



Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

A case of large deep fibrolipoma in the left subclavicular region that compromised the branchial plexus and thoracic duct: A case report

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ARTICLE INFO

Article history:

Received 14 March 2018
Received in revised form 14 May 2018
Accepted 18 May 2018
Available online 7 June 2018

Keywords:

Fibrolipoma
Lipoma
Branchial plexus
Thoracic duct
Benign tumors

ABSTRACT

INTRODUCTION: A fibrolipoma of the left subclavicular region, a neoplasm rarely encountered in this region, was compromising the branchial plexus and thoracic duct, causing thoracic outlet syndrome in a symptomatic patient.

CASE PRESENTATION: A 41-year-old Asian woman was brought to our ENT (ear-nose-throat) clinic because of slowly progressive swelling of the left subclavicular region since 10 years before, which became painful with time, associated with increasing subpectoral and shoulder pains, left arm swelling, and left forearm paresthesias.

DISCUSSION: The exact etiology of fibrolipomas remains disputed, and endocrine, dysmetabolic, genetic, and traumatic factors have been often considered. A fibrolipoma characteristically grows by simple expansion in a well-encapsulated fashion without the tissue infiltration that is more characteristic of liposarcomas.

CONCLUSION: The purpose of this case report is to highlight an unusually large tumor of this type in a dangerous area that caused thoracic outlet syndrome-like symptoms.

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1. Introduction

This paper describes a case of a rarely occurring tumor of the subclavicular region (i.e., fibrolipoma), which belongs to a group of benign tumors. It is more frequent in males than in females. In contrast to our case, it comprises mostly of fibrous connective tissue, well separated from the surrounding tissues. However, in our case, it was deep and painful, and caused neurological symptoms. The treatment of fibrolipomas is only surgical. As only few cases have been reported in the literature, the present case is worth reporting to provide more information about this rare entity.

The work has been reported in line with the SCARE criteria [13].

2. Case presentation

A 41-year-old Asian woman was brought to our ENT (ear-nose-throat) clinic because of a slowly progressive swelling of the left subclavicular region since 10 years before, which became painful with time, associated with increasing subpectoral and shoulder pains, left arm swelling, and left forearm paresthesias. The patient complained of weak grip, and her left hand was cold to touch, which was associated with the feeling of tremors in her left arm. Contrast computed tomography (CT) and magnetic resonance imaging

(MRI) T1- and T2-weighted sequences by fat-suppression techniques revealed a 125- × 72- × 46-mm thinly septated subpectoral hypodense mass extending from the neck to the anterior left hemithorax. The ovoidal well capsulated the mass in the retroclavicular and subclavicular regions, between the axillary artery and the vein, displaced the axillary-subclavian bundle anteriorly without extension into the neural foramina (Fig. 1). The lesion compressed the brachial plexus and was consistent with either a lipoma or liposarcoma. Ultrasonography-guided fine-needle aspiration cytology was requested and revealed a fibrolipoma. Considering the location of the fibrolipoma and the age of the patient, surgical excision via the anterior neck approach was planned and discussed with the patient. After obtaining informed consent from the patient, surgery (i.e., excision of the fibrolipoma) was performed using the anterior neck approach, and the mass was completely removed (Figs. 1 and 2). The patient was discharged on the second postoperative day and his general condition was good and he was symptom-free at 1-month follow-up (Fig. 2). A specimen was submitted for histopathological examination and was reported to demonstrate features consistent with fibrolipoma (Figs. 3 and 4).

