SHORT REPORT

Pseudoaneurysm of the Thyrocervical Artery

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Short Report

A 50-year-old man presented with a 10-day history of pain and paresthesiae in the right arm. The patient had a history of chronic renal failure caused by bilateral renal amyloidosis for which he had been having haemodialysis for 2 years. He also had a history of chronic osteoarthritis in his hip and knee that required steroid therapy over a period of 2 years. His arteriovenous fistula had failed and he had been admitted for the open insertion of a dialysis catheter via the right subclavian artery 35 days before the present condition appeared. On the 10th day following this procedure, a rapidly enlarging mass developed deep to the incision.

Physical examination revealed a systemic arterial pressure of 130/90 mmHg, and a pulse rate of 70 beats/min. A pulsatile mass, 20 × 25 cm in size, was found in the right supraclavicular region with red discoloration of the surrounding skin (Fig. 1).

The patient was transferred to the operating theatre to excise the mass through an incision between the midpoint of the clavicle and the suprasternal notch. The right subclavian, thyrocervical and common carotid arteries were identified and controlled proximally with tapes. Vascular clamps were placed on the proximal part of right subclavian and thyrocervical arteries. About 500 cc of blood, fresh clot and organized thrombus were evacuated from the sac of a pseudoaneurysm located just distal to the the vascular clamp on the thyrocervical artery. The thyrocervical artery was ligated proximally with a 2-0 silk suture. The pseudoaneurysm sac was repaired by plication. A hemovac drain was placed next to the sac. The drain was removed on the 2nd postoperative day.

Patient was discharged without complications on the 7th postoperative day.

Discussion

Amongst aneurysms of the peripheral arteries, aneurysms in upper extremity vessels are the rarest (1%).1,2 Of these, aneurysms of the subclavian artery are the most common,1-3 followed by axillary, brachial and thyrocervical (Fig. 2).

Apart from scalenus anterior syndrome and post-traumatic lesions, atherosclerosis is the most common aetiological factor in the development of these aneurysms. Other causes include syphilis, tuberculosis, cystic medial necrosis, congenital defects and mycosis.4,5 The great majority of traumatic aneurysms, approximately 90%, are caused by penetrating injuries, mainly stab wounds, gunshot wounds and iatrogenic diagnostic procedures.5-7

Fig. 1. A pulsatile mass located right supraclavicular region giving rise to reddening and discoloration of the skin.
Pseudoaneurysm of the Thyrocervical Artery

These aneurysms are really false aneurysms since they do not involve the layers of the vessel wall. They normally occupy the centre of a haematoma arising from the leak in the vessel.\textsuperscript{5,8,9}

Clinically the patient complains of chest pain radiation to the neck together with an obvious expanding, pulsatile chest wall mass. There may be clinical evidence of distal clot embolus in the hand together with pain, paresthesia and weakness in the arm caused by compression of the brachial plexus. Pressure on the cervicothoracic ganglion may give rise to Horner’s syndrome and pressure on the vagus nerve or direct pressure on the larynx may cause hoarseness and/or stridor and dyspnoea. Transient cerebral ischaemia due to pressure on the carotid or vertebral arteries and haemoptysis as a result of erosion of lung tissue are rare.\textsuperscript{1,8–11}

Patients normally present with a mass in the neck. Pulsation is often prominent and provides an easy clue to the diagnosis of an aneurysm but not necessarily specifically of the thyrocervical trunk. It can usually be seen as a mass on the chest radiograph.\textsuperscript{5,10} Doppler ultrasound normally reveals turbulent flow in an aneurysm sac containing peripheral thrombus but with no surrounding vessel wall. CT reveals the exact location of mass and its relations to other structures (Fig. 3a and 3b). Arteriography is often helpful in determining the exact origin of the aneurysm and therefore the best surgical approach\textsuperscript{6,11} as well as the extent to which surrounding vessel flow is affected,\textsuperscript{10} and see Fig. 4a and b.

The differential diagnosis of thyrocervical artery pseudoaneurysm should include aneurysm of the subclavian artery and of its branches. Surgery should be carried out as soon as the diagnosis has been established because of the inevitable outcome of enlargement and rupture. Surgical technique should include the excision of the hematoma and repair of...
the vessel wall with trimming, patching and even replacement graft if necessary. The alternative is to tie off the vessel proximally and distally as long as there is no evidence of malperfusion of the tissues. This is a perfectly safe and acceptable procedure where the thyrocervical trunk is concerned.

References