Pseudoaneurysm of External vein presenting as a cervical mass: a case report

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Abstract

Venous pseudoaneurysms are one of the uncommon causes of neck swellings. Among neck veins, pseudoaneurysms of the external jugular vein are extremely rare. They may be fusiform or saccular. We present a case of male who presented with a mildly tender partially compressible swelling in the left supraclavicular region, which was found to be the external jugular vein pseudoaneurysm on Doppler ultrasound and contrast enhanced computed tomography. Saccular pseudoaneurysm of the external jugular vein are uncommon and only rarely lead to serious complications Ultrasound can allow early detection of this entity.

Introduction

Venous pseudoaneurysms are rare when compared to arterial ones. [1–3] They have been reported in several anatomic locations in the neck, the commonest site being the internal jugular vein [3,4]. Although fusiform cervical venous dilatations represent a frequent occurrence, Saccularvenous pseudoaneurysm of the external jugular vein is a very rare entity and only a few cases have been reported in the English literature [3]. Those in the head and neck region usually have a benign clinical course causing only pain and tenderness, as opposed to those at other locations that may lead to embolism or rupture [2].

We report a case of a 22- years-old male with a saccular pseudoaneurysm of the left external jugular vein diagnosed on colour Doppler and CT scan.

Case report

A 22 year old male patient, a teacher by occupation, came to our radiology department for ultrasound and CT evaluation of the neck mass on left side (swelling

spontaneously. The patient had habit of cracking neck muscles and bones since years. In last 45 days, the swelling has become painful however there was no history of trauma to neck otherwise. There was no history of tingling and numbness in the hand. There was no cyanosis of the tip of the fingers. There was no history of pain even on hyperabduction of the arm nor did the swelling increase in size on this manoeuvre indicating that the swelling did not compress the neurovascular bundle of the thoracic outlet. There was no oedema the right upper limb or dilated veins over the face. There was no history of ecchymosis or discolouration of skin suggestive of rupture of external jugular vein. It indicated pseudo aneurysm had developed slowly and progressively. There was no past history of cervical lymphadenopathy or Anti Koch's Treatment (AKT) taken.

since 2 years). Initially the swelling used to appear on

lying down position or while bending down and during

activities like running, exercising but it reduced

On examination there was a single 2 cm× 3 cm, mildly tender swelling, located on left side of the neck in the supraclavicular region with smooth surface and overlying normal skin. The swelling was firm in consistency, non-pulsatile, partially reducible. The swelling was not fixed to the skin and became tense on Valsalvamanoeuvre. External jugular vein above the

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swelling was normal. Upper limb arterial pulsations were normal. There was no evidence of any neurological involvement.

Computed Tomography with contrast enhancement revealed—a sacculardilatation in the left external jugular vein measuring 2.8 x 2.9 cm seen in the neck just lateral to the sternocleidomastoid muscle at the level ofthe C7 vertebra. The sternocleidomastoid muscle appeared bulky and heterogenous however no obvious enhancement was seen suggested old hematoma. (likely to the cause for pain)

Duplex scan was done for confirmation and it showed a sacculardilatation of the external jugular vein with internal colourflow confirming it to be apseudoaneurysm of the external jugular vein.

The pseudoaneurysm was excised and sternocleidomastoid hematoma was resected too.

Histopathological examination was suggestive of a dilated vascular structure with the presence of hemorrhage and thrombosis with disruption in endothelium consistent with the clinical diagnosis of external jugular vein pseudoaneurysm.

Discussion

Venous aneurysms can be classified as primary and secondary. The latter type is caused by trauma, by infection or venous valve insufficiency, or by an arteriovenous fistula, which is due to an increase in the venous blood flow. A primary venous aneurysm is best defined as a solitary area of venous dilatation containing all 3 layers of the vein wall that communicates with a main venous structure by a single channel and must have no association with an arteriovenous communication and **False aneurysms**, also known as a **pseudoaneurysm**, is when there is a breach in the vessel wall such that blood leaks through the wall but is contained by the adventitia or surrounding perivascular soft tissue. ¹⁰

Superficial venous true or falseaneurysm of the neck can be mistaken for lymphnode enlargement and variety of cystic swellings such as cold abscess, cystic hygroma, cavernous haemangioma, laryngocele or with arterial aneurysms. Complications of these aneurysms include thrombosis, rupture, thrombophlebitis and pulmonary embolism although very rare. Doppler ultrasound is the first imaging technique performed because it is noninvasive and can differentiate vascular from non-vascular cause of neck swelling.

These can be differentiated by CT scan or MR venography preoperatively for better planning for surgery. It shows extent of thrombosis and can more accurately demonstrate the size and extent of aneurysms.

Surgical excision is offered for either cosmetic reasons or a painful pseudoaneurysm secondary to thrombosis or phlebitis of the jugular venous system. Surgical resection also eliminates the theoretical risk of aneurysmal rupture, pulmonary embolism and allows for histopathological diagnosis. If CT or MRI shows extension of thrombosis into the anterior jugular vein (arch), modality of treatment is ligation of vein proximally and distally with or without excision and by pass graft with external jugular and subclavian vein. [6-8]

Conclusion

Ultrasound plays important role in evaluation of neck swellings because of it is easily accessible, cheaper, non invasive modality which can detect the vascular nature of the swelling. Contrast enhanced CT and MRI further adds up to its accuracy and can give fine details of the extent and anatomical relation of the swelling with the adjacent organs which can be useful during the operation.

Informed Consent

Written informed consent was sought and obtained from the patient for publication of this case report and accompanying images.

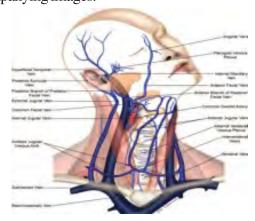
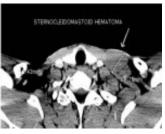


Figure 1.Drawing illustrates the major venous drainage of the head and neck. The veins are shown in various shades of blue, with veins of a similar color representing the components of a major venous system.





Fig A and B shows coronal and axial section of the neck at supraclavicular region shows saccular pseudoaneurysm of left EJV.





C. D.

Fig C and D axial and coronal section of the neck at supraclavicular region shows bulky sternocleidomastoid muscle on left side suggestive of intramuscular hematoma.

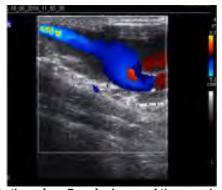


Fig E : is the colour Doppler image of the pseudoaneurysm and



Fig. F: shows the gray scale image of the pseudoaneurysm with the defect in the lateral wall of the the left EJV

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