SHORT REPORT

Tuberculous Aneurysm of Extracranial Carotid Artery


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Incidence of extracranial carotid aneurysm is rare and represents a challenge to treatment strategy. Two patients presented to us a couple of years apart with pulsatile neck swellings. We propose that the extracranial carotid artery pseudoaneurysm was as a result of direct extension from tuberculous lymphadenitis and discuss the management of these patients.

Keywords: Extracranial; Carotid; Tuberculous; Aneurysm.

Introduction

Incidence of extracranial carotid aneurysm is rare and represents a challenge to treatment strategy. In the young the commonest cause is Takayasu’s arteritis and less commonly the aneurysm is mycotic. The incidence of tuberculosis is high in our environment and has varied presentations. Petrovic et al. in their experience found atherosclerosis to be the commonest cause of aneurysm formation. They reported one pseudoaneurysm due to tuberculosis. Treatment modality for carotid artery aneurysms has evolved from open surgery to endovascular intervention, with obvious treatment benefits such as shorter convalescent period and less procedural complications.

Report

A 27 year old lady presented with a progressive, 5 cm by 6 cm pulsatile swelling in the left anterior triangle of the neck and hoarseness of voice for 2 months. She had been on anti-tuberculous therapy (ATT) for tuberculosis over the past 6 months after fine needle aspiration cytology (FNAC) of her neck nodes was positive for tuberculosis. A CT angiogram (CTA) showed a pseudoaneurysm of the left common carotid artery (CCA) and multiple nodes in the neck (Fig. 1). Intra-operatively there was a 3 cm by 0.5 cm defect in the lateral wall off the CCA with multiple nodes adherent to its posterior wall. The defect was repaired with a goretex patch and a lymph node biopsy done. No shunt was used. The biopsy report of the aneurysm wall and the node was caseating granulomatous inflammation consistent with tuberculosis. The patient was continued on ATT and the wound healed well. There was however some residual hoarseness of voice on follow-up at 2 months.

A 35 year old male presented to us with an 8 cm by 7 cm pulsatile swelling over the right side of his neck, with areas of necrotic overlying skin, which had been present for 6 months and rapidly increased in size over the last 20 days. He had hoarseness of voice, dysphagia and dyspnoea. He too had an FNAC of a neck mass 2 months prior to presentation and was on ATT. He underwent a digital subtraction angiogram (Fig. 2) which confirmed a pseudoaneurysm arising from the right CCA. A covered stent measuring 8 mm by 50 mm was placed across the defect. The wound was debrided and tissue sent for histopathology showed multiple granulomas, suggestive of tuberculosis. He had no neurological deficits except for some residual hoarseness of voice and was discharged on ATT. On follow-up at his second revisit the wound had almost healed.

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Both patients were started on Tablet Aspirine 150 mg with breakfast, lifelong and followed up with Duplex sonography every 3 months for the first 2 follow-up visits and 6 monthly thereafter.

Discussion

Tuberculous pseudoaneurysm is a rare disease that is fatal if not treated properly. Long et al. proposed 3 theories to the mechanism of infection, of the aortic wall in tuberculosis. They are direct seeding of intima by bacilli, involvement of adventitia or media via vasa vasorum and involvement of the vessel wall by direct extension or indirectly via the lymphatics. Tuberculosis causing Rasmussen lesions in the pulmonary vasculature is well documented.

In our cases we think that the pseudoaneurysm was caused by gradual, direct extension and infection from perivascular foci for example, tuberculous lymphadenitis.

Open surgical repair can be performed with a variety of techniques, including interposition graft with saphenous vein or prosthetic graft, exclusion graft and excision with reimplantation, depending on the size and extent of the aneurysm and tissue quality. Shunts for cerebral protection are not mandatory. Our second patient had an infective pathology and the presence of necrotic tissue around the CCA would make open repair a technical challenge with adhesions and infiltrated lymph nodes. In young patients endovascular treatment with covered stent’s can be used as a bridging method with later surgery after ATT. We recommend that the stent be primed with heparin that is mixed with rifampicin as is done for open repair of infected aortic aneurysms.

In the background of active or treated tuberculosis in a patient presenting with a pulsatile mass in the neck, the possibility of pseudoaneurysm of the extra cranial carotid artery of tuberculous etiology should be considered. Despite the use of modern anti-tuberculous therapy [ATT], disastrous complications like rupture of pseudoaneurysm still occurs and hence the need for early diagnosis and treatment.

References


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Fig. 1. CTA showing a left CCA pseudoaneurysm.

Fig. 2. DSA showing a jet through a rent in the right CCA.