



A Rare Case of Pseudoaneurysm of Facial Artery After Surgery for Recurrent Oral Squamous Cell Carcinoma

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Abstract

Pseudoaneurysms are formed due to injuries to vessel wall leading to extravasation of blood. Owing to its deeper location, pseudoaneurysm of facial artery is an uncommon phenomenon. We report an extremely rare case of Pseudoaneurysm of facial artery in a patient with recurrent left buccal carcinoma. A 61 year old man who underwent wide local excision of buccal carcinoma with inferior partial maxillectomy and left hemi mandibulectomy experienced severe recurrent intra-oral bleeding 1 week after surgery not responsive to conservative management. Angiography revealed a pseudoaneurysm of the left facial artery which was managed by embolization. Trauma to vessel walls caused during osteotomy for resection of carcinoma may be the reason for pseudoaneurysm formation. Prior knowledge about the phenomenon and early intervention is of utmost importance for prevention of life-threatening complications and hemorrhage.

Keywords: Pseudoaneurysm; Bite resection; Embolization; Hemorrhage; Angiography

Introduction

Aneurysm may be defined as an abnormal dilatation of blood vessels. They are rarely seen in head and neck region as the vessels are protected by bone and soft tissue along their course [1,2]. In head and neck region, traumatic aneurysm if present are commonly seen in Superficial temporal artery due to its superficial course over the zygomatic arch [1,2]. Aneurysms arise weeks or months after the precipitating event and can cause torrential haemorrhage if left untreated [3]. Facial artery arises from the anterior surface of external carotid artery in the neck where it is covered by platysma and it courses over the mandible through its inferior border, after which it lies over the buccinator muscle under the skin. There is possibility of damage to this vessel during any surgical procedure involving these areas [2]. Aneurysm of facial artery is rarely seen.

Surgery involving face and neck such as bilateral split osteotomy [4], surgical removal of molar teeth [5], neck dissection or radiation [6] or facial fractures [7] are all reported causes of pseudoaneurysms of branches of external carotid artery. These aneurysms can lead to life threatening haemorrhage. Early identification and management are of utmost importance in such cases.

Here we report a rare case of left sided facial artery aneurysm in a patient who underwent left composite bite resection with infratemporal fossa clearance for left recurrent buccal carcinoma He had received radiotherapy (35 #, 70 Gy) 1 year back for same complaints.

A 61year old male came to OPD with ulceroproliferative lesion in the left buccal mucosa and retromolar trigone area. On taking

history it was found that he had received radiotherapy (35#, 60 Gy) 1 year back for left buccal carcinoma. Detailed histopathological and radiological investigations were done. Biopsy was suggestive of moderately differentiated squamous cell carcinoma.

In view of recurrent lesion with clinicopathologically node negative neck, patient was planned for wide local excision with inferior partial maxillectomy and left hemi mandibulectomy with forehead flap repair under general anesthesia.

Intraoperatively disease was found extending in the infratemporal fossa area, hence high infratemporal clearance with clear margins was done. Post operative recovery was uneventful for 1 week after which the patient suddenly started experiencing bleeding from oral cavity which was fresh blood approximately 400 to 500 ml in quantity. On examination, a defect was present in the upper edge of reconstructed flap. Packing with gauze was done through the defect to achieve haemostasis. Pack removal was done after 48 hours after which the patient again started having bleeding.

In view of persistent bleeding, the patient was subjected to CT angiography which showed focal outpouching measuring 2.6mm X1.7 mm seen on the posterior wall of post op site in continuity with branches of left external carotid artery suggestive of small pseudoaneurysm. No obvious arterial contrast extravasation was noted. Mild hyper enhancement of vessel was seen at the periphery of post operative site. A diagnosis of facial artery pseudoaneurysm was thus made.

Patient was taken up for embolization of facial artery with coil.

Bleeding stopped subsequent to embolization. Patient is doing well since then and is on a regular follow up with no signs of bleeding or disease recurrence.

Discussion

Aneurysms are of two types mainly true and pseudoaneurysm. Dilatation of all the layers of an intact vessel wall is true aneurysm but pseudoaneurysms occur due to perforation of vessel wall leading to leakage of blood which over the time becomes surrounded by fibrous pseudocapsule [1]. Facial artery aneurysms and pseudoaneurysms are rare due to its small diameter, deep location where it is protected by overlying soft tissue [2]. The most dangerous com-

plication of a pseudoaneurysm is catastrophic haemorrhage due to its accidental rupture and compression of adjacent neurovascular structures [8].

In our case patient had a history of receiving radiotherapy 1 year back, prior to surgical management for recurrent lesion. Small vessel changes like aneurysm, rupture, premature atherosclerosis can be caused due to radiation exposure [9]. Previously published articles based on case series and studies conducted on dog suggest that thickening and swelling of the internal elastic lamina, fragmentation of Elastic tissue leading to weakening of vessel wall and this is the reason for aneurysm formation [10,11].

According to literature, facial artery aneurysm may be seen as a result of trauma during drain insertion (Pappa, *et al.*), Pseudoaneurysm of facial artery may be formed due to trauma during bilateral sagittal split osteotomy (Madani, *et al.*) [4,12]. In our case, the likely cause of facial artery pseudoaneurysm formation may be injury to the vessel wall during extensive resection of carcinoma including mandibular osteotomy and high infratemporal fossa clearance.

As pseudoaneurysms are asymptomatic, it is difficult to diagnose in its initial stage, so high degree of clinical suspicion should be kept in mind during post operative period. During intraoperative period, injuries and traction should be avoided as much as possible.

Early identification of the pathology and intervention using angiography and endovascular embolization should be done because it is a less invasive procedure, and is useful for sites which are difficult to access. It also reduces the risk of bleeding via collateral circulation, and can shorten hospital stay and is cost-effective.

Conclusion

Pseudoaneurysm of facial artery is an uncommon phenomenon. In our case, although the postoperative progress was initially uneventful, patient experienced bleeding 1 week after the surgery. This may be due to minor vascular trauma during mandibular osteotomy and infratemporal fossa clearance. This report emphasizes on Early diagnosis of this rare phenomenon and immediate angiographic embolization of the involved vessel to minimize the patient morbidity and mortality.



Figure 1: Arrow showing defect in posterosuperior part of reconstructed Forehead flap in oral cavity.

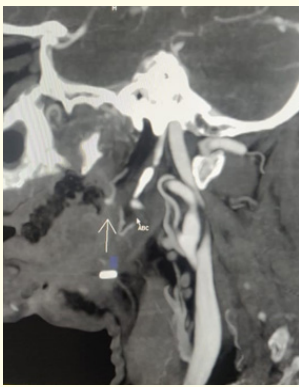


Figure 2: Arrow showing contrast out pouching s/o small pseudoaneurysm.

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Conflict of Interest

There is no conflict of interest.

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Ethics

There is no ethical concern involved and ethical clearance was taken.

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