

Case Report

Surgical treatment of esophageal leiomyoma - Case report

Kondov Borislav¹; Antović Svetozar²; Bogdanovska Magdalena³; Ferati Imran¹; Kokareva Anita⁴; Ristova Aleksandra¹; Minov Marko¹; Curakova Elena⁵; Kondov Goran^{1*}

¹University Clinic for Thoracic and Vascular Surgery, Faculty of Medicine Skopje, UKIM, North Macedonia.

²University Clinic for Digestive Surgery, Faculty of Medicine Skopje, UKIM, North Macedonia.

³Institute of Pathology, Faculty of Medicine Skopje, UKIM, North Macedonia.

⁴University Clinic for Traumatology, Orthopedics, Anesthesia, Resuscitation and Intensive Care, Faculty of Medicine Skopje, UKIM, North Macedonia.

⁵University Clinic for Gastroenterology, Faculty of Medicine Skopje, UKIM, North Macedonia.

***Corresponding Author: Goran Kondov**

University Clinic for Thoracic and Vascular
Surgery, Faculty of Medicine Skopje, UKIM, North
Macedonia.
Email: kondov@yahoo.com

Article Information

Received: July 13, 2026

Accepted: Aug 03, 2026

Published: Aug 10, 2026

Archived: www.jclinmedsurgery.com

Copyright: © Kondov G (2026).

Abstract

In this article we present a patient with rare benign tumor of the esophagus. It was 58-year-old patient with nonspecific symptoms such as dizziness, impaired sense of balance, epigastric discomfort and nausea. On esophagoscopy a submucosally located tumor with a diameter of 5 cm was visualized at 28 cm from the incisive teeth; and with biopsy a regular stratified squamous epithelium of the esophagus, in places with signs of mild acanthosis and papillomatosis was detected. After a computed tomography of the chest, endoscopic ultrasonography of the esophagus and bronchoscopy were done, surgical treatment was indicated. There was done a small right thoracotomy approach through the 5th intercostals space, under general anesthesia using a double-lumen tube. Pathohistological analysis of the tumor indicated a benign leiomyoma. Although the use of minimally invasive therapeutic procedures is technically reliable, the treatment of larger tumors (larger than 4 cm) with suspicious signs of existing signs of malignancy requires surgical treatment with open thoracotomy as in our patient.

Keywords: Esophageal leiomyoma; Surgical treatment; Endoscopic ultrasonography.

Introduction

Benign tumors of the esophagus are rare tumors with a prevalence of 1%. Depending on the part of the wall from which they originate; they can be mucosal and extra mucosal. Diagnosis is made by esophagography, esophagoscopy, endoscopic ultrasonography, and biopsy performed during these procedures [16,18].

The clinical manifestation can range from completely asymptomatic to problems with swallowing food, dysphagia, vomiting and rarely bleeding [6,16].

Surgical treatment, which most often involves enucleating of the tumor, is the method of choice. Resection of part of the esophagus and reconstruction with a stomach are rarely necessary [4,5,12,13,16].

The aim of this article is to present a rare benign tumor of the esophagus, its presentation, diagnosis, and treatment.

Case report

A 58-year-old patient presented to our institution with nonspecific symptoms such as dizziness, impaired sense of

Citation: Kondov G, Borislav K, Svetozar A, Magdalena B, Imran F, et al. Surgical treatment of esophageal leiomyoma - case report. J Clin Med Surgery. 2026; 6(2): 1234.

balance, and nausea. Due to epigastric discomfort and nausea, esophagogastroscope was indicated.

On esophagoscopy, a submucosally located tumor with a diameter of 5 cm was visualized at 28 cm from the incisive teeth. The mucosa above the tumor was intact, the tumor was of a firm consistency and it penetrated the lumen of the esophagus. There were signs of chronic inflammation in the stomach and duodenum.

