

A Well-differentiated Liposarcoma of the Prevertebral Space: A Case Report

Tianming Yang

WenZhou Medical College Affiliated Taizhou Hospital: Taizhou Hospital of Zhejiang Province

Lin Xiao (✉ 798768696@qq.com)

WenZhou Medical College Affiliated Taizhou Hospital: Taizhou Hospital of Zhejiang Province

<https://orcid.org/0000-0002-3688-3939>

Huijun Ren

WenZhou Medical College Affiliated Taizhou Hospital: Taizhou Hospital of Zhejiang Province

Case report

Keywords: Liposarcoma, Prevertebral space, Retropharyngeal space, Transoral approach

Posted Date: November 20th, 2020

DOI: <https://doi.org/10.21203/rs.3.rs-111314/v1>

License:   This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Background: Liposarcoma is common in adults. However, its occurrence in the retropharyngeal space is extremely rare, and no cases of liposarcoma in the prevertebral space have been reported before.

Case presentation: A 78-year-old man presented to the Otolaryngology Department with a 1-year history of progressive dysphagia and a 1-month history of dyspnea and dysphonia. A computed tomography scan of his neck demonstrated a large retropharyngeal mass. Magnetic resonance imaging was performed to further characterize this mass. Based on the above examinations, retropharyngeal liposarcoma was first made. The patient underwent transoral surgical excision with the help of nasal endoscope. During surgery, the tumor was found to lie in the prevertebral space. Combine with histological examination, the diagnosis was modified to liposarcoma of the prevertebral space.

Conclusions: It's difficult to distinguish the enormous retropharyngeal tumors and prevertebral tumors using imaging. Complete excision via transoral approach maybe enough for these tumors.

1. Background

Liposarcoma is one of the commonest types of soft tissue sarcoma in adults, and usually occurs in the lower extremities, retroperitoneum, perinephric space, mesentery area, and shoulders. The incidence of liposarcoma in the head and neck region is extremely low, being approximately 1.8–6.2%^[1]. As for liposarcoma in the prevertebral space, a PubMed-based search found none case reported before. Hence, we report the first case of a giant liposarcoma located in the prevertebral space.

2. Case Presentation

A 78-year-old man presented to the Otolaryngology Department with a 1-year history of progressive dysphagia and then a 1-month history of dyspnea and dysphonia. His remaining medical, surgical, family, and social history was noncontributory except that he had undergone thyroidectomy 6 years ago. Physical examination showed that the patient has no cervical swelling or palpable masses. Oropharyngeal examination showed a bulge in the posterior pharyngeal wall. A laryngoscopy was failed because the mass was extremely large. It only showed a massive bulge in the posterior pharyngeal wall occupying almost all the pharyngeal space. A computed tomography (CT) scan of his neck demonstrated a retropharyngeal mass with a fatty/solid consistency, which extended from the superior margin of the epiglottis down to the level of the seventh cervical vertebra, measuring 9.4 × 7.6 × 4.2 cm, and narrowing the laryngopharynx (Fig. 1A). Magnetic resonance imaging (MRI) of the neck was performed to further characterize the mass and revealed a retropharyngeal mass that exhibited no obvious enhancement with contrast agent (Fig. 1B). Based on the above examinations, the clinical diagnosis of retropharyngeal liposarcoma was first made. Complete excision was a big challenge to the surgeon and finally transoral surgical excision was planned under the help of nasal endoscope. Considering that tracheal intubation was impossible even with a fiberoptic bronchoscope, tracheostomy was performed under local

anesthesia. Surgery was then performed under general anesthesia. During surgery, the tumor was found to lie between the prevertebral fascia and the cervical spine (Fig. 2). And then the tumor was successfully removed without damaging the surrounding tissue. It had a fibrous capsule and was yellow, defined, soft, and 11.0 × 8.0 × 3.0 cm in size (Fig. 3). Histological examination revealed the tumor as an atypical lipomatous tumor/well-differentiated liposarcoma. Hence, the diagnosis was modified as well-differentiated liposarcoma of prevertebral space.

