

Thoracic venous aneurysm underlying a lipoma



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INTRODUCTION

Venous aneurysmal dilatation is a rare pathology that has been reported few times in the literature. Compared to their arterial counterparts, venous aneurysms are much less prevalent and studied, and they lack well-delineated guidelines regarding their diagnosis and management. Most of clinical practice on the topic is dependent on the scarce evidence from case reports, case series, and systematic reviews.¹⁻³ Venous aneurysms are usually classified according to the location of the affected vein into 4 main categories, which are the head and neck region, the thoracic cavity, the abdominal cavity, and the upper and lower extremities.¹ According to a recent systematic review, intra-abdominal venous aneurysms were the most frequently reported, mainly those involving the portal vein even in the absence of portal hypertension. A rarely seen association of jugular venous aneurysms with lipomas has been previously documented twice in the literature.^{4,5} Herein, to the best of our knowledge, we report an unusual case of a non-jugular venous malformation underlying a lipoma.

CASE PRESENTATION

A 23-year-old male patient presented to the clinic for the evaluation of an anterior chest skin mass. The patient noticed a nodule accidentally 2 weeks prior to presentation as it had been appearing and disappearing intermittently. He mainly reported that the nodule was bulging upon waking up from sleeping in a prone position, and regressing with movement throughout the day. The nodule was associated with few intermittent episodes of pain

Abbreviation used:

MRI: magnetic resonance imaging

and tenderness. However, there was no associated fever, chills, rash, unintentional weight loss, night sweats, or any other reported symptoms. Otherwise, the patient only recalled a distant history of a motor vehicle accident with possible trauma to the area 6 years ago. On physical examination, there was a palpable round-shaped nodule in the right side of the chest that was mildly tender, mobile, and partially reducible. The skin overlying the nodule was intact and did not show any discoloration, erythema, or changes. Examination of the lymph nodes was not significant for lymphadenopathy or tenderness. The remaining of the physical examination was normal. Based on the aforementioned clinical picture and physical examination findings, a lipoma or an epidermal inclusion cyst were highest on the initial differential diagnoses. Hence, a duplex ultrasound of soft tissue mass was ordered. The results showed a 0.7×0.6 cm hypoechoic structure in the deep fat planes of the right supraclavicular region, with no significant internal vascularity, suggestive of a small lipoma (Fig 1). After discussing the results with the patient, an excision of the mass under local anesthesia was planned. During the procedure, the lipoma was separated from the surrounding tissue, but it was incidentally discovered to be adherent to an underlying venous structure. Careful dissection of the plane between the lipoma and the venous lesion was performed without any complications, and the

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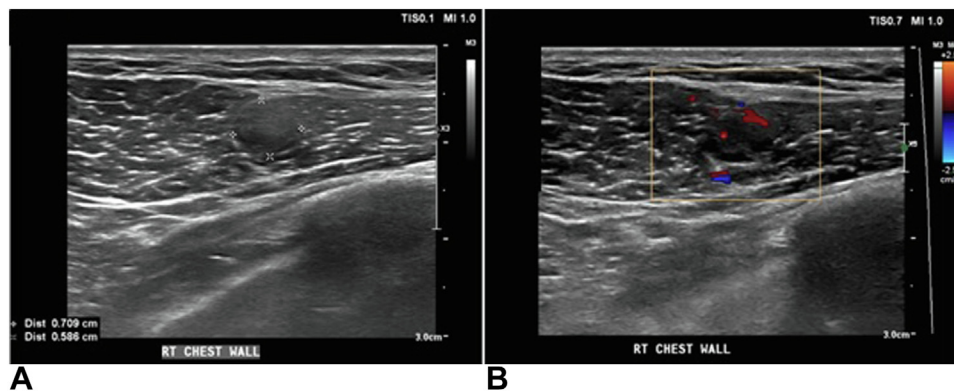


Fig 1. Ultrasound of the anterior chest. **(A)** Soft tissue mass seen in the fat planes measuring 0.7 × 0.6 cm. **(B)** duplex ultrasonography showing no internal vascularity within the lesion with small vessels surrounding it.

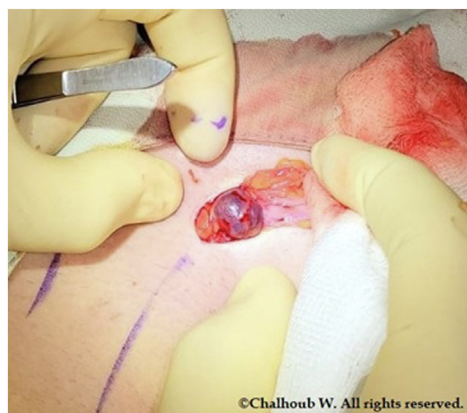


Fig 2. Intraoperative view of the venous structure encountered during the resection of the lipoma.

lipoma was successfully resected. However, the venous structure (Fig 2) was left untouched due to the high risk of hemorrhage. The histologic examination of the resected mass confirmed the presence of mature adipocytes consistent with the diagnosis of lipoma.

