Abstract

Lipoma is a common benign soft tissue lesion that can virtually develop anywhere in the body. However, the retropharyngeal space is an extremely rare location for lipoma. We report the case of a 48-year-old man who presented with progressive dysphagia of 3 months duration. It was associated with a weight loss of 6 kg. There was no history of cough, regurgitation, or heartburn. He was a heavy smoker, but he denied consuming alcohol. On examination, the patient was noted to have a hoarse voice. Examination of the oral cavity revealed a bulge in the posterior pharyngeal wall with intact and smooth overlying mucosa. Examination of the neurological system revealed normal findings. The patient was referred to undergo a computed tomography of the neck, which demonstrated a well-defined homogeneous lesion with fat density in the retropharyngeal space. Subsequently, magnetic resonance imaging revealed a well-encapsulated midline retropharyngeal mass, measuring 4.6 x 10.2 x 13.8 cm, filling the retropharyngeal space and extending from the C2 vertebra superiorly to the inferior border of C7 inferiorly. The mass has a high signal intensity on T1- and T2-weighted images with complete suppression of the signal on the fat-saturated sequences, likely representing a retropharyngeal lipoma. The patient underwent surgical resection of the tumor by the lateral cervical approach. Histopathological examination showed lobules of mature adipose tissue, representing a lipoma. Retropharyngeal space is a very rare location of lipoma. The case highlights the importance of considering retropharyngeal lesions when encountering a patient with progressive dysphagia.

Keywords: case report, hoarse voice, dysphagia, retropharyngeal mass, lipoma

Introduction

Lipoma is the most common benign mesenchymal tumor and can virtually develop anywhere in the body [1]. It is estimated that 13% of lipomas occur in the head and neck region [1]. The most frequent location of the lipoma of the head and neck region is in the subcutaneous space of the posterior triangle [2]. However, it is rare for a lipoma to occur in the deep spaces of the neck. Primary tumors of the retropharyngeal space are exceedingly rare [2,3]. There has been a limited number of reports in the literature on retropharyngeal lipomas [2]. This tumor can present with a myriad of clinical symptoms related to pressure effect on adjacent structures, including dysphagia, dysphonia, and dyspnea. Here, we report the case of a giant retropharyngeal lipoma in a middle-aged man presenting with progressive dysphagia who has undergone successful surgical resection of the tumor.

Case Presentation

A 48-year-old man attended the primary healthcare center with a complaint of difficulty in swallowing for 3 months duration. Initially, he experienced difficulty swallowing certain solid foods. However, his difficulty in swallowing progressed to involve both solids and liquids. The difficulty in swallowing was associated with an unintentional weight loss of 6 kg in the last month. There was no history of cough, regurgitation, or heartburn. Furthermore, no history of painful swallowing or shortness of breath was given. Regarding his past medical history, he had a 20-year history of well-controlled hypertension, diabetes mellitus, and dyslipidemia. No history of peptic ulcer disease was given. The family history was remarkable for systemic lupus erythematosus in his two siblings. He was a heavy smoker (25 pack-years). He never consumed alcohol or used recreational drugs.

On examination, the patient was alert, conscious, and oriented. The vital signs were within the normal range. He had a body mass index of 27.5 kg/m². He was noted to have a hoarse voice. Examination of the oral cavity revealed a bulge in the posterior pharyngeal wall with intact and smooth overlying mucosa. On neurologic examination, the patient had normal gag reflex and normal cranial nerves examination. There was no impairment of the motor or sensory function. No lymphadenopathy or palpable neck masses were observed. Laboratory investigations, including hematological and biochemical profiles, were normal. During the laryngoscopy examination, a marked protrusion of the posterior pharyngeal wall with narrowing of the hypopharynx was noted. The larynx appeared normal.
The patient was referred to undergo a computed tomography (CT) scan of the neck, which demonstrated a well-defined homogeneous lesion with fat density in the retropharyngeal space (Figure 1). Subsequently, the patient underwent a magnetic resonance imaging (MRI) scan for further characterization and evaluation. The MRI scan revealed a well-encapsulated midline retropharyngeal mass, measuring 4.6 x 10.2 x 13.8 cm, filling the retropharyngeal space and extending from the superior border of the C2 vertebra to the inferior border of the C7 vertebra. The mass had a high signal intensity on T1- and T2-weighted images with complete suppression of the signal on the fat-saturated sequences. The mass has homogeneous signal intensity with no evidence of thick septations. It demonstrated no post-contrast enhancement nor restriction of diffusion. The mass was abutting the superior palate and caused significant narrowing of the oropharynx. The superior trachea and hypopharynx were normal. Furthermore, the common carotid arteries and internal jugular veins were displaced posterolaterally (Figure 2). Such findings were consistent with a retropharyngeal lipoma.