3. Discussion And Conclusions

It is known that there are three fascia layers in the retropharyngeal area, the oropharyngeal layer, buccopharyngeal fascia, and the prevertebral fascia. The retropharyngeal space lies between the buccopharyngeal fascia and the prevertebral fascia, and extends from the skull base to the mediastinum. The prevertebral space is located between the prevertebral fascia and the vertebra, and extends from the skull base to the third thoracic vertebra. Patients with liposarcoma are usually asymptomatic unless the tumor grows to an enormous size causing cosmetic deformity or pressure effects. Furthermore, the symptoms vary depending on the anatomical location and size of the tumor. Liposarcomas in the retropharyngeal space can produce pressure symptoms such as dysphagia, dyspnea and dysphonia. Due to the adjacent of retropharyngeal space and prevertebral space, similar symptoms can be there even in prevertebral tumors. It may difficult to distinguish the retropharyngeal tumors and prevertebral tumors using imaging. But we find the retropharyngeal tumors is often confined to left or right side. Because the retropharyngeal space is divided into left and right sides by the pharyngeal raphe at the midline, and they are not connected to each other. But if the retropharyngeal tumor is enormous, it may not be confined to one side. And in this situation, liposarcoma of the prevertebral space sometimes may be misdiagnosed as retropharyngeal liposarcoma. The preliminary diagnosis of liposarcoma can be made by either CT or MRI, but histological examination is still needed to confirm the diagnosis. Due to the small number of cases of liposarcoma of the head and neck, the management of these tumors has been largely based on experience with limb and trunk tumors. The mainstay of treatment for liposarcoma is surgical excision with adequate margins^[2]. However, considering the abundance of complex and vital neurovascular and functional upper-aero digestive structures, it is difficult to achieve adequate margins in the head and neck region. Furthermore, for liposarcoma in lymph nodes with a relatively low metastasis rate, routine neck dissection is not recommended. We believe transoral surgical excision under the help of nasal endoscope may be more beneficial than the cervical approach. The indication for adjuvant radiation therapy is still unclear, some authors^[3] believe that wide surgical excision alone is sufficient for successful treatment. However, others^[4-6] recommended that adjuvant radiotherapy is necessary, because they think liposarcoma often infiltrates into the surrounding structures microscopically even if it has a clear fibrous capsule. But in this case, the patient refuse to perform adjuvant radiotherapy. 8 months follow-up after the initial surgical procedure, he has done well without any evidence of recurrence. Hence, we believe complete excision via transoral approach maybe enough for liposarcoma in the prevertebral space, because the existence of fibrous capsule.

Liposarcoma of the prevertebral space sometimes may be misdiagnosed as retropharyngeal liposarcoma, but it does not change the surgical approach. Complete excision via transoral approach maybe enough.

Declarations

1. Ethics approval and consent to participate: Not applicable.
2. Consent for publication: Consent for publication was obtained from the patient.
3. Availability of data and materials: Not applicable.
4. Competing interests: The authors declare that they have no competing interests.
5. Funding: None.
6. Authors' contributions: LX was in charge of the acquisition of the work, TM Y was a major contributor in writing the manuscript, HJ R revised the manuscript. All authors read and approved the final manuscript.
7. Acknowledgements: Not applicable.

References

1. Yueh B, Bassewitz HL, Eisele DW. Retropharyngeal liposarcoma. *Am J Otolaryngol.* 1995; 16:331-340.
2. Vijay A, Ram L. Retroperitoneal Liposarcoma A Comprehensive Review. *Am J Clin Oncol.* 2013; 38:213-219.
3. Tan, MC, Brennan, MF, Kuk, D, Agaram NP, Antonescu CR, Qin, LX, et al. Histology-based Classification Predicts Pattern of Recurrence and Improves Risk Stratification in Primary Retroperitoneal Sarcoma. *Ann Surg.* 2016; 263:593.
4. Ozawa H, Soma K, Ito M, Ogawa K. Liposarcoma of the retropharyngeal space: Report of a case and review of literature. *Auris Nasus Larynx.* 2007; 34:417-421.
5. Takano KI, Kondoh A, Matsumiya H, Himi T. A Well-Differentiated Liposarcoma of the Hypopharynx. *Otolaryngol. Head Neck Surg.* 2011; 144:479-480.
6. Gleinser DM, Font JP, Clement CG, Mohammed BS, Underbrink MP. Primary myxoid liposarcoma of the supraglottic larynx. *Rare Tumors.* 2010; 2:41.

