CLINICAL CASE

Case report of a rare spontaneous superficial temporal artery aneurysm

Anévrisme spontané de l’artère temporale superficielle, un rare cas

L. Karam\textsuperscript{a,}\textsuperscript{*}, M. El Husseiny\textsuperscript{a}, G. Abadjian\textsuperscript{b}, S. Slaba\textsuperscript{c}, G. Tabet\textsuperscript{a}

\textsuperscript{a} Service de chirurgie cardiovasculaire et thoracique, hôpital Hôtel-Dieu de France, rue Alfred Naccache, Achrafieh, Beyrouth, Liban
\textsuperscript{b} Service d’anatomopathologie, hôpital Hôtel-Dieu de France, rue Alfred Naccache, Achrafieh, Beyrouth, Liban
\textsuperscript{c} Service de radiologie, hôpital Hôtel-Dieu de France, rue Alfred Naccache, Achrafieh, Beyrouth, Liban

Received 12 April 2010; accepted 4 August 2010

KEYWORDS
Superficial temporal artery; Spontaneous aneurysm; Open surgery

Introduction

Temporal artery aneurysms are usually diagnosed 2 to 6 weeks after a blunt head trauma. Spontaneous superficial temporal artery aneurysm (SSTAA) is however a rare entity. Less than 25 cases are published in the literature. Here, we present the case of a SSTAA in a young woman.
Case report

We report the case of a 34-year-old woman who presented to our vascular unit for a right temporal lump. The patient was consulting mainly for cosmetic reasons as the mass was progressively enlarging for the past 2 years. She denied any history of trauma or surgery in that region. No associated tenderness or pain was reported.

Clinically, the mass was pulsatile. No thrill was audible on auscultation. A CT scan was performed (Fig. 1) showing a 1.6 cm diameter aneurysm in the temporal region arising from the main trunk of the right superficial temporal artery (STA). No arteriovenous communication was visible. No other intracranial or intraabdominal aneurismal locations were detected.

The patient underwent surgical excision under general anesthesia. The aneurysm was dissected from adjacent structures after identification of the distal STA. It was completely resected after ligation of the proximal STA and three arterial branches rising directly from the aneurysm. The patient was discharged on the next day without neurological deficits. Histological examination (Fig. 2) revealed that the aneurysm consisted of the intima, media and adventitia. The elastic membrane was fragmented.

The specimen contained no malignant or inflammatory cells. The histological diagnosis was that of a true aneurysm.

Discussion

Among diseases involving the superficial temporal vessels, Horton disease is the most widespread. Though it involves most frequently the STA, superficial venous thromboses have also been reported [1]. In contrast, superficial arterial aneurysms are uncommon [2]. True aneurysms are to be differentiated from pseudoaneurysms that are usually secondary to trauma, infection or surgery [3]. In pseudoaneurysms, there is a partial break in the arterial wall leading to the absence of the media on histological examination [4]. To our knowledge, this is the 14th case of histologically confirmed SSTAA out of 23 reported [5–15].

Our patient was a 34-year-old female patient with no known atherosclerotic risk factors or previous history of trauma or head injury. In the absence of atherosclerotic changes that promote hemodynamic stress and in the absence of any history of trauma or injury to that region, this defect in the vessel wall is most probably due congenital abnormalities. In fact, the only anatomo-pathological abnormality reported in this case and in the literature is the fragmentation in the elastic membrane. This may explain the weakening of the arterial wall and the resulting aneurysm formation.

Among the differential diagnosis that should be considered in front of a temporal lump, we evoke an aneurysm of the middle meningeal artery with temporal bone erosion, an arteriovenous fistula, an epidermal inclusion cyst, an abscess, a lipoma, a parotid tumor, an angiofibroma, a neuroma of the facial nerve, an encephalocele and a meningocele.

Diagnosis was easily made on a CT scan. Cerebral angiography was once considered to be the gold standard for diagnosis of spontaneous true STA aneurysm [8,9,11,12]. With the advance of imaging techniques, 3D CT angiography has replaced it as it provides essential information about the anatomical relationship between the aneurysm, the surrounding tissue, and the rest of the STA [4,14].

Like in all reported patients, our surgery was uneventful. The dissection was undertaken very carefully in order to avoid a massive intraoperative bleeding that could happen if the proximal STA is injured. Postoperative neurologic deficit may occur if the facial nerve is accidentally sectioned. A special attention should be oriented to ligate all the feeding vessels, as it is seldom a unique one. Frequently multiple
vessels feed the aneurysm making embolisation of limited utility. Endovascular embolisation, if successful, would leave a cosmetically visible lump. Thus endovascular treatment of such lesions has scarce indications.

The optimal timing for surgery is still however not defined. In our case, our attitude was mainly dictated by cosmetic reasons, in association to a progressive increase in size. Other indications for surgery include pain and changes in the overlying skin or adjacent structures. No specific recommendations cover this issue.

In the literature, till today, there is no reported association between a SSTAA and other aneurysm location. Nevertheless our recommendation is to investigate the presence of other locations in the brain and in the abdomen especially in childbearing age women. An association with a visceral aneurysm is important to exclude as hormonal modifications during pregnancy may accelerate the growth rate of the aneurysm and enhance the risk of rupture.

**Conclusion**

This case illustrates important issues.

A 3D CT angiography is today the gold standard when suspecting an aneurysm.

Percutaneous techniques have a limited role in the management of such patients as the aneurysm is frequently connected to many feeding vessels making surgery the best option especially that it is simple and safe in experienced hands. There is currently no established association with aneurysms of other locations but we still recommend investigating their presence in childbearing age women.

**Conflict of interest statement**

None.

**References**