ORIGINAL RESEARCH PAPER

ENT

KEY WORDS: traumatic, pseudoaneurysm,internal carotid artery

POST TRAUMATIC INTERNAL CAROTID ARTERY PSEUDOANEURYSM MASQUERADING AS A SPHENOETHMOIDAL POLYP: A CASE REPORT

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ABSTRACT

Pseudoaneurysm of the internal carotid artery is a rare complication after blunt craniofacial trauma. Delayed recurrent epistaxis is the most distinctive manifestation of traumatic internal carotid artery pseudoaneurysm. This paper describes a 32 year old male patient with traumatic pseudoaneurysm of the internal carotid artery mimicking a sphenoethmoidal polyp. During subsequent endoscopic sinus surgery while attempting to remove the polyp, massive bleeding occurred and surgery had to be curtailed. Thereafter CT angiography and digital subtraction angiography was done which revealed left sided internal carotid artery pseudoaneurysm over its cavernous segment. The patient underwent successful endovascular stenting without any complications and is doing well after 6 months of procedure and on regular follow-up.

INTRODUCTION

Pseudoaneurysm is an out-pouching of a blood vessel with the disruption of its one or more layers of its wall[1]. Traumatic internal carotid artery pseudoaneurysm is a rare complication of blunt craniofacial trauma which is reported to be around 1% of all blunt trauma[2]. Traumatic pseudoaneury sms of the internal carotid artery can pose as a considerable challenge both in diagnosis and management. The purpose of this paper is to present a rare case of traumatic pseudoaneurysm where the initial presentation mislead us to think of it as a sphenoethmoidal bleeding polyp with recurrent epistaxis.

CASE REPORT

A 32 year old male patient presented to the ENT emergency with a history of recurrent bouts of epistaxis from the left nostril since 2 months. The bleeding was fresh red in colour which was severe in nature but controlled by medications initially. The last episode was severe and uncontrolled which prompted him to seek medical attention. He gave a past history of self fall from height 7 months prior to admission. This event was associated with a brief period of loss of consciousness, vomiting and associated nasal bleed. After initial treatment in local hospital, he was discharged and was doing well until 2 months ago when he had an episode of unprovoked bleeding per nostril. On admission, bleeding was controlled conservatively. On diagnostic nasal endoscopy, a polypoidal mass was seen medial to the medial turbinate and sphenoethmoidal recess suggesting possible sphenoethmoidal origin. On further CT scan, it revealed a healed fracture of the inner table of left frontal sinus and demonstrated a hyperattenuated lesion in the sphenoid and left posterior ethmoidal region. With the decision to remove the bleeding polypus, endoscopic sinus surgery was done. With the help of 0 degree endoscope the anterior and posterior thmoidal cells were removed containing the mass without difficulty. While attempting to enter the sphenoid ostium, the mass seen to be pulsatile and on further maneovering it resulted in a massive and intractable bleeding. Immediate resuscitation measures were undertaken with transfusion of 2 units of packed cell. It was finally successfully controlled with surgicel and with the help of both anterior and posterior nasal packing. On retrospective review of the CT, the lateral wall of the sphenoid sinus was found to be dehiscent following which CT angiography and digital subtraction angiogram (DSA) was done which revealed a lobulated pseudoaneurysm over the left cavernous internal carotid artery segment. The patient underwent endovascular stenting and coiling under the guidance of an interventional radiologist and recovered well without any incident.

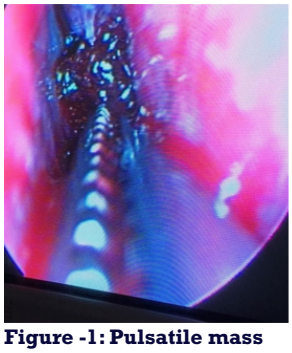

Figure -1: Pulsatile mass near sphenoid ostium

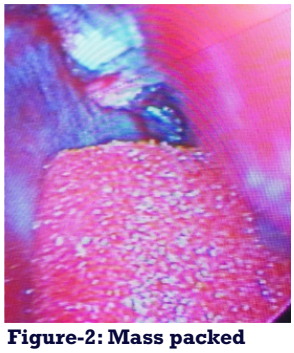

Figure-2: Mass packed with surgicel

Figure -4: Postoperative digital subtraction angiography showing no aneurysm

Figure-5: Postoperative status of the patient

DISCUSSION

An aneurysm is an abnormal widening or ballooning of a portion of an artery due to weakness in the wall of the blood vessel. A true aneurysm involves all the three layers of the wall of an artery i.e. adventitia, media and intima. Traumatic pseudoaneurysm involves partial transection of the vessel and formation of haematoma. The haematoma around the injured wall is filled by the circulating blood in continuity with the arterial lumen. The surrounding tissue undergoes inflammatory changes with formation of fibrous capsular wall and development of an epithelial lining. Continuous pulsatile forces may result in weakening and consequent breakdown resulting in bleeding. The cycle continues over and over. The classical symptoms of are a clinical triad of facial fractures, monocular blindness and late epistaxis. The characteristic bleeding begins within 1 month of injury but can be delayed as much as 40 years[3]. Even if the other symptoms remain variable, epistaxis is a constant feature[3]. The bony wall of the sphenoid sinus may be thin in 50% of people[4] and upto 4% may show dehiscence with only the mucosa covering the internal carotid artery[5]. This maybe the reason that allows intracavernous segment aneurysm to expand anteromedially into the sphenoid or ethmoidal sinus leading to rupture into the nose via the sphenoethmoid recess and mimicking a sphenoethmoidal mass lesion. With the diagnosis of pseudoaneurysm in the background of delayed epistaxis it might be bring doubt to the surgeon's mind as to whether the lesion is a pseudoaneurysm secondary to trauma or an independant lesion. The angiographic findings of late filling and emptying and the characteristic intrasphenoid location point to a probable posttraumatic lesion[6]. The first investigation suspecting traumatic internal carotid artery pseudoaneurysm CT or MR angiography should be performed. Spontaneous resolution is really rare with most of the aneurysms requiring definitive surgical intervention. Yokota[7] in his series of 94 patients had observed only 8 (8.5%) patients had spontaneous resolution with the rest of the patients requiring surgery. He also observed that mortality rate in non surgical subjects are higher (40%) as compared to the surgical subjects (11%) and thus suggested an aggressive treatment approach once diagnosed. The reported mortality rate of ruptured pseudoaneurysm ranges from 31-54%[8,9]. The close proximity to the skull base has made surgical approach for the treatment of internal carotid artery pseudoaneurysm difficult in the past. With the advent of the endovascular techniques it has become possible to repair the injuries with far less complications. Our patient underwent a successful endovascular stenting and coiling and doing well after 6 months of the procedure without any complications.

CONCLUSION

Traumatic internal carotid artery pseudoaneurysm is a rare entity and poses a great challenge in diagnosis and management. Following blunt craniofacial trauma, delayed onset epistaxis should alert the clinician for a possibility of traumatic internal carotid artery injury. If an isolated mass is seen in the sphenoid mass with epistaxis, it seems appropriate to consider an aneurysm irrespective of the whether injury occurred recently or in the distant past. A CT or MR angiography must be done in such cases to rule out pseudoaneurysm. Early diagnosis and management is crucial for minimal morbidity and mortality.

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