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Case Report

Large incidental esophageal leiomyoma: Radiological findings ☆

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ABSTRACT

Benign tumors of the esophagus are rare, the most common of them being leiomyomas. Malignant transformation is extremely rare, and they are often asymptomatic. Tumors larger than 5 cm frequently cause symptoms such as epigastric discomfort, heartburn, or dysphagia. We describe the case of a 57-year-old male with the presumptive diagnosis of esophageal leiomyoma, asymptomatic and incidentally discovered on a chest radiograph. The computerized tomography demonstrated an isodense and well-demarcated lesion from the esophagus, and the upper endoscopy confirmed an intact mucosa. The lesion has been stable for at least 6 years, and the patient remains asymptomatic.

Introduction

The esophagus's benign tumors are uncommon, the most common being leiomyomas.

Leiomyomas are benign smooth muscle tumors originating from the muscularis mucosa or the muscularis propria.

Small tumors are usually asymptomatic. Tumors larger than 5 cm frequently cause unspecified symptoms that can mimic malignant neoplasms, such as epigastric discomfort or dysphagia [1–3]. We describe the case of a 57-year-old male with an asymptomatic presumptive large esophageal leiomyoma, discovered incidentally on a chest radiograph.

Case report

A 57-year-old male was admitted to the emergency room with dyspnea, productive cough, and fever (before the onset of the Covid-19 pandemic). Laboratory tests showed increased inflammatory parameters (C-reactive protein of 9 mg/dL).

Chest radiography revealed patchy opacities and solitary cavitation in the upper third of the right hemithorax (Fig. 1A). Clinical and imaging findings were compatible with pneumonia, so the patient was treated with antibiotic therapy.

Additionally, an enlargement of the upper/middle mediastinum on the right was observed on the chest radiograph

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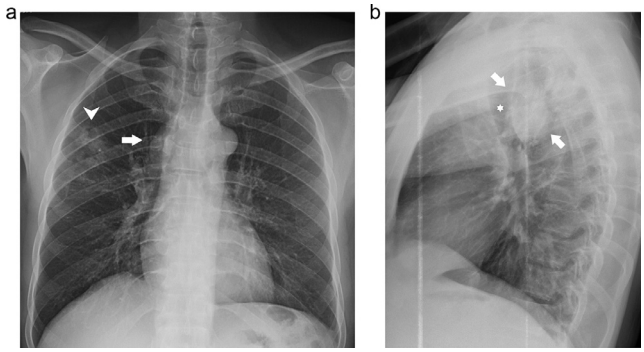

Fig. 1 – (A) Chest radiograph, anteroposterior view, shows an enlargement of the mediastinum on the right, at the level of the aortic button (arrow). The superior right hemithorax also has a nodular opacity and cavitation (arrowhead). (B) Chest radiograph, lateral view, shows oval opacity in the upper third of the thorax, posterior to the trachea (star), with regular and well-defined limits (arrows).

(Fig. 1A). The lateral view confirmed the presence of an oval lesion, with regular and well-defined margins, displacing the trachea anteriorly (Fig. 1B). The computerized tomography (CT) revealed a homogeneous solid mass in the posterior mediastinum, apparently originating from the esophageal wall and molding the esophageal lumen. The lesion had lobulated and regular margins and some coarse calcifications. It measured 6 × 3 × 5 cm (Fig. 2).

A previous chest radiograph, about 3 years before diagnosis, showed the presence and stability of the lesion (Fig. 3). At upper endoscopy, the esophageal mucosa was intact, and a submucosal mass was noted. The presumptive diagnosis, not biopsy-confirmed, of esophageal leiomyoma was assumed.

The patient was asymptomatic, so it was decided to maintain surveillance. In the follow-up, 3 years after diagnosis, the patient remained asymptomatic, and the lesion had no appreciable growth (Fig. 4).