Figures

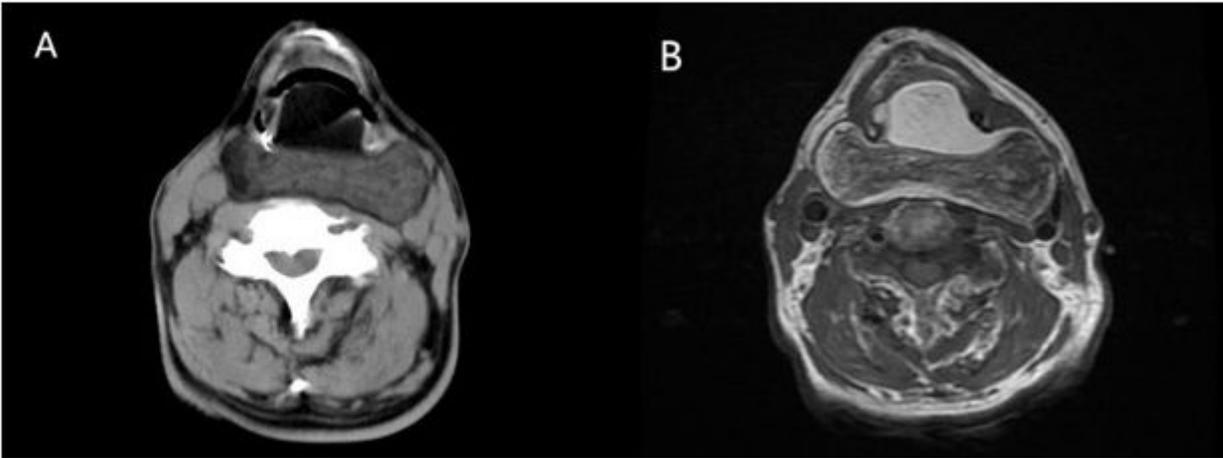


Figure 1

A CT scan of his neck demonstrated a retropharyngeal mass with a fatty/solid consistency, which extended from the superior margin of the epiglottis down to the level of the seventh cervical vertebra, measuring 9.4×7.6×4.2 cm, and narrowing the laryngopharynx. B MRI of the neck revealed a retropharyngeal mass that exhibited no obvious enhancement with contrast agent.

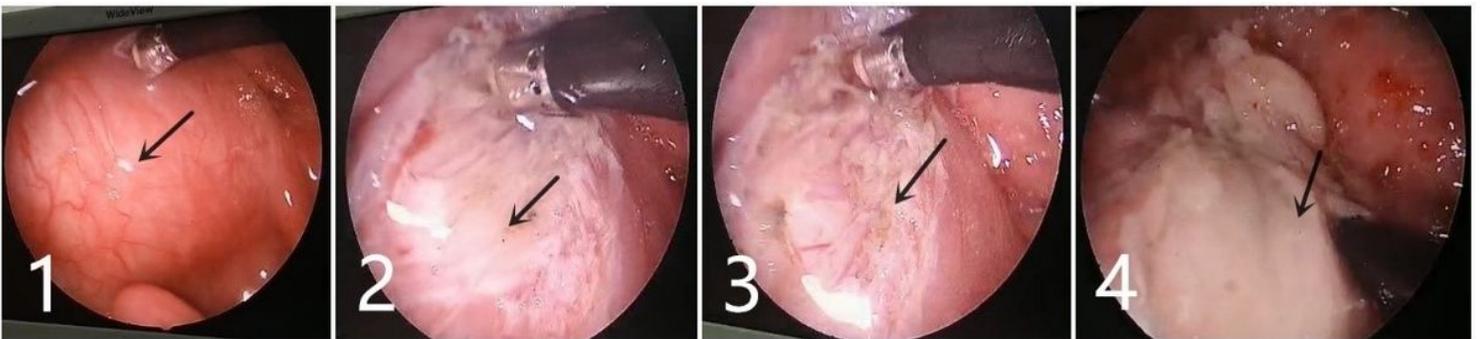


Figure 2

1 The arrow shows the mass in the posterior pharyngeal wall. 2 The arrow shows the constrictor of pharynx. 3 The arrow shows the constrictor of pharynx was been cut off. 4 The arrow shows the prevertebral fascia was been cut off.



Figure 3

Excised tumor, it had a fibrous capsule and was yellow, defined, soft, and 11.0×8.0×3.0 cm in size.