleated, and which measured

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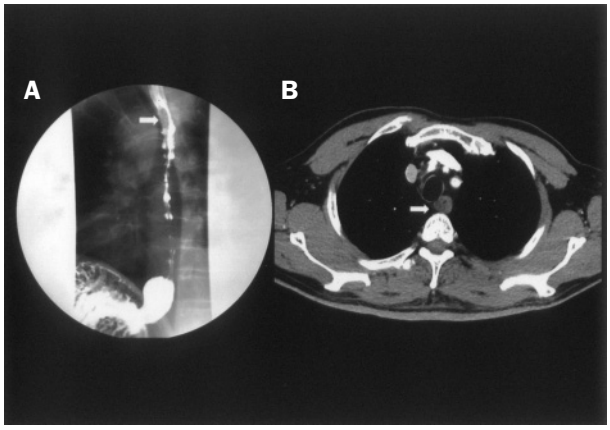

Figure 1. (A) Barium swallow showed a 3 × 2 cm smooth intramural tumor (arrow) in the upper part of the esophagus. (B) Computed tomography scan of the chest revealed a 2 × 1 cm submucosal tumor (arrow) with narrowing in the upper third of the thoracic esophagus.

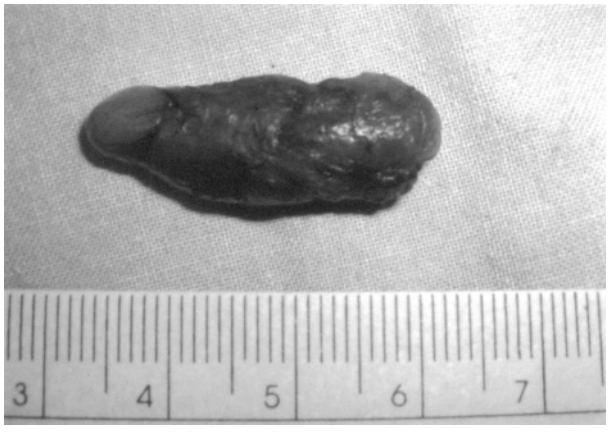

Figure 2. Macroscopic findings of the esophageal tumor: yellowish in color; adipose tissue-like appearance; 3.3 × 1.8 × 0.8 cm in size.

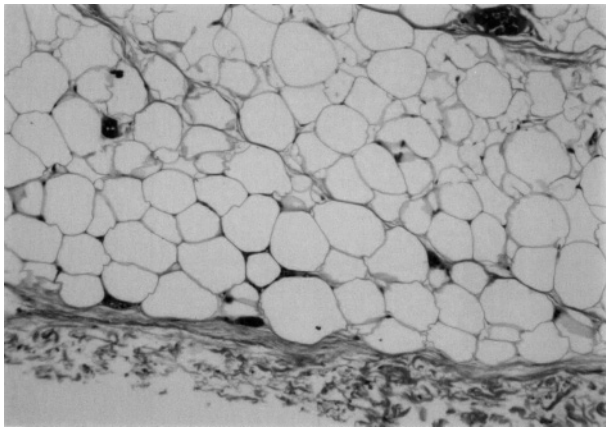

Figure 3. Microscopic appearance of the resected specimen showed lipoma composed of a collection of mature adipose tissue (hematoxylin & eosin, × 100).

3.3 × 1.8 × 0.8 cm (Figure 2). The pathology showed lipoma comprising of a collection of mature adipose tissue (Figure 3). The postoperative course was uneventful, and the patient was discharged 7 days after the operation.

Discussion

Benign tumors of the esophagus are very rare. Indeed, tumors including adenoma, fibroma, hemangioma, leiomyoma, rhabdomyoma, lipoma, and lymphangioma, account for less than 1% of all esophageal neoplasms. Lipomas have been found in all segments of the digestive tract: lesions in the colon occur most frequently; followed, in decreasing order, by lesions in the small intestine, stomach, and esophagus.[1,5,6] Esophageal lipomas account for only 0.4% of benign tumors of the alimentary tract,[1,6] and as most have been identified at autopsy, fewer than 20 surgical cases of esophageal lipoma have been reported in the literature. The largest series reported to date is that by Akiyama et al,[7] who documented 10 esophageal lipomas (7 cervical esophagus; 3 thoracic esophagus).

Benign tumors of the esophagus can be present for many years, and may be clinically silent. Many cases (> 85%) are asymptomatic and are found incidentally, whereas symptoms include dysphagia, regurgitation, and epigastralgia, depending on tumor size. The most frequent complaint in symptomatic patients is dysphagia. Esophageal lipomas can be associated with aspiration and recurrent respiratory infections. In our review of the literature, most patients had dysphagia (10/19, 52.6%), followed by epigastralgia (3/19, 15.8%), chest discomfort (2/19, 10.5%), and regurgitation, irritation on swallowing, wheezing, or respiratory distress, each in 1 patient (1/19, 5.3%) (Table 1).[1–4,7–16]

Benign tumors of the esophagus are more common in men than women, and can occur in patients aged from 4 years to over 80 years; esophageal lipomas are most likely to be diagnosed at the age of around 50 years.[1] In our review of the literature, we found 13 males (68.4%) and 6 females (31.6%), mean age 52.4 ± 19.7 years (range, 4–75 years), with esophageal lipomas (Table 1). Usually, esophageal lipomas originate in the cervical and upper thoracic esophagus,[7] and this was true in our review: 8 lipomas were found in the cervical region (44.4%); 5 in the upper esophagus (27.8%); 4 in the lower esophagus (22.2%); and 1 in the middle esophagus (5.6%) (Table 1).