Discussion

Even though leiomyomas are infrequent, they are the most common benign tumor of the esophagus. Esophageal leiomyomas represent 60% to 70% of benign esophageal tumors and

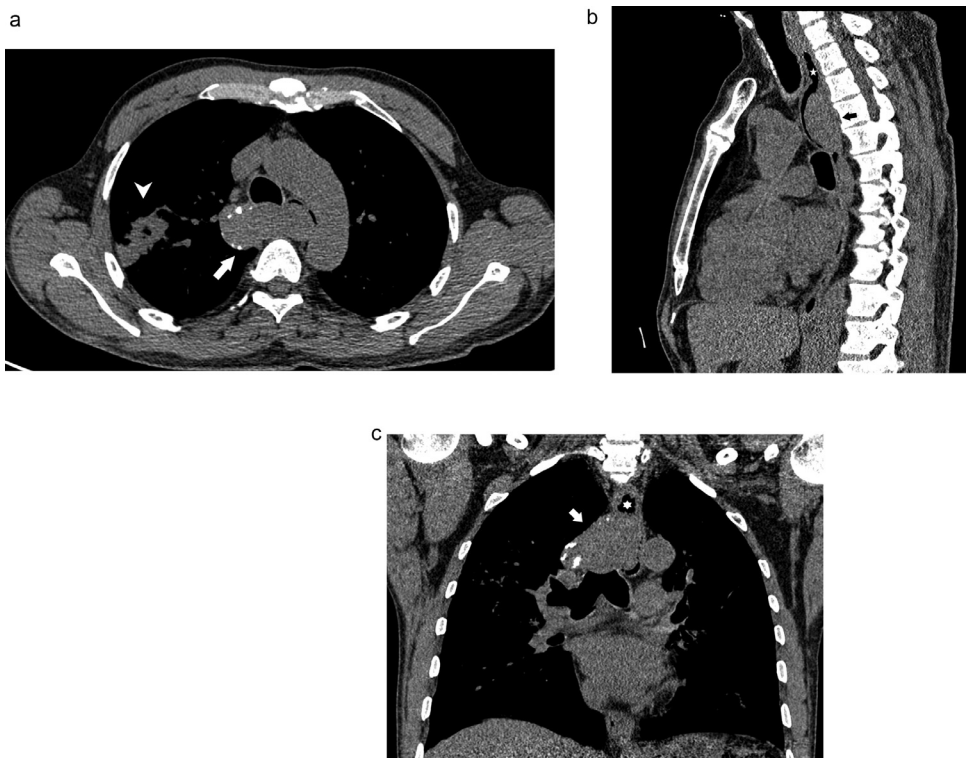

Fig. 2 – (A) Chest computerized tomography (without contrast), axial image, shows a solitary lobulated mass posterior to the trachea obliterates the esophagus lumen and measures 6 x 3 cm (arrow). It is isodense, homogeneous, and has regular contour and a few coarse calcifications. In the upper lobe of the right lung, there is consolidation and solitary cavitation due to concomitant pneumonia (arrowhead). (B) Chest computerized tomography (without contrast), sagittal image, shows the mass in the posterior and right lateral wall esophagus, measuring 5 cm in longitudinal diameter (arrow). It shapes and decreases the caliber of the esophagus lumen (star). (C) Chest computerized tomography (without contrast), coronal image, shows the large homogeneous mass with some coarse calcifications (arrow). Esophagus (star). Despite its shape and size, the patient remains asymptomatic.

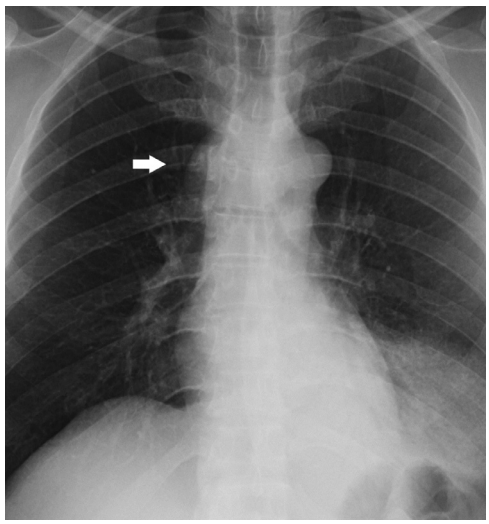

Fig. 3 – 6-year-old chest radiograph (3 years before the diagnosis), anteroposterior view, shows the enlargement of the mediastinum on the right (arrow), at the level of the aortic button. This finding is identical to the more recent exams.

