Ruptured large carotid artery aneurysm

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Abstract Carotid artery aneurysms are rare [1]. Bifurcation of the common carotid artery is most frequently reported site of true aneurysm in the extracranial carotid system. Blunt injury of the neck involves high cervical portion of the internal carotid artery. Large aneurysms of the carotid artery can distort the anatomy and one can anticipate the intubation difficulties during anesthesia induction. A man aged 25 years, weighing 35 Kilograms was admitted in emergency with a large swelling (bleeding) on the right side of neck, covered with a bandage. In a rural hospital, biopsy was attempted, wounds were packed with gauze as there was profuse bleeding and referred the patient to our hospital. Spiral CT angiogram showed a large aneurysm arising from the bifurcation of the right common carotid artery. He complained of dysphagia for the past 20 days. In the CT scan the internal carotid artery was found to be occluded without neurological deficit. During surgery the common carotid, external carotid arteries were dissected out, clamped, ligated and thrombi were evacuated. The unhealthy and inflamed tissues were debrided. The wound was closed with a drain. Postoperative recovery was uneventful without neurological deficits.

Keywords Carotid artery aneurysm · Blunt trauma · Internal carotid artery · Nerve injury · Dysphagia · Nerve injury

Introduction

Blunt or non-penetrating is often associated with the thrombosis of the injured vessel, but can also lead to the development of false aneurysm in young and thin individuals. Hyper extension and rotation of the neck can stretch and injure the carotid artery [2]. Carotid aneurysms pose a considerable surgical challenge but are amenable to operative intervention with good result. Ligation appears to be well tolerated in this group of predominantly non-atherosclerotic aneurysms [3].

Case report

Young man aged 25 years was admitted in emergency department with a large swelling in the neck. There was an attempt to do biopsy from the solid part of the lesion in a rural hospital 5 days before coming to our hospital. Gauze packing was done for controlling the bleeding prior to shifting the patient to our hospital. Spiral CT angiogram and duplex scan of neck showed a large aneurysm of carotid artery projecting posteriorly and medially (Fig. 1). He gave history of dysphagia for the last 20 days. He was not a known patient of hypertension or diabetes. His weight was 35 kilograms. The external carotid artery continuity is seen with aneurysm and common carotid artery. The proximal, middle 1/3rd of the internal carotid artery was not seen. The distal 1/3rd of internal carotid artery was faintly visible. During the emergency surgery anesthetist took special attention (endotracheal intubation over a dilator) as there was internal displacement of larynx and trachea by the aneurysm. Common carotid artery was dissected, taped and clamped. The Aneurysmal sac was opened and thrombi were evacuated. The external carotid artery was identified from inside of the aneurysmal sac, clamped and ligated to avoid injury to the nerves. External carotid artery was confirmed

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Fig. 1 Large aneurysm involving the bifurcation of carotid artery 1. Arch of aorta 2. Subclavian artery 3. Common carotid artery 4. Aneurysm cavity 5. External carotid artery 6. Thrombus 7. Bifurcation 8. Pseudo wall 9. Mandible

by the presence of its branches. The occluded internal carotid artery could not be identified in the pseudocapsule. Wound was debrided and hemostasis secured. A drain was placed and wound was closed in layers. Post-operative recovery was uneventful without neurological deficits. He tolerated the occlusion of the right common carotid artery very well without neurological deficits as there was occlusion of the right internal carotid artery before the operation.

Discussion

Resection of the aneurysm and restoration of flow to brain is the preferred treatment [4]. In 1955 Shea and associates first reported carotid artery aneurysm with primary anastomosis [5]. Some times when there is total occlusion of the internal carotid artery in its proximal 2/3rd, patients tolerated it

well without neurological deficit because the opposite carotid artery compensates for it [6]. This is observed in our patient also and allowed us to ligate common carotid artery without neurological deficit. Complete excision of large lesions can increase the risk (20%) of injury to facial, vagus, spinal accessory, hypoglossal and glossopharyngeal nerves. Endovascular therapies can avoid the injuries to the nerves. But in our case we did not consider the endovascular therapies in the presence of infected thrombus (gauze packing for 5 days after biopsy) and occluded internal carotid artery. Carotid artery aneurysms are rare and they pose considerable surgical challenges in emergency. One can mistake them for other pathologies such as tuberculous lymphadenitis, attempt biopsy and land in emergencies. Carotid artery aneurysms are amenable to open operations and endovascular interventions with good results.

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