A biopsy was taken from the tumor surface of tumor and the following histopathohistology showed a regular stratified squamous epithelium of the esophagus, in places with signs of mild acanthosis and papillomatosis.

This finding was an indication to perform a computed tomography of the chest, endoscopic ultrasonography of the esophagus and bronchoscopy.

On the computed tomography, a tumor (oval isodense formation) was visualized intraesophageally at the height of thx6-thx8, which fills the lumen and goes forward towards the tracheobronchial trunk and presses and narrows the trachea (Figure 1).

Bronchoscopy revealed a normal finding of the tracheobronchial tree, without external pressure.

Endoscopic ultrasonography visualized a clearly limited tumor 28 cm from the incisive teeth, with intact mucosa above the tumor. Endo sonography showed a clearly limited oval formation with a diameter of 35 mm, with anechoic structure. It was shown that the change originated from the fourth layer (Figure 2).

After previous preparation, surgical treatment was indicated, which involved a small right thoracotomy approach through the 5th intercostals space, under general anesthesia using a double-lumen tube. Visualization of the tumor that began at the level of the horizontal part of the azygos vein was. Dissection was only of the segment where the tumor was located. Longitudinal incision of the esophageal musculature above the tumor, mobilization of the tumor with care not to injure the esophageal mucosa, and removal of the tumor was done. The opened muscles of the esophagus were closed with individual sutures (Figures 3 & 4).

After a control esophagography after two days, which visualized proper contrast patency, without extravasation, oral nutrition with liquid and soft food was started.

Pathohistological analysis of the tumor indicated a benign leiomyoma. Macroscopically tumor was circumscribed, grey white solitary mass, 3x3,7 cm in greatest dimension, with whorled cut surface (Figure 5). Histopathologic examination revealed spindle cell with blunt elongated nuclei, minimal atypia and few mitotic figures, arranged in fascicles and bundles (HE x50) (Figure 6). Also, there were tumor cells positive for Cal Desmon and desman, what suggest that this tumor is leiomyoma (Figure 7,8).

Discussion

Benign tumors of the esophagus are rare tumors, accounting for 1% of all tumors of the esophagus [16]. They are often asymptomatic and are detected as an incidental finding.

Symptoms may include problems with eating, dysphagia, an unpleasant sensation when food moves through the chest, nausea with vomiting, and very rarely bleeding. Indications for surgical treatment are the presence of clinical symptoms, primarily obstruction of food flow through the esophagus, accompanied by dysphagia, vomiting, bleeding, breathing problems due to pressure on the tracheobronchial tree, etc. [10,11,16]. The patient was examined due to nausea, high CA 19-9 values, and normal abdominal ultrasound.

The diagnosis is made by esophagography, esophagoscopy with endoscopic biopsy. Histological analysis of the biopsy is the most important part in defining the benign nature of the tumor. The next necessary diagnostic procedure is endoscopic intraesophageally ultrasonography, a method that will define the tumor, its size, borders, and the layer of the wall from which it originates. This method can determine what kind of tumor it is. At the same time, the existence of enlarged and altered lymph nodes in the mediastinum can be visualized, information that would indicate the malignant nature of the tumor. Of course, in diagnostics, it is necessary to perform a computed tomography of the chest, a method that will define the morphological and anatomical characteristics of the tumor, and at the same time plan the therapeutic approach [6,16,18].

By applying these diagnostic procedures, it was determined that the patient had a benign tumor of the esophagus, located in the middle parts, at the level of the transition of the azygos vein into the vena cava, with partial progression towards the tracheobronchial trunk, with a size of 5 cm, a tumor that originates from the fourth layer (muscularis propria) after which it is assumed that it is a leiomyoma.

Depending on the origin of the tumor, it can be from the mucosa or from other layers of the esophagus, respectively, they can be mucous or extra mucosal. The exact diagnosis is made by endoscopic ultrasonography and biopsy with histological analysis of the change [1,6,7,15-18].

