

CASE REPORT

TRANSIENT ISCHAEMIC ATTACKS DUE TO A PULSATING MASS IN THE NECK PRODUCED AFTER INCISION AND DRAINAGE OF PARAPHARYNGEAL ABSCESS

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Carotid endarterectomy is the most commonly performed vascular surgical procedure. One of the complications of carotid endarterectomy is Pseudoaneurysm of the carotid artery frequently managed by endo-vascular technique. Pseudoaneurysm caused by other aetiological factors is rare entity. Penetrating trauma and neck surgery are known but very rare causes of pseudo aneurysm of the carotid artery. We have successfully managed a case of carotid artery pseudoaneurysm caused by incision and drainage of parapharyngeal abscess. This surgery also leads to the palsy of right vagus nerve causing complete hoarseness of voice. The patient presented with Transit Ischaemic Attacks (TIA) and amurosis fugos. Resection of aneurysm and reconstruction of right carotid artery lead to complete recovery. Vocal cord palsy was managed by Vox implant injection leading to full recovery.

Keywords: Pseudoaneurysm, carotid artery, TIAs, hoarseness of voice, arterial reconstruction

INTRODUCTION

Pseudo-aneurysm of the common carotid artery after neck surgery is a rare complication. After extensive literature search, very few reported cases of a secondarily infected pseudo-aneurysm of the common carotid artery presenting with clinical features suggestive of a parapharyngeal abscess were found. Frequently, the causative organism was identified as community-acquired methicillin-resistant *Staphylococcus aureus*.^{1,2} However, carotid artery pseudo-aneurysm is a well known but rare complication of carotid endarterectomy attributed to patch deterioration.^{3,4}

We report a case of carotid artery pseudo-aneurysm as a complication of parapharyngeal abscess drainage presenting with repeated TIA's and episodes of amurosis fugos. This patient also had injury to the right vagus nerve. Successful arterial reconstruction, along with endoscopic injection of vox implant in the right vocal cord led to excellent results. In our view, such a case with similar clinicopathological findings has not been reported in the literature.

CASE REPORT

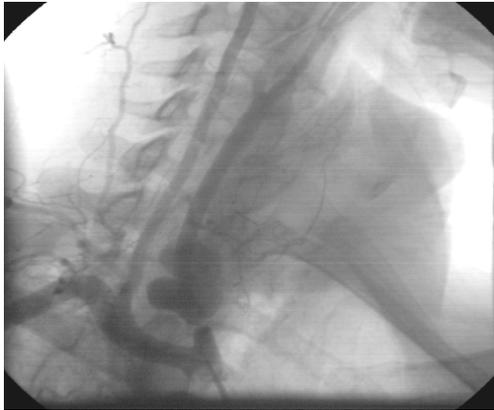
A 52 years old man presented on 18 January 2004, with the history of frequent transient ischaemic attacks (TIAs) in the form of weakness of the left arm and amurosis fugus in the left eye. The attacks lasted from 5 to 30 minutes for the last five months. The patient had developed a painful swelling on the right side of the neck, causing swinging high-grade fever in February 2003. He was then diagnosed as a case of parapharyngeal abscess, and was first

operated through oral route with no satisfactory pus drainage, so he was re-operated later on through a transverse supraclavicular incision.

Abscess drainage was followed by right pyothorax, which was treated by chest intubations and broad-spectrum antibiotics. Just after the second operation, the patient developed hoarseness of voice and difficulty in swallowing. A few days after the second surgery, the patient noticed a pulsating mass at the site of the surgery, which enlarged up to the size of a tennis ball in a few months. Over the last 5 months, the patient experienced attacks of sudden left sided weakness lasting from five to 30 minutes. The patient consulted in the outpatient after experiencing two episodes of transient visual loss in the left eye lasting a few minutes.

