

POST - TRAUMATIC SUPERFICIAL TEMPORAL ARTERY ANEURYSM: A CASE REPORT

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ABSTRACT

We present a case of left superficial temporal artery aneurysm in a sixteen year old male patient who presented six weeks after sustaining a blunt trauma to the left temporal region with a pulsatile non tender mass. Duplex study was performed demonstrating a false aneurysm arising from the temporal artery. Surgical excision was performed and diagnosis was confirmed. Despite its rarity, superficial temporal artery aneurysm should be considered when temporal head mass is evaluated.

Key words: Aneurysm, Post-traumatic superficial, Temporal Artery

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Introduction

Aneurysms of the superficial temporal artery are uncommon with less than 200 cases reported in literature.⁽¹⁻⁴⁾ The first case was described by Bartholin in 1740.⁽¹⁻⁵⁾ These aneurysms are usually the sequelae of blunt or penetrating trauma or surgery to the fronto-temporal region, although they may arise following infection or autoimmune diseases.⁽⁶⁾ Patients usually present within six weeks with pulsatile periauricular mass with the majority being false aneurysms.

In this report, we present a case of superficial temporal artery aneurysm discussing its presentation, diagnosis and treatment.

Case Report

A sixteen year old male patient was referred to the vascular surgery unit at Queen Alia Military Hospital six weeks after sustaining a blunt trauma to his left fronto temporal region after presenting with a painless temporal mass.

He noticed a progressive increase in its size over

the period with occasional ear discomfort especially at night. He did not complain of headache or visual disturbances. The patient visited a general surgeon who referred him to vascular surgeon consultation after a trial of bloody aspiration, as a diagnosis of localized abscess was considered.

Upon physical examination, a solitary mass at his left temporal region was observed (Fig. 1). It was pulsatile, non tender, well defined, 2cm x 2cm in size and with audible bruit. Skull X-Ray and Duplex U/S were performed. No skull fracture was noticed and duplex showed superficial temporal artery mass with turbulent flow, narrow neck and partial wall thrombosis confirming the diagnosis of superficial temporal artery pseudo aneurysm (Fig. 2 and 3).

A decision of surgical excision was taken and patient consent was achieved. Under general anesthesia, a longitudinal incision was made over the swelling and after identification and ligation of the proximal and distal parts of the temporal artery; the aneurysm was excised (Fig. 4 and 5).

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Fig. 1. Left superficial temporal artery aneurysm

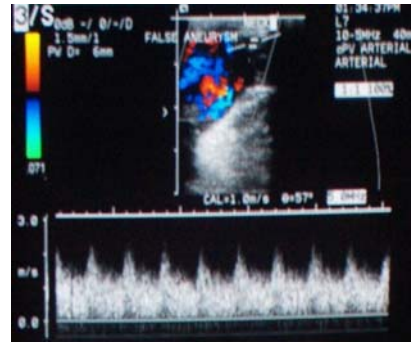


Fig. 2. Duplex U/S showing temporal artery false aneurysm with turbulent flow

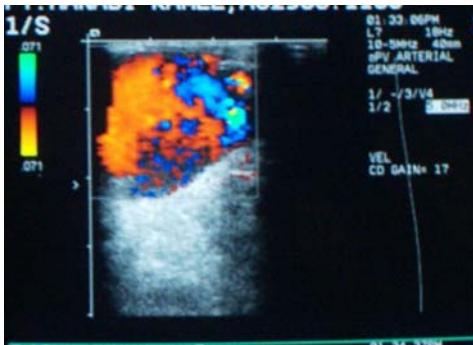


Fig. 3. Duplex U/S showing false superficial temporal artery aneurysm

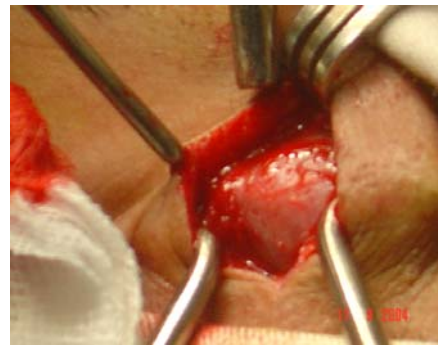


Fig. 4. Excision of superficial temporal artery false aneurysm

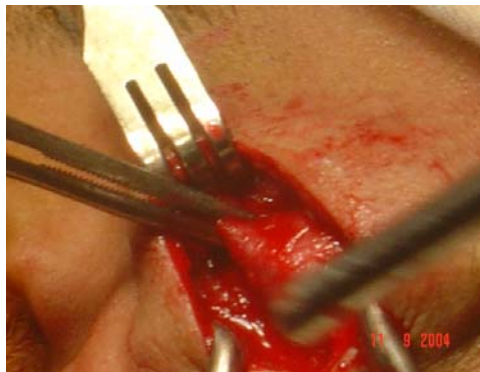


Fig. 5. Ligation of proximal and distal superficial temporal artery and excision of false aneurysm

Discussion

Superficial temporal artery aneurysm is an uncommon entity being reported in less than 200 cases reviewed in literature since it was first described in the 18th century.^(1,2,4,5,7) They constitute less than 1% of all post traumatic aneurysms⁽³⁾.