Knowing in which part of the esophageal wall the tumor is located, it is possible to predict what type of tumor it is. So if the tumor originates from the first and second layers (mucosa), it is probably a squamous papilloma, fibrovascular polyp or retention cyst. If the tumor originates from the third layer (submucosa), it is a lipoma, fibroma, neurofibroma, granulosa cell tumor, hemangioma and salivary gland cells. If the tumor originates from the fourth layer (muscularis propria) it is probably a leiomyoma or a cyst in the form of duplication. If the tumor originates from the fifth layer (periesophageal tissue) it is probably a cyst [1,3,6-8,15-18].

Leiomyomas are the most common benign tumors (70%). They arise from the inner layer of the muscle. They occur primarily in the middle and distal esophagus and are most common in younger individuals. They are usually asymptomatic, but may be accompanied by dysphagia, pain, and bleeding. If located in the distal esophagus, they are associated with symptoms of gastroesophageal reflux.

Leiomyomas may also be with atypia, especially if they are larger (greater than 4 cm), if they have irregular margins on ultrasonography, mixed composition, which is considered leiomyosarcoma [6,9,15,16,18].

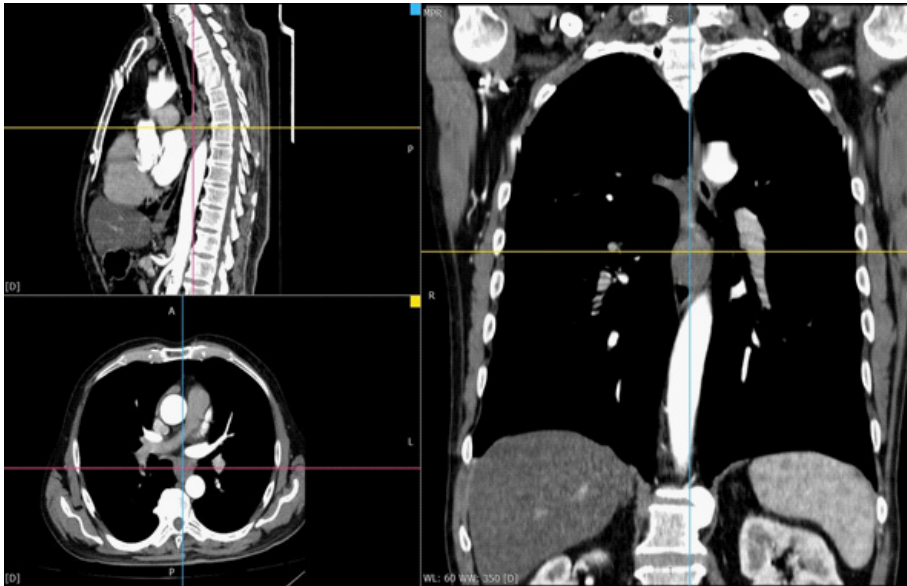


Figure 1: CT of the thorax shows leiomyoma of the esophagus.



Figure 2: Intraesophageally leiomyoma showed on esophageal esofagoultrasonography.

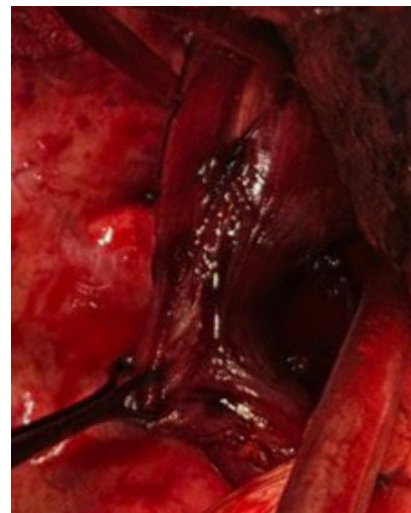


Figure 3: Leiomyoma of the esophagus showed on surgery.



Figure 4: Anatomical finding- leiomyoma.



Figure 5: Macroscopic appearance of the tumor.