FIGURE 1: Sagittal CT image of the neck showing a well-defined retropharyngeal lesion with fat density (arrow).

CT: computed tomography.
FIGURE 2: MR images of the neck in the sagittal (A) and axial (B) planes showing a well-defined retropharyngeal lesion (arrows) with a high signal intensity on T2-weighted image (A) and complete suppression on fat-suppressed sequence (B).

MR: magnetic resonance.

The clinical diagnosis and the management were discussed with the patient and afterward, the patient agreed to undergo surgical resection of the tumor. The surgery was conducted under general anesthesia using the right lateral cervical approach. Careful dissection was performed to expose the lesion, which appeared as a large yellowish mass. The lesion was excised completely. The recovery was uneventful. Histopathological examination showed lobules of mature adipose tissue, representing a lipoma (Figure 3).

FIGURE 3: Low-power view (x20 magnification) histopathological image (hematoxylin and eosin) showing lobules of mature adipose cells representing a lipoma.
Postoperatively, the patient had significant improvement in his swallowing. The patient was discharged on the fourth postoperative day. At the 4-week follow-up visit, the patient regained normal swallowing and experienced weight gain.

**Discussion**

We report a rare case of a giant retropharyngeal lipoma that underwent successful surgical excision. The retropharyngeal space is a potential space in the neck that spans from the skull base to the mediastinum. It is bounded by the buccopharyngeal space anteriorly, and the prevertebral space posteriorly [3]. Primary tumors of the retropharyngeal space are uncommon.

We conducted a review of the literature published from 2000 to 2022, by searching PubMed, MEDLINE, and GoogleScholar databases. A total of 27 cases were identified, which are summarized in Table 1. The mean age of patients was 49.9 years with a range from 2 years to 81 years. Retropharyngeal lipoma was twice as common in men. The clinical presentations of patients with retropharyngeal lipomas varied widely. As in the present case, a significant number of patients presented with progressive dysphagia and unintentional weight loss. Notably, a considerable proportion of patients with retropharyngeal lipomas have a clinical picture of obstructive sleep apnea, with snoring and excessive daytime sleepiness, which was confirmed by polysomnography [2,4]. In only one case, the retropharyngeal lipoma was asymptomatic and was detected incidentally on imaging [5]. A retropharyngeal lipoma is often asymptomatic unless it reaches a considerable size to cause pressure effects on adjacent structures. In comparison with the reported cases, the present case has the largest size of retropharyngeal lipoma with a diameter of 13.8 cm.