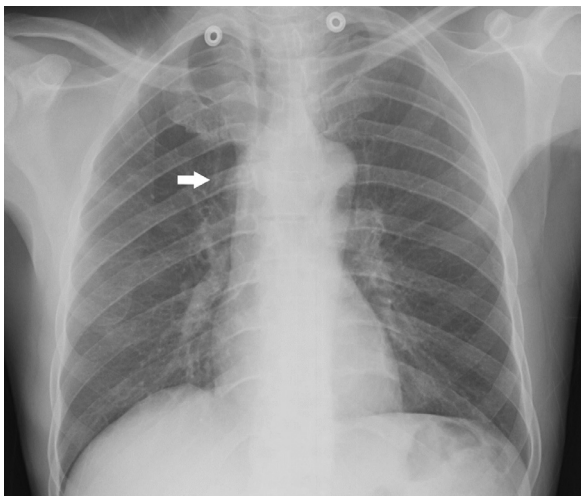

Fig. 4 – Chest radiograph, anteroposterior view. In the most recent radiograph, 6 years from Fig. 3 and 3 years from Fig. 1, the enlargement of the mediastinum on the right is stable (arrow). The patient remains asymptomatic. The resolution of the previous upper right lung cavitation is also documented.

0.4%-1.5% of all esophageal tumors. Currently, there are no defined criteria for diagnosing and treating this disease [1–3].

Esophageal leiomyomas are almost twice as common in men and are usually found in patients between 20 and 50 years old. They are slow-growing tumors, seldom multiple, more common in the distal third, and infrequent in the proximal third [1–3].

Usually, esophageal leiomyomas are intramural oval or spherical masses that may undergo cystic degeneration and infrequently have calcifications. There are just a few cases of malignant transformation [4,5].

Symptomatic esophageal leiomyomas are usually larger than 5 cm. The symptomatology is nonspecific and mimics malignant neoplasms. Symptoms include epigastric discomfort, pyrosis, dysphagia, retrosternal discomfort/pain, regurgitation, and rarely gastrointestinal bleed [1,6].

The diagnostic work-up includes chest radiography, esophagogastroduodenoscopy, endoscopic ultrasound, barium studies, chest computed tomography, magnetic resonance imaging (MRI), and positron emission tomography [7,8].

In barium swallow studies, they present as a smooth concave filling defect within the esophageal lumen, with distinct obtuse angles, and are mobile during swallowing [6].

At upper endoscopy, the lesions are mobile submucosal masses with intact mucosa. Endoscopic ultrasound shows an intramural hypoechoic, homogenous, and well-demarcated mass [2].

On CT, they are solid homogeneous low- or iso-attenuation lesions, even after administration of iodine contrast. Some lesions have coarse calcifications or cystic degeneration. On MRI, they are usually slightly hyperintense compared to muscle at T2-weighted images [2,9].

Histologically, leiomyomas comprise interlacing bundles of smooth muscle cells, well-demarcated from adjacent tissue by a connective tissue capsule. The tumor cells show minimal atypia with few mitotic figures [6].

The need for a biopsy of the esophageal submucosal tumor is controversial. Some authors recommend the biopsy of lesions originating from the submucosal and muscularis propria layers. Other authors state that if a leiomyoma is suspected, the biopsy may increase intraoperative complications and not rarely is non-diagnostic, so it should be avoided [6,7,10].

Asymptomatic lesions may be managed by follow-up. Symptomatic and large leiomyomas should be treated by surgical enucleation, endoscopic resection, or esophagectomy [2,4,11].

Differential diagnosis includes rarer gastrointestinal stromal tumors, granular cell tumors, lymphoma, and leiomyosarcomas. Lesions that grow in a short time should be suspected of malignant tumors [10].

Conclusion

Although esophageal leiomyomas are uncommon, they remain the most common benign tumor of the esophagus.

Small esophageal leiomyomas are usually asymptomatic and, on CT, appear as homogeneous intramural oval or spherical masses. When large, greater than 5 cm, they are often symptomatic and can be identified on a chest radiograph.

Small or asymptomatic tumors do not require treatment and may be managed by follow-up and endoscopic surveillance. Symptomatic large tumors usually undergo enucleation. Occasionally large asymptomatic tumors can be managed by follow-up.

Patient consent

The patient's informed consent for the publication of this case was granted.

Ethics statement

There are no ethical issues for the publication of this case report according to the standard of our institution.

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