The superficial temporal artery is the smaller terminal branch of the external carotid artery.⁽⁸⁾ It runs up and behind the temporomandibular joint coming in close relation to the trunks of the facial

nerve. It is separated from the skull only by the temporal muscle and it divides into anterior and posterior branches which supply the skin over the frontal and temporal regions. It crosses the posterior root of the zygomatic arch where its pulsation can be felt above and in front of the tragus of the ear.^(3,5) This relatively exposed course above the base of the parotid gland being uncushioned by a muscle makes this artery vulnerable to trauma and injury.^(3,5) Periarterial hematoma following incidental or

iatrogenic trauma is the beginning of the event.^(2,3,5)

It results in partial or complete injury or necrosis of the arterial wall. The hematoma remains in connection with the arterial lumen. Later, when the thrombotic part is reabsorbed, the cavity provides a space for the arterial blood to circulate. Thus creating a false aneurysm surrounded by a pseudo capsule.

A history of trauma especially within the last two to six weeks is the corner stone in the diagnosis.^(1,2,5) It constitutes the origin in the vast majority of superficial temporal artery aneurysms. Trauma can be incidental or iatrogenic following craniotomies, external ventricular drainage, temporomandibular joint excision arthroplasty and punch hair grafting.^(4,9)

A pulsatile mass in the pre-auricular area is the clinical scenario. The pulsation can be controlled by compression of the superficial temporal artery proximally. It is associated with headache, ear discomfort and occasional visual disturbances, dizziness and hemorrhage.^(1,7,9,10)

Invasive and non invasive modalities are used to confirm the diagnosis, for surgical planning and to exclude other causes. These include Duplex U/S, CT angiogram, MR angiogram and conventional angiogram.^(2,4) Differential diagnosis of superficial temporal artery aneurysm includes vascular tumors, middle meningeal artery aneurysm, hematoma, abscess, neuromas, soft tissue tumors, foreign body granulomas and epidermoid inclusion cyst.^(4,5)

Treatment is indicated in relieving symptoms, preventing bleeding and for cosmesis.^(3,5) Although different successful modalities were described including conservative management by compression, endovascular embolization and percutaneous injection of thrombin, surgical excision of pseudo aneurysm with ligation of afferent and efferent vessels under local or general anesthesia remains the treatment of choice with excellent results.^(2,3,5,6) Special care must be considered for the anatomy of the temporal region especially in proximally located aneurysms to prevent injury of the parotid gland and its duct as well as the different branches of the facial nerve.

Conclusion

Although rare, superficial temporal artery aneurysm should be considered in temporal head mass evaluation especially when history of trauma is reported. Simple excision and ligation are usually curative.

References

1. **Sanz HMA, Pol NB, Perez JRS.** Post traumatic aneurysm of the superficial temporal artery, a reported case. *Journal of Vascular Surgery* 1998; 27: 374-377.
2. **Shenoy SN, Raja A.** Traumatic superficial temporal artery aneurysm: case report. *Neural India* 2003; 51: 537-538.
3. **Partap VA, Cassoff J, Glikstein R.** US - guided percutaneous thrombin injection: A new method of repair of superficial temporal artery pseudo aneurysm. *Journal of Vascular & International Radiology* 2000; 11: 461-463.
4. **Walker MT, Liu BP, Salehi SA, et al.** Superficial temporal artery pseudoaneurysm: diagnosis & pre operative planning with CT Angiography. *American Journal of Neuroradiology* 2003; 24: 147-150.
5. **Leal FSCB, Miranda CCV, Guimaraes ACA.** Traumatic pseudoaneurysm of the superficial temporal artery: Case report. *Arq.Neuro-Psiquiatr* 2005; 63(3): 25-26.
6. **Isaacson G, Kochan PS, Kochan JP.** Pseudoaneurysm of the superficial temporal artery: treatment options. *Laryngoscope* 2004; 114 (6): 1000- 1004.
7. **Magloire DF, Reyes CR, Magloire MP.** Right superficial temporal artery aneurysm. Case report. *Rev Mex Angiol* 1999; 27 (2): 41- 44.
8. **McMinn RMH.** Head & neck & spine. Last's Anatomy. 9th edition. Longman Group UK limited 1994; 454- 455.
9. **Amlashi SFA, Riffaud L, Morandi X.** Arteriovenous fistula of the superficial temporal artery: an exceptional complication of the pterional approach. *Journal of Neurology Neurosurgery and Psychiatry* 2004; 75: 1077 - 1078.
10. **Asakura K, Tasaki T, Okada K.** A case of unruptured anterior temporal artery aneurysm showing pupil sparing oculomotor palsy. *No Shinkei Geka* 1986; 14 (6): 777-782.