Post traumatic psuedoaneurysm of the lingual artery

K. K. Handa · N. B. Shunyu

Abstract Post traumatic pseudoaneurysm is a well documented complication of vascular injuries which needs early diagnosis and early management otherwise there may be significant morbidity and mortality. We present a patient who had been operated elsewhere for a foreign body lodged in neck during splinter injury sustained while bursting a cracker. He presented to ENT department of our hospital with bleeding from the wound site. We are reporting this case because pseudoaneurysm of the lingual artery as such is very rare. We could not find any other reported case in available English literature. Moreover the treating ENT surgeons need to be sensitized to the presence of such an entity and hence avoid late complications.

Keywords Pseudoaneurysm · Lingual artery

Introduction

The term aneurysm is derived from Greek word aneurysma meaning “a widening”. An aneurysm is defined as a permanent localized dilatation of artery having at least a 50% increase in diameter compared with the expected normal diameter [1]. Arterial aneurysm have been recognized since ancient times. One of the earliest text known the EBER Papyrus (2000 BC) contains a description of traumatic aneurysms of peripheral arteries [2]. Vascular injury represents a spectrum of pathology that range from simple intimal tear to complete rupture of the vessel. If the three vascular layers – intima, media and adventitia are compromised, active arterial extravasation may occur or injury may become contained by surrounding tissue resulting in a pseudoaneurysm. Injury such as transection and extravasation are often fatal. However pseudoaneurysm and fistula may present more subacutely and the chance for curative therapy are possible. The incidence of blunt trauma to carotid artery has been reported at 0.1% to as high as 0.45% in centers which routinely employ carotid and vertebral angiography [3].

Case report

We present here a very rare case of post traumatic pseudoaneurysm of lingual artery sustained by splinter injury during bursting of a cracker. A patient reported with a history of metallic splinter injury to the left side of neck during cracker blast in Diwali. This festival is celebrated with bursting of crackers. The patient had undergone neck exploration under general anesthesia and the metallic sphincter was removed in another hospital. The patient presented to ENT department of All India Institute of Medical Sciences New Delhi with neck swelling and oozing of blood from the wound site. On examination there was swelling on left side of neck with persistent oozing of blood from the wound site needing bandage dressing. On oral cavity examination there was swelling visible on the floor of mouth pushing the

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tongue upward. On protruding the tongue, the tongue deviated to the left side.

CECT (Figs. 2, 3) and DSA (Fig. 1) was done and diagnosis of post traumatic pseudoaneurysm of lingual artery was made. The patient was taken up for lingual artery ligation considering the easy access to the site as well as no

major risk involve in ligating the lingual artery. The neck was explored by giving a horizontal incision at the level of hyoid bone. The common carotid and external carotid arteries were identified. The lingual artery was further identified and ligated. Within a day of ligation, the swelling in the neck had drastically decreased in size, bleeding had stopped and swelling in the floor of mouth had disappeared and tongue on protrusion showed no deviation.

Discussion

Aneurysm following trauma is usually a false aneurysm and commonly of fusiform variety. They may present in the form of pain or swelling in the neck. At times, they can present with severe pain bursting in nature, a symptom of rupture. Ultrasound is especially valuable for monitoring the aneurysm size in patient not immediately treated surgically. Infact echo/Doppler/ultrasound permit the detection of an intimal tear at level of aneurysmal dilatation. Echo / Doppler/ ultrasound have been recommended even with the slightest doubt of aneurysm following trauma [4, 5]. CECT or MRI precisely defines the extent of the aneurysm [5, 6].

Although carotid/Doppler/ultrasound or MRI are useful for screening or follow up of high risk patients, angiography remains the gold standard for diagnosis of traumatic vasculo-

Fig. 1 Angiography showing pseudoaneurysm of the lingual artery

Fig. 2 CECT Neck sagittal section showing the pseudoaneurysm

Fig. 3 CECT Neck axial section showing the pseudoaneurysm

Fig. 4 Metal splinter removed from the neck

lar injuries to the vessels of head and neck. In addition, this modality allows immediate intervention if indicated [3, 7–8]. The first elective operation for treatment of an aneurysm was reported by Antyllus in 2nd century. He recommended ligating the artery above and below the aneurysm and then incising the sac and evaluating its contents [9]. However it was Mater's who performed the first successful proximal ligation of aortic aneurysm in 1923 [10]. Ligating the pseudoaneurysm following trauma have been performed by many surgeons with successful results [11–12].

However, when collateral channels are poorly developed, proximal ligation can be expected to have devastating peripheral effects [13]. Although ligation without arterial reconstruction is often safe in the treatment of impacted aneurysm of the innominate carotid artery or upper extremity vessels, there is a major risk of stroke or death after ligation of the cervical internal carotid artery. Ligation with excision and reconstruction is controversial, however many authors favour it [14]. While some favour primary reconstruction with autogenous vein [15, 16]. Data providing a rational basis for selection of facts for carotid artery ligation versus reconstruction have been reported by Ehrenfeld and colleague [17, 18]. Currently, endovascular technique using gelfoam, polyvinyl alcohol, coil, stent have been successfully employed [3, 19, 20–22]. Endovascular technique have immediate therapeutic impact in vessels which are

difficult to reach surgically especially intracranial carotid and vertebral artery circulation. Endovascular technique are also a better option in vessels where ligation carries risk of morbidity and mortality [23–25]. Thus post-traumatic pseudoaneurysm have many modalities of treatment and hence the need for careful plan therapy for different individuals.

Hence concluding pseudoaneurysm of the lingual artery is a very rare condition which must be kept in mind especially when dealing with case of trauma to the neck.

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