Regarding the treatment of benign tumors of the esophagus, it can be:

- Observation and controls with endoscopic ultrasonography in tumors that do not give clinical symptoms and are small
- Removal of the tumor if symptoms are present
- Esophagectomy in the presence of a malignant

component, leiomyosarcomas or GIST tumors that originate from Ceil cells, cells that are positive for tyrosine kinase [6].

The surgical approach to remove the tumor of the esophagus can be with:

- Open thoracotomy, most often right
- Minimally invasive approaches, through video thoracoscopy (three-port or single-port approach) or through

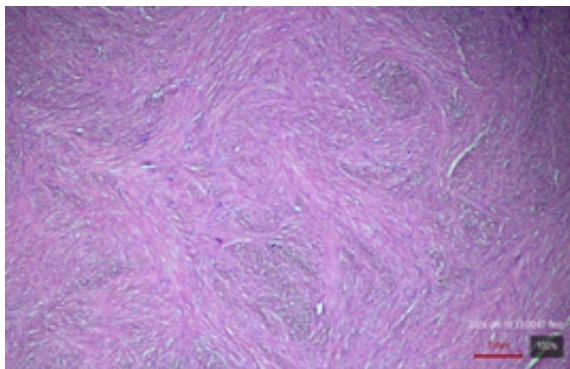


Figure 6: Histopathology of leiomyoma Hex50.

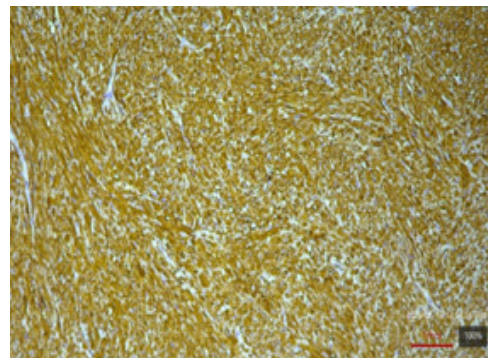


Figure 7: Tumor cells positive for salesman.

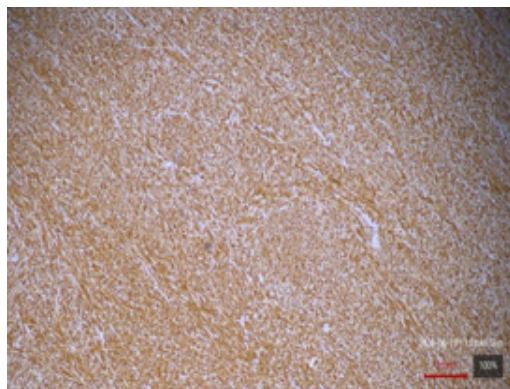


Figure 8: Tumor cells positive for desman.

video laparoscopic approach if the tumor is located in the distal parts of the esophagus. In this approach, the muscle layer is opened and the tumor is removed, taking care not to damage the esophageal mucosa. Finally, the muscle layer, which was previously opened, is closed.

- Minimally invasive endoscopic approach, where the access is through the esophagus by opening the esophageal mucosa with an esophagoscope. There are several methods for endoscopic treatment, including:

- Endoscopic mucosal resection
- Endoscopic submucosal dissection
- Submucosal tunneling endoscopic resection
- Endoscopic submucosal excavation
- Endoscopic full-thickness wall resection.

- In these procedures, an endoscope is inserted through the mouth, the esophageal mucosa is opened, and the esophageal wall is intervened.

- Esophagectomy as a method is rarely required to be performed in the treatment of benign tumors of the esophagus, the exceptions being large tumors, tumors with malignant potential, and malignantly changed benign tumors (sarcomas).

The approach may be:

- Laparotomy combined with right thoracotomy, in which part of the esophagus is resected, the stomach is dissected, a tube is formed from the stomach, it is lifted into the chest and an anastomosis is performed in the chest.

