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Muhammad Azeemuddin  
*Aga Khan University*, muhammad.azeemuddin@aku.edu

Anosha Khan  
*Jinnah Medical and Dental College, Karachi, Pakistan*

Atif Hafeez Siddiqui  
*Civil Hospital, Karachi, Pakistan*

Asad Shakil  
*Aga Khan University*

Basit Salam  
*Aga Khan University*, basit.salam@aku.edu

*See next page for additional authors*

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Authors
Muhammad Azeemuddin, Anosha Khan, Atif Hafeez Siddiqui, Asad Shakil, Basit Salam, and Raza Sayani

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Angioembolisation for the Treatment of Pseudo-aneurysm of Internal Maxillary Artery

Muhammad Azeemuddin¹, Anosha Khan², Atif Hafeez Siddiqui³, Asad Shakil¹, Basit Salam¹ and Raza Sayani¹

¹Department of Radiology, The Aga Khan University Hospital, Karachi, Pakistan
²Department of Medicine, Jinnah Medical and Dental College, Karachi, Pakistan
³Department of ENT-Head and Neck Surgery, Dow University of Health Sciences & Dr. Ruth K. M. Pfau, Civil Hospital, Karachi, Pakistan

ABSTRACT

Pseudo-aneurysm of internal maxillary artery, following a road traffic accident, is a rare clinical scenario. The consequence of pseudo-aneurysm may be spontaneous rupture of the arterial wall, which may eventually lead to life-threatening hemorrhage. We report a case of a 20-year male who presented with recurrent epistaxis. CT scan was performed, which revealed a pseudo-aneurysm of the internal maxillary artery; this was successfully treated by angioembolisation. Similar cases of traumatic pseudo-aneurysms have been reported, however, none presented with recurrent epistaxis after management of pan-facial fractures.

Key Words: Epistaxis, Pseudo-aneurysm, Angioembolisation, Pan-facial fracture.

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INTRODUCTION

A pseudo-aneurysm, also known as false aneurysm, is a collection of blood that forms between the two outer layers of an artery, the tunica media and the tunica adventitia, due to incomplete rupture of the vessel wall. This eventually leads to formation of a hematoma with the compression of the normal surrounding tissues.

Pseudo-aneurysms can occur throughout the body due to trauma, infection or surgery. However, pseudo-aneurysms of internal maxillary artery (IMA), a branch of the external carotid artery is a rare clinical entity. The management options for pseudoaneurysms include ultrasound-guided compression (USGC), ligation of afferent and efferent vessels, abscission of the pseudo-aneurysm along with stent graft and coil embolisation.¹² Angioembolisation was the only non-surgical option in our case as digital compression at this site is neither possible nor adequate for its management.

CASE REPORT

A 20-year male was brought to the Emergency Department of our hospital with complaint of recurrent epistaxis. He was previously admitted in another tertiary care hospital about six months back, after a road traffic accident with multiple pan-facial fractures. These were managed via open reduction and internal fixation.

The patient was kept on ventilator for a week after the surgical intervention during that admission.

Since the past four weeks, patient experienced recurrent epistaxis from the left side, which was managed by pinching and nasal packing.

On examination, the patient was stable with no limitation of mouth opening, no facial paralysis and no active bleeding. His blood pressure was 125/78 mm Hg, respiratory rate 20/min, pulse rate 121/min, and temperature 37°C. On rigid nasal endoscopy, clots were seen in the left middle meatus. CT scan head and neck was performed, which revealed a number of comminuted fractures of the posterolateral and anterolateral wall of the left maxillary sinus, left pterygoid plate and the greater wing of the sphenoid on the left. The presence of two pseudo-aneurysms of the left IMA was also confirmed on CT scan.

The patient was then referred to the interventional radiology suite for angioembolisation. Under local anesthesia, right femoral artery was punctured and 4 Fr sheath was placed by Seldinger’s technique. 4 Fr cerebral H1 catheter was used for cannulation of left external carotid artery, where two pseudo-aneurysms were identified arising from the left IMA measuring 23 x 8 mm and 6 x 5 mm, respectively. The pseudo-aneurysms were embolised, using a 355-500 micron PVA (Poly Vinyl Alcohol) particles followed by placement of micro-coils 2 mm x 2 cm (Figure 1).

No immediate post-procedural complication was noted and patient was discharged next day with follow-up appointments with maxillofacial and ENT teams.
To conclude, formation of pseudoaneurysm of IMA needs urgent management in order to minimise the risk of life-threatening complications. An appropriate multidisciplinary team-approach is required in a tertiary care hospital with availability of interventional radiologists and surgical specialists.

**PATIENT’S CONSENT:**
Consent was taken from the patient, regarding the procedure as well as using images for publication without name / identity disclosure

**CONFLICT OF INTEREST:**
Authors declared no conflict of interest.

**AUTHORS’ CONTRIBUTION:**
MA: Conception and design, analysis and revision. 
AK: Drafting, analysis and revision. 
AHS: Drafting, analysis and revision. 
AS, BS, RS: Conception and design, analysis and revision.

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