Establishing a diagnosis of esophageal lipoma is usually possible if a careful history is taken, a thorough

Table 1. Cases of esophageal lipoma

Authors	No. of cases	Age (yr)	Gender	Location	Signs/symptoms	Operation	Size
Kinnear (1955)[3]	1	44	M	L	Epigastric pain	Thoracotomy	20 × 6.5 × 5
Schmidt et al (1961)[8]	1	47	M	NA	Irritation on swallowing	Thoracotomy	NA
Mayo et al (1963)[1]	1	NA	NA	NA	NA	NA	NA
Nora (1964)[2]	1	70	M	L	Dysphagia	Thoraco-abdominal	14 × 9.5 × 3
Tolis & Shields (1967)[4]	1	51	M	Mi	Epigastralgia	Thoracotomy	6 × 3
Fukuda (cited in Reference 7)	1	63	M	C	Dysphagia	NA	NA
Nomura (cited in Reference 7)	1	57	F	C	Dysphagia	Cervical resection	10 × 7.5 × 3.5
Sekiya & Ida (1972)[9]	1	69	F	C	Dysphagia	Cervical resection	13 × 5 × 5
Oosaki (cited in Reference 7)	1	49	M	C	Dysphagia	Cervical resection	15 × 10 × 3.5
Nakata (cited in Reference 7)	1	55	M	C	Regurgitation	Cervical resection	22 × 4.5 × 2.2
Tasaka et al (1982)[10]	1	54	F	C	Dysphagia	Cervical resection	15 × 4.5
Hosokawa et al (1985)[11]	1	43	M	U	Discomfort	Endoscopic resection	2.1 × 1.2
Oyamada et al (1987)[12]	1	75	F	L	Discomfort	Endoscopic resection	3.5 × 1
Nishijima (cited in Reference 7)	1	52	M	C	Dysphagia	Oral resection	NA
Akiyama et al (1990)[7]	1	75	F	U	Dysphagia	Thoracotomy	12 × 3.5 × 1.5
Zschiedrich & Neuhaus (1990)[13]	1	64	M	U	Dysphagia	Thoracotomy	22 × 6
Hasan & Mandhan (1994)[14]	1	4	M	C	Wheezing	Cervical resection	5 × 4 × 2
Sossai et al (1996)[15]	1	46	M	L	Epigastralgia	Diathermic snare	3 × 2.5
Samad et al (1999)[16]	1	6	F	U	Respiratory distress	Thoracotomy	NA
Present case (2005)	1	71	M	U	Dysphagia	Thoracotomy	3.3 × 1.8 × 0.8

C = cervical esophagus; L = lower third of the esophagus; Mi = middle third of the thoracic esophagus; NA = not available; U = upper third of the thoracic esophagus.

radiographic examination is performed, and the lesion is inspected directly with upper gastrointestinal endoscopy. Chest CT shows low-density tissue absorption, which is characteristic of adipose tissue compared with surrounding tissue.[17] Upper gastrointestinal endoscopy shows a yellow color, pliability, and a smooth surface, but histologic evaluation of endoscopic biopsy specimens is insufficient because submucosal material cannot easily be obtained by such biopsy. Despite the abovementioned difficulties, the characteristics of lipomas are fundamental to making a differential diagnosis from other neoplasms, especially malignant ones that are friable and have an irregular, ulcerated surface. Endoscopic ultrasonography has recently demonstrated usefulness in the evaluation of mural, invasive extramural, and diffuse lesions of the gastrointestinal tract.[18]

Most esophageal lipomas are small and occur singly; they do not cause symptoms and do not have to be removed. However, Hosokawa et al reported that a tumor may grow 2.5 times over 3.75 years, and that multiple growths may occur in the same segment or widely separated.[11] Such multiple growths may be ovoid, round, spherical or lobulated, and gray or grayish-yellow in color.[2] In our review, the median lesion diameter was 11.1 ± 7.0 cm (range, 2.1–22.0 cm), and the incidence of symptoms was directly proportional to tumor size.[2,7] Generally, lipomas over 2 cm in diameter appear capable of producing symptoms. Various management options are available, depending on tumor size and location, and include excision by cervical esophagotomy, mini-thoracotomy, or endoscopy.[7] Videothoracoscopy has recently been advocated as a minimally invasive and safe alternative for the removal of large, distal esophageal lipomas.[19]

In conclusion, the treatment of suspected esophageal lipoma depends on tumor size and origin. A decision about potential malignancy must be made after intraoperative histologic assessment of the resected specimen. Although lipomas are rare in the esophagus, early diagnosis and resection should be recommended for all symptomatic cases.

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