On examination, he was thin build and alert. There was no focal neurological sign. He had hoarseness of voice and a pulsating, rounded mass of 4×4 cm above the right clavicle. A harsh bruit was audible over this swelling. The diagnosis of pseudo-aneurysm was made and the patient was sent for duplex scan followed by carotid artery angiogram. (Figures-1 A&B). Angiogram confirmed the pseudo-aneurysm of the right common carotid artery about three cm above its origin, with slight kinking of the right common carotid artery. After suitable preparation carotid artery was explored, proximal and distal control was achieved. Aneurysmal sac was dissected and the thrombus was removed, revealing a hole of 8–10 mm in the anterior wall of the carotid artery. The carotid artery was narrow in this region. The defect in the carotid artery wall was repaired using saphenous vein patch, with 5/0 polypropylene sutures. Wound

was closed after placing a suction drain in for 24 hours. The patient had uneventful recovery and was discharged from the hospital on sixth post op day. In the department of ENT, hoarseness was diagnosed due to damage of right vagus nerve resulting in adductor paralysis of right vocal cord in cadaveric position leading to hoarseness and dysphagia due to aspiration. Vox implant was injected in the right vocal cord and after few sessions of speech therapy, the hoarseness completely recovered and swallowing improved.



A



B

Figure-1: Carotid artery angiogram,
A: Lateral View, B: AP view

DISCUSSION

In contrast to true aneurysms, a pseudo-aneurysm has no complete native arterial wall, but is composed of extravasated blood leaked from a vessel erosion, and is surrounded by inflammatory and fibrous tissues.^{1,2} The most common cause of carotid artery pseudo-aneurysm development in carotid endarterectomy, albeit rare, has been attributed to patch deterioration.^{3,4} Other rare causes of carotid artery pseudo-aneurysms include

infections causing mycotic aneurysm, radiation of the neck, blunt and penetrating trauma to the neck vessels and carotid artery dissection.⁵ Very rarely, endovascular stent placement and Behçet's disease have also caused pseudo-aneurysms of carotid arteries.⁶ The clinical presentation is often with an enlarging pulsatile mass, associated with pain, and tenderness. Warning signs are cervical bruit, trismus, lower cranial nerve palsies, Horner's syndrome and persistent fever; and symptoms associated with thromboembolic process originating from the sac of pseudo-aneurysm.⁷ Diagnosis is either confirmed or excluded by ultrasound, catheter angiography or CT angiography.⁸

We present an unusual case of pseudo-aneurysm development after incision and drainage of parapharyngeal abscess, which also led to damage of right vagus nerve resulting in hoarseness of voice and dysphagia. This patient presented with frequent TIA's and episodes of amurosis fugos. Most of the carotid artery pseudo-aneurysms do not present with neurological events weather transient or permanent, but when presenting with these signs, these carry very high morbidity and relatively high mortality. The patients not presenting with neurological events have been successfully managed by endovascular techniques.

We opted open surgical technique for excision of the aneurysm and repair of the artery using saphenous vein patch with excellent results. Paralysis of the right vocal cord was managed by endoscopic injection of vox implant in the right vocal cord with complete recovery of voice after brief speech therapy and improved swallowing by preventing aspiration. The damage to anatomical structures of this magnitude by either an infective process or surgical intervention is not found very commonly in this region. In our patient, we encountered damage of both the vagus nerve and common carotid artery. Though patient recovered from infective process but developed serious complications. Moreover, this pseudo-aneurysm also caused a serious warning neurological event by thromboembolic process originated in the common carotid artery. Most of the pseudo-aneurysms do not cause thromboembolic phenomenon because of very narrow communicating channel with the lumen of the vessel.^{9,10} In our case the defect in the vessel wall was much larger than the usual, therefore, it caused thromboembolic phenomenon leading to neurological symptoms. The stenting alone would not have solved the problem. Moreover, stenting is related to higher incidence of complications compared to open surgical techniques in carotid artery disease. That is why we opted for open surgery, with excellent outcome.

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