3. Discussion and review of literature

Large fibrolipomas/lipomas of the subclavicular/thoracic outlet region are usually represented by an enlarging neck or supraclavicular mass that is typically associated with upper shoulder or arm pain. The actual incidence of thoracic outlet syndrome (TOS) due

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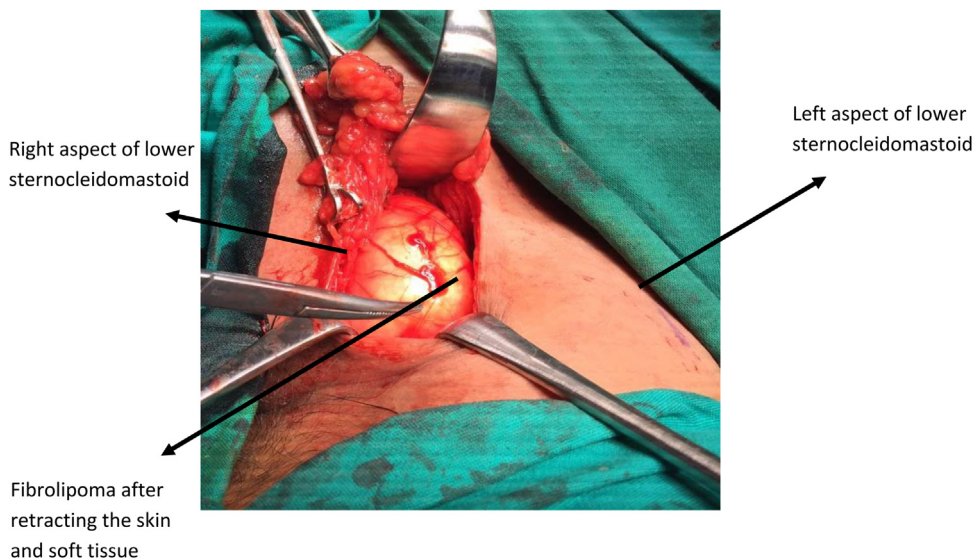


Fig. 1. Intraoperative picture of the fibrolipoma.

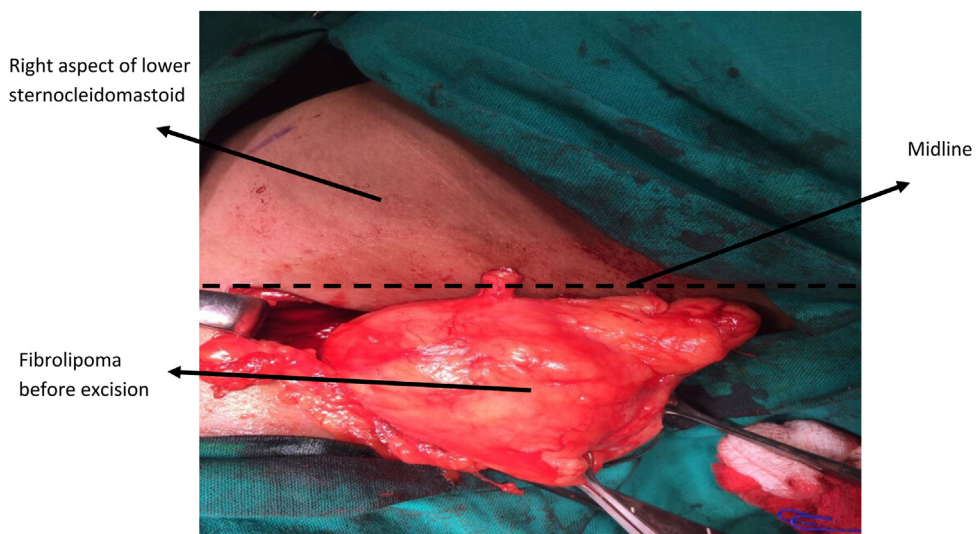


Fig. 2. Intraoperative picture of the fibrolipoma.

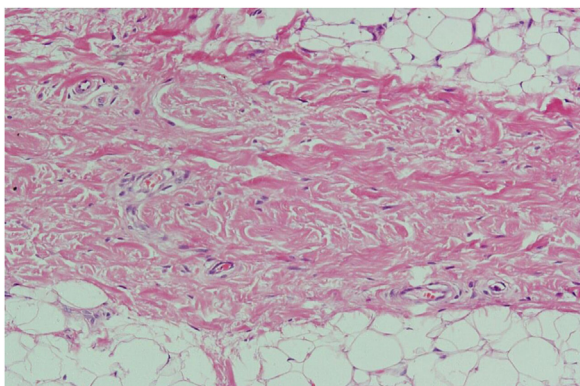


Fig. 3. Fibrolipoma with a fibrous tissue bundle interspersed among lobules of mature adipocytes. Hematoxylin-eosin staining, original magnification 20.

