

True aneurysm of the facial artery

J BARRACLOUGH, H UPPAL, S SILVERMAN*, C HELPERT†, J O'CONNELL

Abstract

We present a case of true facial artery aneurysm with no associated risk factors, which was non-pulsatile on presentation. This case is unique as the lesion was identified using computed tomography scanning, due to the unusual presentation. The vast majority of aneurysms of the head and neck have a traumatic aetiology, giving rise to false aneurysms; true aneurysms are extremely rare. We discuss the implications of such a lesion and its management.

Key words: Aneurysm; Facial Artery; Atherosclerosis

Introduction

Aneurysms are abnormal, localised dilatations of blood vessels and can be classified as either true aneurysms (when all layers of the vessel are involved) or false aneurysms (when an injury to part of the wall causes an abnormal communication with a haematoma outside the wall). The superficial temporal artery is the most common vessel to be involved in the head and neck region.¹ False aneurysms of the facial artery have been previously documented, but cases of true, spontaneous facial artery aneurysm are extremely rare.

We present a case of a true facial artery aneurysm and briefly discuss the management and related literature.

Case report

A 78-year-old woman presented with a non-tender, palpable, firm lump just below the right side of the mandible. The lump had been steadily increasing in size over a four-week period. There were no upper aero-digestive tract symptoms and no history of trauma or surgery to the head and neck. The patient's past medical history included mild asthma, and she denied any history of tobacco or alcohol use.

Examination confirmed a firm, 2 cm, spherical swelling in the right submandibular triangle, which was non-pulsatile. Intra-oral examination was unremarkable. Endoscopic examination of the nasopharynx and laryngopharynx was also normal.

The provisional diagnosis was salivary gland tumour. However, fine needle aspiration yielded blood only.

A computed tomography (CT) scan (Figure 1) was requested and demonstrated an aneurysm of the right facial artery just below the mandible, measuring 2.2 cm in diameter. There was calcification of the wall and thrombus formation within the lumen. The external and internal carotid arteries and the surrounding soft tissues were normal.

The patient subsequently underwent surgical excision of the aneurysm (Figure 2). An external approach was used,

the aneurysm was dissected open and feeding vessels were ligated.

The post-operative course was uneventful, and the patient was subsequently discharged home.

Discussion

There are a number of reports regarding aneurysms of the extracranial head and neck. The most frequently affected vessels are the superficial temporal artery² and the facial artery.³ The vast majority of these cases describe false aneurysms that have an associated traumatic aetiology, including blunt trauma⁴ and penetrating trauma caused by glass,⁵ gunshots⁶ and intra-oral prostheses.⁷ Injury to the vessel wall gives rise to a local haematoma which expands until the resistance of surrounding soft tissues equals the systolic arterial pressure. Eventually, the adjacent thrombus organises and liquefies to leave a fibrous capsule that is in continuity with the lumen of the vessel.⁶

True aneurysms are a dilatation of the artery wall, involving all three vessel layers (intima, media and adventitia). Causes for true aneurysms include infections (mycotic and syphilitic), congenital abnormalities and, most commonly, atherosclerosis, which was the aetiology in our case.

Reports of true aneurysms of the facial artery are extremely rare, and the management of these lesions is not widely acknowledged. Aljaro *et al.*³ reported a case of true facial artery aneurysm which appeared spontaneously in a hypertensive, diabetic patient. They identified the aneurysm using colour Doppler ultrasound and excised the lesion under local anaesthetic. The aneurysm in our case was considerably larger and consequently a general anaesthetic was used. The only other reported case of true facial aneurysm (identified via a Medline search) was presented by Do Carmo Galindo *et al.*,⁸ who investigated a pulsatile lump using Doppler ultrasound. The lump in our case was non-pulsatile, and this may have been due to extensive calcification of the vessel wall. In addition, the unusual position of the aneurysm and the



FIG. 1

Axial computed tomography scan with intravenous contrast, showing the position of the aneurysm, with mural thrombus and wall calcification.

