SHORT REPORT

A Rare Case of True Transverse Cervical Artery Aneurysm

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We present the second reported case of true aneurysm of transverse cervical artery. The patient presented with a painless lump in the neck. The diagnosis was confirmed by Magnetic resonance Angiography. The treatment was by surgical resection and ligation of the artery.

Keywords: Aneurysm; Transverse cervical artery.

Introduction

Upper extremity aneurysms although less common than other peripheral artery aneurysms can give rise to the same life and limb threatening complications. The transverse cervical artery (TCA) is a branch of the thyrocervical trunk which arises from the first part of the subclavian artery (SA). Pseudo aneurysms of the TCA have been described following internal jugular venous cannulation1 and in association with Klippel-Trenaunay syndrome. To our knowledge only one true TCA aneurysm, in conjunction with a thoracic outlet syndrome, has been previously reported.2 We report a case of a true transverse cervical artery aneurysm with no associated pathology.

Case Report

A 70 year old lady was referred to the Department of Vascular Surgery by the Otorhinolaryngologist with a 10 day history of a painless swelling in the root of the left side of the neck. Apart from well controlled hypertension and previously having smoked she had no other risk factors for developing arterial disease. She had no history of symptoms relating to the cerebrovascular or peripheral vascular systems. There was no previous history of an interventional vascular procedure in the neck. On examination, a 2 × 2 cm non-tender pulsatile swelling in the left supraclavicular fossa was noted. There were no bruits audible and all the peripheral arterial pulses were palpable. The blood pressure was equal on both upper limbs. The rest of her systemic examination was normal and specifically revealed no clinical evidence of associated pulsatile masses.

An ultrasound scan revealed an aneurysm arising from one of the branches of the subclavian artery. A magnetic resonance angiography (MRA) confirmed an isolated 16 mm diameter aneurysm of the TCA supplied by a branch of the left thyrocervical trunk (Fig. 1). The aortic arch vessels and other vessels in the neck were normal. Duplex scan of lower limb vessels was normal.

In view of the risks presented by untreated peripheral arterial aneurysms3 surgical exploration was performed. Through a left supraclavicular incision, the scalene pad of fat was reflected medially to expose the area. The spinal accessory nerve was identified and protected throughout. After gaining proximal and distal control the aneurysm was excised without reconstruction (Fig. 2). Her post operative recovery was uneventful and the patient was discharged from hospital on the following day.

At a six month follow up the wound had settled well with no further abnormality noted. Histological
examination revealed a centrally dilated fusiform aneurysm with marked atherosclerosis and intimal thickening typical of a degenerative aneurysm.

**Discussion**

Most reported aneurysms in the upper limb have involved the subclavian artery. Four case reports have previously described TCA aneurysms: one true aneurysm in a patient with a thoracic outlet syndrome from a fibrous band compressing the subclavian artery. The rest being pseudoaneurysms following jugular venous cannulation and in association with a cavernous haemangioma in a patient with Klippel-Trenaunay syndrome. Given their close proximity it is likely that TCA aneurysms probably share many of the clinical features of SA and its branches aneurysms.

Aneurysms of the branches of the subclavian artery are extremely rare. A literature review resulted in 12 reported cases of inferior thyroid artery aneurysm, 3 cases of thyrocervical trunk aneurysm and only 1 case of transverse cervical artery aneurysm. Our case represents the second case reported in literature. In each case of thyrocervical artery aneurysm reported, the patients were symptomatic with either brachial plexus compression or thromboembolism. A case of asphyxia caused by tracheal compression due to inferior thyroid artery rupture has been reported. Other complications can occur with these aneurysms including dysphagia, vocal cord palsy, hoarseness.

Subclavian artery aneurysms are usually atherosclerotic but may also occur due to trauma or thoracic outlet obstruction and rarely other causes. The presenting features of SA aneurysms and its associated branches are those common to all aneurysms. They may rupture leading to exsanguination or lead to limb or digit loss from thromboembolism. They may also present as an asymptomatic pulsatile mass, as noted in this case. Furthermore, disease in the carotid arteries needs to be excluded. Due to the anatomical location of SA aneurysms, they may cause sensory or motor disturbances by compression of the brachial plexus or central neurological deficits from retrograde thromboembolism into vertebral/carotid circulation. Up to half of patients with SA aneurysms also have aortoiliac aneurysmal disease and this should be considered in the preoperative evaluation of these patients.

Both ultrasound and Computed Tomography (CT) can be used to establish the diagnosis of aneurysm but angiography (conventional or MRA) is often needed to delineate the aneurysm, identifying the vessels involved and also to outline the vascular anatomy of the aortic arch, carotid vessels and upper limb vessels prior to surgical intervention. Following intervention of SA, there is always the need to restore the blood flow to the upper limb, however this may not always be necessary following intervention for an aneurysm involving one of its branches.

Aneurysms of the subclavian artery can be managed surgically by resection with end-to-end anastomosis or an interposition grafting. Alternatively, endovascular techniques may be used which obviate the difficulties sometimes encountered with access. The transverse cervical artery however may be resected without reconstruction as long as angiography does not demonstrate that it is the predominant arterial supply to the upper limb.
Endovascular techniques were not used in this case as the vascular radiologist thought it was not technically feasible for coil embolisation because of the anatomy and size of the lesion.

Conclusion

Isolated true aneurysms of the transverse cervical artery are exceptionally rare but pose the same risks to life and limb as all other aneurysms. Intervention is necessary as in other peripheral arterial aneurysms. Magnetic resonance angiography in these cases is desirable as it delineates the anatomy well. They can then be safely resected without need for reconstruction.

References


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