Case report

External carotid artery aneurysm: a rare condition diagnosed in cosmetic consultation

ABSTRACT

The aim of this report is to highlight and warn cosmetic dermatologists about the need of a full body complete examination regardless of the complain of any patient that seeks our evaluation, even when they ask only for cosmetic treatments and/or procedures. This is nowadays a very important concern as people and some physicians are involved in an exaggerated search for eternal beauty. This represents a very profitable practice for dermatologists and plastic surgeons. But we should never forget that a dermatologic consultation can be an opportunity to discover an unnoticed dermatosis or signs related to systemic diseases.

Keywords: aneurysm, external carotid artery, esthetics.

CASE REPORT

A 52-year-old woman, Fitzpatrick`s phototype classification[1] IV, was referred to the Cosmetic Dermatology Department, for treatment of acne scars and melasma. During the dermatological examination we noticed a facial asymmetry with subcutaneous augmentation in her left hemi-face. Our interpretation was a possible lymphedema related to previous severe inflammatory acne or to a congenital deformity. We prescribed a 0,025% tretinoin and 4% hydroquinone cream and SPF 15 broad spectrum sunscreen for. After 30 days we started monthly application of superficial chemical peelings in order to prepare her skin for dermabrasion. During the treatment we noticed a progressive increase of her facial asymmetry, as well as a discrete bluish color and a light pulsation in the affected area. We also observed an evident venous lake on her left lower lip and one venous ecstasy on the left pre-auricular area (Figure 1).

We decided to stop the cosmetic treatment and to investigate any disease. Our first hypothesis was an haemangioma. Doppler Ultrasonography, Magnetic Resonance Imaging (MRI) and Magnetic Resonance (MR)-Angiography were performed (Figures 2 and 3). The diagnosis was an intra-parotid aneurysm of the external carotid artery that was causing a venous compression with edema and congestion.

She was then referred to the Vascular Surgery Department and she is now being prepared for surgical intervention.

DISCUSSION

Acne scars and melasma are common cosmetic problems that, as other severe dermatosis, can affect patients' quality of life.[2] It is well known that the effective treatment of acne and its scars has a positive impact on emotional and social aspects of the patients. [3,4,5] The approach towards acne scars requires the combination of topical and surgical treatments, depending on the scar type.[6] We usually perform a first step for skin preparation, for 30 days, using tretinoin and hydroquinone creams at night, as well as sunscreen during the day. Then, as referred to in the literature, we use the following procedures in our routine:[6,7] superficial pulse chemical peels, medium depth chemical peel, microdermabrasion, dermabrasion, soft tissue augmentation, subcision, punch elevation, punch excision and skin transplantation, surgical

Authors:

Edileia Bagatin[1]
Karin V. Ferreira[2]
Marcos Docema[3]
Cristhine Leão[2]
Karime M. Hassun[2]
Erica de Oliveira Monteiro[2]
Sérgio Talarico[2]

[1]PhD in Dermatology – Department of Dermatology, Universidade Federal de São Paulo
[2] Master in Dermatology – Department of Dermatology, Universidade Federal de São Paulo
[3] Master in Dermatology – Hospital Sírion-Libanês

Correspondence to:

Erica de Oliveira Monteiro
Departamento de Dermatologia, Universidade Federal de São Paulo
Rua Princesa Isabel, 1.721 Campo Belo
São Paulo – SP – Brazil
CEP: 04601-003
Phone: +55 (11) 5044-1064
E-mail:erica@dermatologia.com.br

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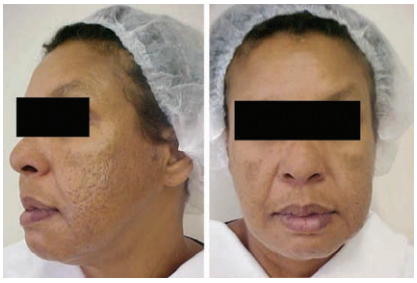

Figure 1. Clinical pictures: facial asymmetry, venous lake on left lower lip and one venous ecstasy on left pre-auricular area.

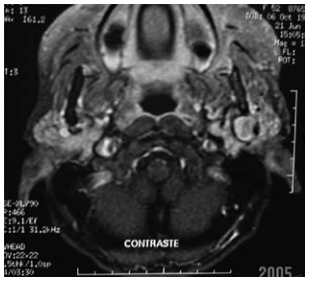

Figure 2. Magnetic Resonance Imaging (MRI) showing an enlarged left intra-parotid vascular structure with compression of the external carotid artery.

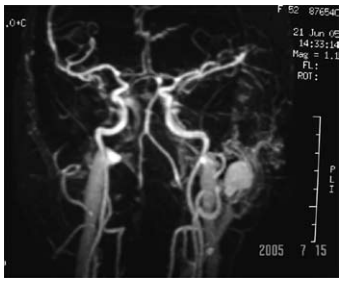

Figure 3. Cervical MR-Angiography, confirming an aneurysm of the external carotid artery.

excision and laser resurfacing,[8,9] according to the scar types, as well as intralesional infiltration with corticosteroids for the hypertrophic scars.

For our patient we prescribed tretinoin combined wtih hydroquinone and sunscreen, as this treatment would be beneficial for melasma as well as skin preparation for further procedures. We interrupted the treatment after five pulses of superficial chemical peels as soon as we suspected of a vascular disease.

The occurrence of an external carotid artery aneurysm,which is a very rare condition, was confirmed by MR-Angiography.

In our review of the literature we found a multicentric Serbian study[10] about treatment options for extracranial carotid artery aneurysm. The authors reported 91 cases of this condition in 76 patients, among which 13 had bilateral involvement. There were 61 (80.3%) male and 15 (19.7%) female patients, with an average of 61.4 years of age. The majority (61 cases or 67%) of the aneurysms involved the internal carotid artery, 29 (31.9%) were localized in the common carotid artery bifurcation and only one (1.1%) in the external carotid artery. Twenty-nine (31.9%) of these cases were totally asymptomatic at the time of diagnosis.

The two most frequently reported causes of carotid artery aneurysms are degenerative atherosclerosis or trauma, like bone fracture, penetrating wound of the neck and other injuries.[10,11,12,13] A revision study[13] reported 386 patients with traumatic pseudo-aneurysms of the external carotid artery branches situated on the face and temples. Other etiologies are:[10,11] previous carotid surgery, tuberculosis, arterial fibromuscular dysplasia, brucellosis, Behçet's disease and neurofibromatosis.[15] There are also cases of mycotic external carotid pseudoaneurysm related to *Salmonella* septicemia.[16]

Magnetic resonance angiography has been considered an efficient method, with high sensitivity and specificity, for the diagnosis of head and neck vascular diseases.[17] For our patient it allowed a conclusive diagnosis.

The usual treatment for this condition is surgical resection of the aneurysm, followed by re-establishment of the carotid continuity or ligation between internal and external carotid artery. In general, there is no operative mortality or significant morbidity.[11] Another approach is the endovascular stent graft implantation with obliteration of the carotid aneurysm. This is safer and less invasive than surgical repair.[18]

We present a very rare case of carotid artery aneurysm located in the external branch, occurring in a female patient and with unknown etiology. It was responsible for venous compression signs, like edema, lip venous lake, cutaneous venous ecstasy as well as visible asymmetry on the patient's face.

Finally, we think that this report can be useful to illustrate why dermatologists, even during a consultation for cosmetic purposes, should always be provided a thorough history and physical examination.

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