- Laparoscopy and video thoracoscopic approach to resection of the esophagus in a healthy person, stomach

dissection, mobilization in the chest and anastomosis in the chest.

Nowadays, minimally invasive procedures are increasingly used in the excision of benign tumors of the esophageal wall, whether approached from the outside of the wall (video thoracoscopic) or from the inside (oral endoscopic approach) [2,4-6,9-14,19].

These methods are truly minimally invasive, causing less pain, shorter hospital stay, and faster recovery. However, care should be taken when intervening in the esophagus itself, when approaching from the outer layer to avoid damaging the mucosa, and when approaching from the inside of the esophagus, care should be taken not to damage the muscular layer, so that the lumen of the esophagus communicates with the tissue surrounding the esophagus, located in the mediastinum (perforation) [2,4-6,9-14,19].

In addition to perforation, possible complications include bleeding, the appearance of mediastinal emphysema, mediastinitis, pleural empyema, etc.

Open mini-thoracotomy, using a double-lumen tube with exclusion of the function of the right lung, in benign tumors of the esophagus is used in the treatment of larger tumors (larger than 4 cm), the presence of adhesions, etc. (Figures 4 & 5).

Pathohistological analysis is particularly important in determining a definitive diagnosis. It is especially important to assess whether there is malignant potential. Leiomyomas are the most common benign tumors of the esophagus, well and clearly delimited from surrounding structures [15] (Figure 6).

Conclusion

Leiomyoma is the most common benign tumor in the wall of the esophagus, accounting for less than 1% of all esophageal tumors. Diagnostics involves the use of endoscopic methods (esophagoscopy and intraesophageally ultrasonography with biopsy). The use of minimally invasive therapeutic procedures (thoracoscopy, laparoscopy and oral endoscopic procedures) are technically reliable procedures that permanently solve the problem and are accompanied by minimal complications, and the hospital stay is shorter.

However, the treatment of larger tumors (larger than 4 cm) with suspicious signs of existing signs of malignancy requires surgical treatment with open thoracotomy as in our patient.

References

1. Alabdullah MN, Halaweek N, Al Ghabra Y, Hamdi M, Abo Trab MA, et al. Giant hypopharyngeal fibroepithelial polyp: A case

