Case Report

True Aneurysm of the Superficial Temporal Artery

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Abstract

True aneurysms of the superficial temporal artery are extremely rare. The majority of these aneurysms are a consequence of trauma. A 56-year-old male noticed a swelling in front of his left ear, which had slowly increased in size. There was no history of trauma. Computed tomography revealed an aneurysm of the main trunk of the superficial temporal artery. A ligation and excision was performed. The postoperative period was uneventful. Histology revealed a true aneurysm.

Key Words: Aneurysm, superficial temporal artery, superficial temporal artery aneurysm

Introduction

The aneurysms of the superficial temporal artery account for <1% of the reported aneurysms. The majority of these aneurysms are a consequence of trauma, however true aneurysms are extremely rare. Here, we present a case of true aneurysm of the superficial temporal artery that had developed spontaneously. A ligation and resection was performed. In this article, the history, clinical presentation, treatment, and review of literature are presented.

Case Report

A 56-year-old male presented with 1 year complaint of a pulsatile, slow-growing mass in front of his left ear with a mild discomfort. There was no history of trauma. On physical examination, the pulsatile mass [Figure 1] was palpated in front of his left ear along the course of the superficial temporal artery. Angiogram [Figure 2] revealed three aneurysms at the main trunk of the superficial temporal artery measuring 8 mm × 6 mm, 6 mm × 4 mm, and 1mm × 1mm. There were no findings suggestive of connective tissue disorders and syphilis. His blood investigations were within normal limits. Under general anesthesia, through a longitudinal incision in front of the ear, the aneurysm [Figure 3] was exposed. There were three aneurysms along the main trunk of the superficial temporal artery extending up to its bifurcation. The aneurysm was dissected along its posterior aspect to avoid injury to the branches of the facial nerve. After proximal ligation of superficial temporal artery and distal ligation of its branches, the aneurysm was excised [Figure 4]. The postoperative period was uneventful.

Pathology showed 3 cm × 1.5 cm enlarged artery with fragmentation of elastica, irregular destruction of the media with replacement by fibrosis, and thickening of the wall.

Discussion

The aneurysms of superficial temporal artery are either true or false aneurysms. False aneurysms are more common. A false aneurysm is a break in arterial wall with a subsequent hematoma formation around the vessel wall.[1] They usually occur as a complication of blunt and penetrating trauma to the temporal region. They have also been described after surgical procedures such as craniotomy, temporomandibular arthroplasty, hair transplantation, and cyst removal. A true aneurysm is a localized dilatation of the vessel wall that involves all the three layers. Only very few cases were reported in literature. These aneurysms were reported to be congenital or degenerative.

The aneurysms of the superficial temporal artery involve the anterior branch rather than the proximal or its posterior branch.[2] It can be single or multiple. In one series, two and three aneurysms were reported.[3] In our case, there are three aneurysms at the trunk of the superficial temporal artery. The typical presentation is a pulsatile mass in the temporal region with a recent history of minor head injury.

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The surgical treatment is aneurysm ligation and excision. It is simple and safe. If the aneurysm is located at the proximal part of the superficial femoral artery, selective catheter embolization is an alternative approach.

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Conflicts of interest
There are no conflicts of interest.

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The usual onset is 2–6 weeks after head injury.[4] Most are asymptomatic, some have a headache and ear discomfort. Diagnosis is made by history and clinical examination. Adjunctive diagnostic tests are duplex scan and computed tomography angiogram.

The natural history of true aneurysms of the superficial temporal artery are unknown, while the false aneurysms have been described to enlarge, thrombose, or rupture, if left untreated. Differential diagnoses include vascular tumors, arterio-venous fistula, and aneurysms of the adjacent artery.

Surgical treatment is recommended for cosmetic reasons or nonspecific complaint such as pain and to prevent rupture.