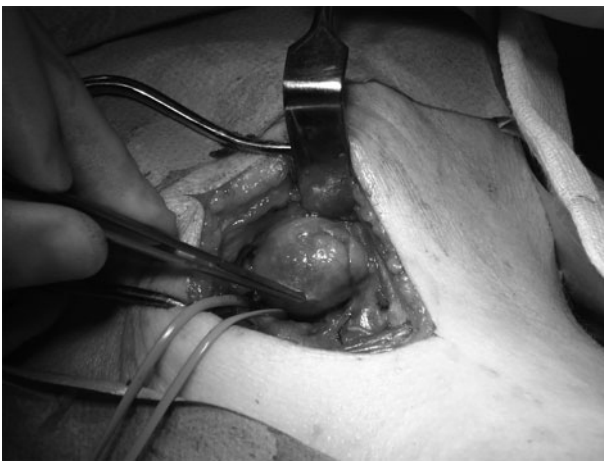


FIG. 2

Intra-operative photograph of the true facial artery aneurysm, with control of the proximal supply.

lack of a supporting history made the likelihood of its diagnosis on purely clinical grounds remote.

The definitive diagnosis was made with the aid of CT. No venous enhancement was seen, making the possibility of an arterio-venous fistula unlikely. Angiography may have been helpful in the investigation of our case, but the CT images gave the necessary diagnostic information for surgical treatment. One advantage of angiography is that it allows for the possibility of endovascular management, such as coiling and embolisation. It has been proposed

that false aneurysms be treated primarily with transcatheter embolisation.⁹

- Most facial artery aneurysms have a traumatic aetiology
- True facial aneurysms are extremely rare
- Their management has not been widely discussed in the literature
- This case highlights the need for suspicion of vascular lesions in the head and neck region, even in the absence of clinical features

Conclusion

Most facial artery aneurysms have a traumatic aetiology. If there is no history of trauma, a true aneurysm may be suspected. These are extremely rare and their management has not been widely discussed in the literature. To our knowledge, this is the first reported case of a spontaneous true aneurysm of the facial artery which was non-pulsatile at presentation and had no associated risk factors for development. The case highlights the need for clinicians to be aware of vascular lesions of the head and neck, as inappropriate investigations and surgery may have serious consequences. This gives further weight to the argument that CT should be an early investigation of choice for head and neck lumps.

References

- 1 Conner WC 3rd, Rohrich RJ, Pollock RA. Traumatic aneurysms of the face and temple: a patient report and literature review, 1644 to 1998. *Ann Plast Surg* 1998;**41**:321–6
- 2 Buckspan RJ, Rees RS. Aneurysm of the superficial temporal artery presenting as a parotid mass. *Plast Reconstr Surg* 1986;**78**:515–17
- 3 Aljaro H, Maffei J, Moriamez S. True aneurysm of the facial artery. Report of a clinical case. *Med Oral* 2001;**6**:148–50
- 4 Cooperband BR, Friedel W, Bhatt GM, Eisig S. False aneurysm of the facial artery. *J Oral Maxillofac Surg* 1989;**47**:1327–9
- 5 Stewart CL. Post traumatic facial artery aneurysm in a child. *Int J Paed Otolaryngol* 2004;**68**:1539–43
- 6 Germiller JA, Myers LL, Harris MO, Bradford CR. Pseudoaneurysm of the proximal facial artery presenting as oropharyngeal hemorrhage. *Head Neck* 2001;**23**:259–63
- 7 Tubbs RS, Kelly DR, Oakes WJ, Salter EG. Aneurysm of the distal facial artery from a penetrating oral prosthesis. *Clin Anat* 2005;**18**:527–9
- 8 Do Carmo Galindo C, Augusto Lima C, Galindo Filho G, Marcondes Penha F, do Carmo Galindo C. True atherosclerotic aneurysm of the facial artery. *Int J Oral Maxillofac Surg* 2006;**35**:566–8
- 9 Lanigan DT, Hey JH, West RA. Major vascular complications of orthognathic surgery: false aneurysms and arterio-venous fistulas following orthognathic surgery. *J Oral Maxillofac Surg* 1991;**49**:571–7

Address for correspondence:

Mr James Barraclough,
Birmingham Children's Hospital,
Steelhouse Lane,
Birmingham B4 6NH, UK.

Fax: +441215074557

E-mail: jamesbarraclough@hotmail.com

Mr J Barraclough takes responsibility for the integrity of the content of the paper.
Competing interests: None declared