



A Case of Iatrogenic Superficial Temporal Artery Pseudoaneurysm Following Skin Lesion Excision – Key Lessons Learnt

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Clinical Image

We present an interesting case of iatrogenic superficial temporal artery (STA) pseudo aneurysm following excision of a skin lesion in the left anterior scalp region under local anaesthesia. Given the large volume of skin lesions in the temple region excised by skin surgeons, we feel sharing this case will hopefully reinforce the importance of anatomical knowledge and highlight some key lessons to avoid future occurrences.

An 86 year old gentleman presented with a 1.5cm diameter ulcerated lesion overlying his left temple region of several years duration. Histology from incision biopsy confirmed ulcerated nodular Basal Cell Carcinoma. Past medical history consisted of hypertension and he was not on any anticoagulants. The lesion was excised with a 4mm margin and the resultant defect reconstructed utilizing a local transposition flap under local anaesthetic. There were no intraoperative complications and the patient was discharged home. At one week, the flap appeared to be healing well. Five weeks later, although the wound had healed completely, there was a subcutaneous mass noted at one end of the scar. The patient reported a small tender lump that appeared approximately two weeks post operatively that had been gradually enlarging. Initially, this was thought to be an old haematoma. On further examination the mass was noted to be pulsatile. (Figure 1). The patient was admitted for emergency surgery within the hour. On secondary exploration, apseudoaneurysm was identified. This was completely excised and the STA ligated. Subsequent follow up was uneventful.

Recently, Dunbar described 3 cases in which Mohs Micrographic surgery for non-melanoma cutaneous lesions resulted in pseudoaneurysm; one of the STA, one of the angular artery and one of the lateral nasal artery [1]. In all the above-mentioned cases, the typical presentation of the pseudoaneurysm was a painful expansile pulsatile mass between 2 to 4 weeks post intervention. The treatment of choice was surgical ligation in all cases.

The STA arises from the external carotid artery and courses along the posterior margin of the condylar process of the mandible. It then crosses the posterior root of the zygomatic process of the temporal bone [2,3]. Superior to the zygomatic arch, it divides into two large terminal branches; the frontal branch which lies more anterosuperiorly and the parietal branch which travels

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Figure 1: Appearance of skin flap overlying pseudoaneurysm of STA.

posterosuperiorly [4]. It is important to recognise the course of the vessel to pre-empt bleeding tendencies intra-operatively and in plastic surgery, design of flap should incorporate large vessels if possible.

True aneurysms involve all 3 layers of the vessel wall; intima, media and adventitia as opposed to a pseudoaneurysm which only involves part of the vessel wall. Given the lack of arterial wall components in the aneurysmal out-pouching and the presence of organised haematoma adjacent to the lumen of the STA, a diagnosis of pseudoaneurysm was made.

It is not uncommon to reveal the STA or its branches during surgical excision of a cutaneous lesion. At initial surgery, if the STA was damaged during excision of lesion, the senior author advocates surgical ligation or transfixion of the damaged vessel rather than cauterization, no matter how small the tear is. Given the excellent prognosis, we recommend such cases to be treated acutely. Delay in treatment not only risks increase in the size of lesion, but also causes pain and anxiety for the patient. To our knowledge, this is the first case of pseudoaneurysm of the frontal branch of STA described following wide local excision (WLE) and local flap reconstruction, highlighting that this is not a complication limited to Moh's micrographic surgical technique. This is an important consideration for plastic and dermatological surgeons performing WLE procedures regularly.

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