| Year | Author       | Age | Gender | Clinical Presentation                                      | Investigations                                      | Size of Lipoma                           |
|------|--------------|-----|--------|----------------------------------------------------------|-----------------------------------------------------|------------------------------------------|
| 2001 | Senchenkov   | 49  | Female | Dysphagia, snoring, nighttime awakening                   | Laryngoscopy, CT, MRI                               | 8×5×4 cm                                |
| 2001 | Akhtar       | 76  | Male   | Dysphagia, cough, hoarseness                            | Barium swallow, CT                                   | N/A                                     |
| 2002 | Hockstein    | 64  | Male   | Obstructive sleep apnea                                 | Laryngoscopy, CT, MRI                               | N/A                                     |
| 2004 | Shivakumar   | 12  | Male   | Nasal obstruction, snoring, dysphagia                   | CT                                                   | 3.8×2.6 cm                              |
| 2005 | Haddad       | 64  | Female | Excessive daytime sleepiness, falls                      | Radiograph, CT                                       | 12×7×6 cm                               |
| 2006 | Gong         | 11  | Female | Nasal obstruction, snoring, excessive daytime sleepiness| Laryngoscopy, radiograph, CT                         | 8×4×2 cm                                |
| 2006 | Namyslowski  | 40  | Male   | Sleep disturbance                                       | CT, laryngoscopy                                     | 11.7×2.2×4.5 cm                         |
| 2007 | Pillai       | 42  | Male   | Dyspnea                                                | Radiograph, CT                                       | 8×5×11 cm                               |
| 2007 | Gupta        | 65  | Male   | Neck mass                                              | CT                                                   | N/A                                     |
| 2007 | Piccin       | 73  | Female | Snoring, nasal congestion, hyponasal voice             | CT, radiograph, nasopharyngoscopy                    | 5×2×2.5 cm                              |
| 2008 | Huang        | 17  | Male   | Snoring, dysphagia, poor sleep quality, excessive daytime sleepiness | Nasopharyngoscopy, MRI | 5×3×3 cm                                |
| 2010 | Sameer       | 35  | Male   | Neck swelling                                          | Nasopharyngoscopy, CT                                | 10×8 cm                                 |
| 2013 | Lee          | 69  | Female | Neck swelling, dysphagia, dyspnea                      | Nasopharyngoscopy, Ultrasound, CT, MRI               | 10×5×11 cm                              |
| 2013 | Chua         | 71  | Male   | Dysphagia                                             | CT, MRI                                              | 9.4×6.7 cm                              |
| 2014 | Rangappa     | 75  | Female | Neck swelling, dysphagia, dysphonia, dyspnea           | Nasopharyngoscopy, CT                                | 8×6 cm                                  |
| 2015 | Ganakalyan   | 2   | Male   | Dysphagia                                             | Nasopharyngoscopy, Radiograph, CT                    | 3.98×4.7×7.0 cm                         |
| 2015 | Luczak       | 75  | Male   | Dysphagia, sleep apnea                                 | Nasopharyngoscopy, CT                                | 8.5×5.8×7.2 cm                          |
| 2016 | Kumar        | 48  | Male   | Dysphagia, neck pain                                   | Barium swallow, radiograph, nasopharyngoscopy, MRI   | 9.5×3.8 cm                              |

4.4×2.3×1.4
Since the retropharyngeal space is not accessible for clinical inspection, cross-sectional imaging is vital to establish the diagnosis of retropharyngeal lipoma. On CT, the retropharyngeal lipoma appears as a well-circumscribed non-enhancing lesion with homogeneous fat attenuation [5]. Furthermore, MRI can further characterize the lesion and provides information on preoperative planning, and delineates the extension of the tumor [6]. The presence of post-contrast enhancement or internal septations may indicate the diagnosis of liposarcoma rather than lipoma [6]. The definite diagnosis of lipoma can be reached by histopathology.

Hence, surgical resection is the treatment of choice and full recovery is expected. The resection can be performed by transoral or transcervical approaches. Transoral robotic surgery has also been used recently [7]. While the transoral approach is often preferred since it has lower morbidity, we performed the transcervical approach considering the giant size of retropharyngeal lipoma in the present case. Lipoma may have different histologic subtypes, including angiolipoma, chondrolipoma, and osteolipoma [8]. There is no evidence of malignant transformation or recurrence after complete resection of a retropharyngeal lipoma.

Conclusions
Retropharyngeal space is a very rare location of lipoma. The case highlights the importance of considering retropharyngeal lesions when encountering a patient with progressive dysphagia. Since the retropharyngeal space is inaccessible to clinical inspection, cross-sectional imaging modalities are essential to make the diagnosis. Surgical resection is curative and the transcervical approach is safe and feasible for the resection of a giant retropharyngeal lipoma.

Additional Information
Disclosures
Human subjects: Consent was obtained or waived by all participants in this study. Ministry of Health Ethics Committee issued approval N/A. Case reports are waived by the ethics committee. Informed consent was taken from the patient for this publication. Conflicts of interest: In compliance with the ICMJE uniform disclosure form, all authors declare the following: Payment/services info: All authors have declared that no financial support was received from any organization for the submitted work. Financial relationships: All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. Other relationships: All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

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