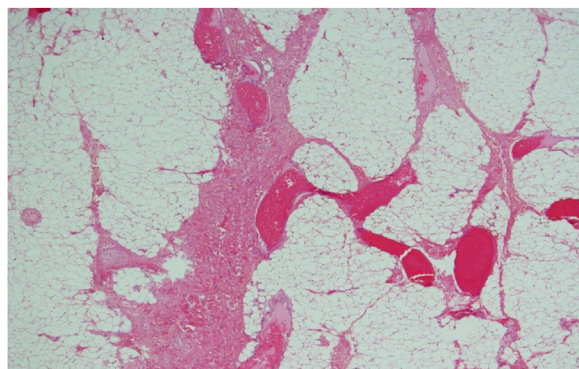


Fig. 4. Fibro-lipoma with prominent bundles of mature fibrous tissue traversing the lobules of mature adipocytes. Hematoxylin-eosin staining, original magnification H & E, 40×.

to fibrolipoma in the general population is not known because of the absence of widely recognized signs or cost-effective laboratory tests. Owing to the lack of sufficient diffusion of the syndrome in

the medical literature, it is also a poorly defined medical entity. The actual incidence seems generally low, even though in more recent studies, the incidence appears to be higher. This disease is an often-

misdiagnosed cause of chest, neck, and shoulder pains and one of the frequent upper extremity neuropathies.

The exact etiology of fibrolipomas remains disputed, and endocrine, dysmetabolic, genetic, and traumatic factors have been often considered [1]. A fibrolipoma characteristically grows by simple expansion in a well-encapsulated fashion without the tissue infiltration that is more characteristic of liposarcomas [9]. Despite their benign nature, fibrolipomas may be a challenge to the surgeon owing to their anatomical setting. The most popular surgical approach for TOS is transaxillary first-rib resection [2], where a transverse incision is made over the third rib just inferior to the axillary hairline and deepened between the pectoralis major and the latissimus dorsi muscle [3]. The scalene muscle attachments to the first rib are released, and the rib is excised extraperiosteally from the chondrosternal articulation to the costotransverse articulation [4]. The rationale for this approach is that the first-rib resection permits the widening of both the interscalenic triangle and costoclavicular space [5,6]. Other procedures include supraclavicular incision, like in our case, or the posterior subscapular approach, which is reserved for more complicated TOS cases [8–12]. Our surgical approach was suggested according to mass location and patient age. Moreover, the benign pathological outcome supported our strategy.

4. Conclusion

Benign soft tissue tumors such as infraclavicular subpectoral fibrolipomas may exert pressure on the neurovascular surrounding structures during their progressive expansion and cause TOS. Therefore, a thorough preoperative study using a radiological imaging modality such as MRI or neurophysiological tests should always be performed to prevent unintentional lesions of the involved axillo-subclavicular plexus and plan a correct surgical procedure. Benign subpectoral infraclavicular masses should be considered when evaluating a possible thoracic outlet syndrome in patients with brachialgia, loss of strength, and Raynaud's phenomenon. A thorough radiological assessment, preferably with MRI with the fat suppression technique, is mandatory to ascertain neurovascular compression by large fibrolipomas/lipomas.

Conflicts of interest

No conflict of interest to declare by any of the authors.

Funding

No sources of funding for our research.

Ethical approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institution.

Ethical approval has been exempted by our institution.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available and can be provided whenever needed.

Author contribution

Dr. Jumana: data collection, writing the paper.

Dr. Hussain: data analysis and contribution.

Dr. Imtiyaz: data collection, writing paper, study concept.

Dr. Abdulmohsen: data collection.

Registration of research studies

researchregistry3809.

Guarantor

Dr. Jumana and Dr. Imtiyaz.

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