In order to better characterize the venous structure that was incidentally found during the surgery, contrast-enhanced magnetic resonance imaging (MRI) was planned 4 weeks after the surgery. This time frame was given in order to allow for the resolution of the inflammation after the procedure and to ensure better visualization of the region. The MRI results showed a lobulated lesion in the deep fat planes insinuating between the clavicular head and sternal head of the right pectoralis major muscle, reaching the superficial fascia. The lesion showed diffuse enhancement post contrast injection similar to the blood pool, and high T2-weighted signal intensity with near fluid signal intensity (Fig 3).

Moreover, there appeared to be a focus of low signal intensity within the lesion that may be related to calcifications or retracted blood clots or debris. In conclusion, the clinical picture, intraoperative anatomic view, and radiologic findings are highly suggestive of a low flow venous aneurysmal dilatation containing a phlebolith. The management plan was to monitor clinically and educate the patient regarding the importance of avoiding aggressive contact sports or any activities that might result in trauma to the chest area to prevent rupture of the aneurysm.

DISCUSSION

Although rare, venous aneurysms have been widely reported at various sites in the past century. However, when compared to their arterial counterparts, they remain relatively understudied and can be misdiagnosed. The differential diagnosis depends on the site and presenting symptoms but usually includes lipoma, lymphoma, neurofibroma, arteriovenous malformation, or pseudoaneurysm.⁶ In fact, misdiagnoses are not uncommon when it comes to venous aneurysms due to the lack of clear guidelines regarding the gold standard for diagnosis.⁷ In this context, several modalities are used to aid in diagnosis including venous duplex ultrasound, MRI venography, or contrast-enhanced computed tomography.⁶ In our case, the thoracic venous aneurysm, relatively small in size and underlying a lipoma was not detected on the ultrasound examination. However, in reference to the patient's history stating an intermittently bulging mass, it may be reasonable and recommended for the clinician to do further imaging like MRI venography or contrast-enhanced computed tomography to rule out any venous malformation.

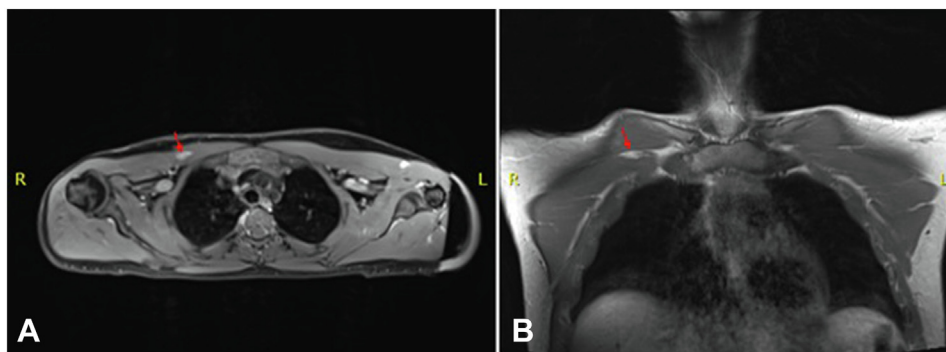


Fig 3. Appearance of the venous structure on magnetic resonance imaging with gadolinium. (A) Axial view in the T1 with gadolinium sequence. *Red arrow* pointing to the lesion that shows contrast enhancement and is located within the pectoralis muscle. (B) Coronal view in the T1 with gadolinium sequence. *Red arrow* points to the enhancing lesion that shows similar appearance to the remaining blood pool.

The etiology of venous aneurysms remains poorly elucidated. Several factors have been suggested to contribute to the formation of these aneurysms, mainly trauma, inflammation, and sclerotic changes of the vein.⁸ Therefore, it is always important to inquire about history of trauma in patients who develop venous aneurysms, just like the patient in our case; however, whether a causal relationship is present between these 2 events remains unclear.

The majority of cases are managed non-surgically. Indeed, surgical interventions are reserved for complicated or enlarging aneurysms.^{3,6} Complicated aneurysms include those that rupture, become a site for deep vein thrombosis or recurrent thromboembolism, or compress nearby structures.¹ In addition, sometimes surgical resection of the aneurysm can be attempted for cosmetic reasons in the case of large disfiguring aneurysms.⁶ Options for surgical intervention include extravascular resection or ligation and endovascular ablation.⁹ At any rate, such surgical interventions are not without risks and can themselves be associated with morbidity and mortality.⁶ Therefore, careful consideration of benefits vs surgical risks should be performed and discussed thoroughly with the patient.

CONCLUSION

In this report, we discuss the first reported case of a non-jugular venous aneurysm associated with a

lipoma. Venous aneurysms, although rare, should be considered on the differential diagnosis for an intermittently bulging skin mass.

Conflicts of interest

None disclosed.

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