



CASE REPORT – RARE SEQUELAE OF A HEAD INJURY

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ABSTRACT Pseudo aneurysm arising from the superficial temporal artery (STA) is a rare and potentially critical cause of a palpable mass in the temporal region. Most pseudo aneurysms form as a result of a blunt trauma and present as painless, pulsatile mass. We report a rare case of pseudo aneurysm arising from STA caused by blunt injury.

KEYWORDS :

Case Report:

A 39 year old gentleman sustained a Road Traffic Accident leading to a blunt trauma to the head. At that time, the patient was stable and had mild Sub Arachnoid Haemorrhage with Glasgow Coma Scale of 15/15, and no neurological deficit. He recovered well and was discharged home. Subsequently, he developed a swelling over the left side of forehead. Thought as simple hematoma, he was tried aspiration under local anaesthesia elsewhere which resulted in a torrential bleeding. The swelling was immediately covered with compressive adhesive dressing and referred to our hospital. The patient had Coronary Artery Disease-Double Vessel Disease / Hypertension/ Diabetes Mellitus II as co morbid conditions and was on treatment with anti platelet drugs. No other positive history was found. Moderately built and nourished, General examination was found to be normal. Vital parameters were within normal range. On physical exam, there was ulcerated (due to pressure necrosis), thrombosed swelling of size 4x4 cm in the left side of forehead which was faintly compressible and slightly pulsatile on compression of left superficial temporal artery. Other system exam was normal and he had no neurological deficits. Eventually, CT angiogram of brain and face was taken which showed a normal study of the brain and 3x3 cm sized pseudo aneurysm of left superficial temporal artery.



Fig-1 Ulcerated, Thrombosed Swelling of Size 4x4 Cm In The Left Side Of Forehead

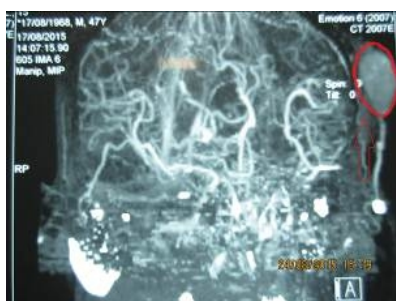


Fig-2 CT Angiogram showing Pseudo aneurysm in Left Superficial Temporal Artery (Highlighted in RED)

After optimization, he was planned for Surgery. Under general anesthesia, surgical exploration done which revealed pseudoaneurysm arising from left superficial temporal artery. Excision of the pseudoaneurysm and ligation of proximal vascular feeders done. Specimen sent for histopathological examination which confirmed pseudoaneurysm showing hematoma in arterial wall beneath thinned out adventitia and myxomatous changes in tunica media of vessel. The patient recovered uneventfully after surgery.



Fig 3-5 Proximal Vascular control and excision of pseudo aneurysm with clots

DISCUSSION:

Pseudo aneurysms of the superficial temporal artery [STA] are rare and were first described in 1740 and since then around 400 cases have been reported in literature [1]. Most cases [about 75%] are the result of blunt head injury but there also cases reported relating to penetrating scalp lesions, previous craniotomy site, external ventricular drainage [2], use of Gardner traction devices [3] and hair implants. Spontaneous pseudo aneurysm formation uncommonly occurs as a result of congenital defect or atherosclerotic disease [4].

The Peculiar anatomy of the superficial temporal artery makes it more vulnerable to injury [1]. Although protected from trauma by surrounding soft tissue, the branches of superficial temporal artery [STA] lie directly on the periosteum at the superior temporal line due

to a gap in the muscle and are vulnerable to trauma. The artery is also tethered by adventitia to the frontal and temporalis muscle.

Patient typically presents with a compressible pulsatile non tender mass which follows trauma to temporal region by weeks, although the time window ranges from just a few hours to as long as 10 years. It may be associated with a throbbing headache, ear pain or uncommonly facial nerve palsy [5, 6]. The pulsatile nature of the mass can be reduced with compression of the proximal STA [5, 7]. A number of differential diagnosis warrant consideration such as lipoma, hematoma, AV fistula, meningocele, encephalocele, angiofibroma, and chronic middle meningeal artery aneurysms with overlying temporal bone erosion [5,6,8,9] but the peculiar examination findings make pseudo aneurysms stand apart and can be diagnosed by history and through clinical examination mostly. CT angiography can be used to confirm the diagnosis and exclude other condition such as AV malformation and fistula. STA pseudo aneurysms require treatment to reduce the risk of hemorrhage from trauma, to relieve headache and for the cosmetic defect.

Conservative management is not recommended [4]. Surgical ligation and resection of the lesion is considered the treatment of choice [10] especially when there is evidence of infection like penetrating trauma. General anesthesia may be needed for safe access during surgical excision of STA pseudo aneurysm if it is located close to the facial nerve or parotid glands [11]. Sometimes end to end anastomosis or arterial grafting becomes necessary to restore blood flow to critical dependent structures. Embolization or endovascular intervention has become increasingly popular mode of treating vascular abnormalities. Successful obliteration of STA aneurysms using thrombin has been reported [12, 13] and may prove to be a promising approach to treat vascular abnormalities [1, 4].

CONCLUSION:

Though rare, surgeons should consider the possibility of traumatic pseudo aneurysm in case of a palpable pulsatile mass around temporal region and confirm their diagnosis by CT angiography because this diagnostic tool can accurately depict the morphology of the pseudo aneurysm. Surgical resection and ligation of proximal and distal ends of the STA is the preferred treatment option.

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