- report and literature review. *Ear Nose Throat J.* 2025; 104(1): 331-334. doi: 10.1177/01455613221146710. Epub 2022 Dec 16. PMID: 36525962
2. András L, Szepes Z, Tiszlavicz L, Lázár G, Paszt A. Complete laparoscopic-transhiatal removal of duplex benign esophageal tumor: Case report and review of literature. *BMC Gastroenterol.* 2021; 21(1): 47. doi: 10.1186/s12876-021-01625-8. PMID: 33530938
3. Appleman HD.-Morphology of gastrointestinal stromal tumors: Historical perspectives. *J Surg Oncol.* 2011; 104(8): 874-81. doi: 10.1002/jso.21873. PMID: 22069172
4. Chen S, Zhao Y, Zhao Y. Thoracoscopic resection of a giant esophageal schwannoma: A case report and review of literature. *Medicine (Baltimore).* 2024; 103(35): 39507. doi: 10.1097/MD.00000000000039507. PMID: 39213227
5. Bello B, Herbella FA, Allaix ME, Patti MG. Impact of minimally invasive surgery on the treatment of benign esophageal disorders. *World J Gastroenterol.* 2012; 18(46): 6764-70. doi: 10.3748/wjg.v18.i46.6764. PMID: 23239914
6. Emanuele Asti, Stefano Siboni, Andrea Sironi, Lavinia Barbieri, Luigi Bonavina. Minimally invasive surgery for submucosal benign esophageal tumors: Indications, preoperative investigations, patient selection, and clinical outcomes. *Annals of laparoscopic and endoscopic surgery.* 2019; 4. <http://dx.doi.org/10.21037/ales.2019.06.13>
7. Ferrari D, Bernardi D, Siboni S, Lazzari V, Asti E, et al. Esophageal Lipoma and Liposarcoma: A Systematic Review. *World J Surg.* 2021; 45(1): 225-234. doi: 10.1007/s00268-020-05789-4. Epub 2020. PMID: 33026474
8. Huang AT, Dominguez LM, Powers CN, Reiter ER. Granular cell tumor of the cervical esophagus: case report and literature review of an unusual cause of Dysphagia. *Head Neck Pathos.* 2013; 7(3): 274-9. doi: 10.1007/s12105-012-0408-x. Epub 2012 Nov 11. PMID: 23143390
9. Kelly R Haisley, Michael A Antiporda, Kevin M Reavis, Lee L Swanström, Per-Oral Excision of Benign Tumors of the Esophagus- THORACIC. 2018; 181-197.
10. Kent M, d'Amato T, Nordman C, Schuchert M, Landreneau R, et al. Minimally invasive resection of benign esophageal tumors- Thoracic and cardiovascular surgery. 2007; 134(1), 176-181.
11. Liu JH, Tang L, Lu Q, Lv XH, Yang JL. Submucosal Tunneling Endoscopic Resection Versus Endoscopic Submucosal Dissection for Esophageal Submucosal Tumors: A Meta-Analysis. *Dig Dis Sci.* 2026; 71(4): 1472-1479. doi: 10.1007/s10620-025-09481-2. Epub 2025 Oct 25. PMID: 41136719
12. Nie D, Zong Y, Li JJ. Difficult endoscopic resection of a giant esophageal fibrovascular polyp: Case report and literature review. *Int Med Res.* 2021; 49(8): 3000605211039801. doi: 10.1177/03000605211039801. PMID: 34459277
13. Nishikawa K, Omura N, Yuda M, Tanaka Y, Matsumoto A, et al. Video-assisted thoracoscopic surgery for localized neurofibroma of the esophagus: Case report and review of the literature. *Int Surg.* 2013; 98(4): 461-5. doi: 10.9738/INTSURG-D-12-00021.1. PMID: 24229042
14. Ryan A Macke, Katie S Nason. Minimally Invasive Resection of Benign Esophageal Lesions- Opera Tech Thorac Cardiovasc Surg. 2015; 19(4): 396-413. doi: 10.1053/j.optechstcvs.2014.12.002
15. Tran Phung Dung Tien, Lam Viet Trung, Huan Nguyen Ngoc. Minimally Invasive Enucleation of Esophageal Leiomyoma: Experience from a Single Institution *Anal of ESO Published.* 2024; 13. DOI: 10.7759/cureus.71384
16. Tsai SJ, Lin CC, Chang CW, Hung CY, Shieh TY, et al. Benign esophageal lesions: endoscopic and pathologic features. *World J Gastroenterol.* 2015; 21(4): 1091-8. doi: 10.3748/wjg.v21.i4.1091. PMID: 25632181
17. Zhi-Min Mu, Yuan-Cai Xie, Xu-Xing Peng, Hai Zhang, Gang Hui, et al. Long-term survival after enucleation of a giant esophageal gastrointestinal stromal tumor- *World J Gastroenterol.* 2014; 20(37): 13632-6. doi: 10.3748/wjg. v20.i37.13632.
18. Visaggi P, Barberio B, Gregori D, Azzolina D, Martinato M, et al. Systematic review with meta-analysis: Artificial intelligence in the diagnosis of oesophageal diseases. *Aliment Pharmacol Ther.* 2022; 55(5): 528-540. doi: 10.1111/apt.16778. Epub 2022 Jan 30. PMID: 35098562
19. Yahya Alwatari^, Dawit Ayalew, Athanasios E. Sevdalis, Daniel Scheese, Vignesh Vudatha, Walker Julliard, Rachit D. Shah -Endoscopic resection techniques of benign esophageal tumors: Literature review *Surg Endows.* 2001; 15(12): 1489. doi: 10.1007/s004640042023.