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Sclerotherapy of face and oral cavity low flow vascular malformations: our experience

E. Górriz-Gómez, M. Vicente-Barrero *, M.L. Loras-Caballero, S. Bocanegra-Pérez, J.M. Castellano-Navarro, D. Pérez-Plasencia, A. Ramos-Macías

University Hospital Doctor Negrín, Insular University Hospital of Las Palmas de Gran Canaria, University of Las Palmas de Gran Canaria, Spain

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Abstract

We have reviewed our experience (15 patients during the period 2008–2012) in the treatment of low flow vascular malformations (LFVMs) of the face and oral cavity with polidocanol foam sclerotherapy. They were diagnosed clinically and with the help of Doppler ultrasound and magnetic resonance imaging. The maximum dose recommended for each session was 20 mg/day and the minimum interval between sessions was 4 weeks. Embolisation was repeated as many times as needed until the size of the lesions and the symptoms had been reduced sufficiently. Patients were followed up 1, 6, and 12 months after treatment had finished, and the size of the lesions was assessed objectively.

The 8 men and 7 women were aged between 18 and 71 (mean 44) years. The lesions had reduced and symptoms had improved in all cases. During the follow-up period, one patient relapsed and developed further symptoms. The pain and postoperative inflammation were successfully controlled with an analgesic and an anti-inflammatory drug. There was only one complication (superficial necrosis), which healed completely by second intention.

Direct puncture and sclerosis with polidocanol foam are an effective treatment for LFVM of the face and oral cavity.

Keywords: Vascular malformations; Sclerotherapy; Foam; Ethanol

Introduction

Low flow vascular malformations (LFVMs) are the result of errors in vascular morphogenesis during the embryonic period. The scarcity of cases means that a systematic study would be difficult, their unpredictable behaviour yields uncertain prognoses, and often results of treatment are poor.

Even though there is broad agreement about the difficulty of removing the lesion completely, there is still disagreement about the most appropriate treatment and other possible options.

Traditional resection may result in haemorrhage, muscular and nervous complications, and relapse. Sclerotherapy has therefore become the widespread and most appropriate approach to treatment,[1] and many foam and liquid sclerosing agents have been developed. Though there are many publications about sclerotherapy for LFVM of the lower limb, we know of few on the subject of lesions of the head and neck.

In this study we have reviewed retrospectively our experience of the treatment of LFVM of the face and oral cavity with polidocanol foam sclerotherapy.

Patients and methods

Fifteen patients with LFVM of the face and oral cavity were treated between 2008 and 2012.

The treatment was indicated for aesthetic disorders ($n = 7$), pain ($n = 1$), and discomfort when chewing, or occasional bleeding, or both ($n = 7$). Physical examination, Doppler ultrasound, and magnetic resonance imaging (MRI) led to the diagnosis. The Doppler ultrasound showed typically contin-

* Corresponding author at: c/ Alcalde Henríquez Pitti 13, 1° izq, 35400-ARUCAS, Las Palmas, Spain. Tel.: +34 928602951; fax: +34 928634736.
E-mail address: mmvicenteb@gmail.com (M. Vicente-Barrero).

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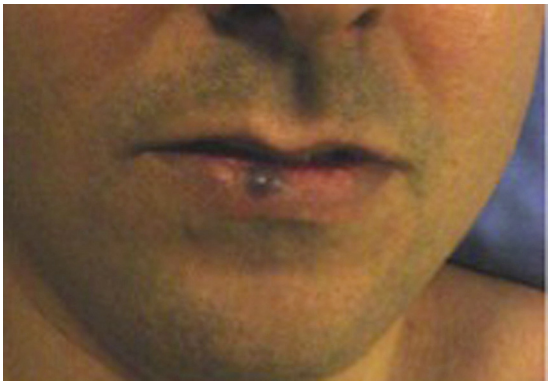

Fig. 1. Case 1 before sclerotherapy.

uous venous recordings, and the MRI focal T2 hyperintense lesions.

In all cases, an experienced vascular radiologist directly punctured the lesion and injected it with 0.5% polidocanol foam (a mean (range) of 3 (2–5) procedures/patient were required). To obtain the foam, we used the technique already described elsewhere,[2–9] and transferred the polidocanol from one syringe to another syringe together with carbon dioxide. The foam is obtained by repeatedly and energetically transferring it back and forth between the syringes (Fig. 2). It takes a few seconds to obtain the foam, and it is done just before it is injected. CO_2 provides stable foam for a few minutes – enough time to produce an endothelial lesion and subsequent thrombosis in the area of the malformation. Because the mix is easily obtainable, we may produce the quantity as needed for successive operations during the treatment.

For small lesions (10–15 mm) a single puncture in the raised area of the lesion sufficed. It was done with a 19-gauge (Terumo Europe N.V. 3001 Leuven, Belgium®) winged syringe (SURFLO Winged infusion set®). For bigger lesions, multiple punctures with the winged syringes were needed. By spanning the perimeter of the lesion, the largest surface of malformed tissue possible became exposed to the action of the sclerosing agent, and injections were made from each winged syringe introduced into the malformed tissue.

The maximum recommended dose of 0.5% lauromacrogol 400 (Etoxisclerol™) is 2 vials (4 ml/20 mg)/session, and the sessions were repeated as many times as needed until the size of the lesions had reduced and the symptoms decreased sufficiently (Figs. 1–3).

Patients were followed up 1, 6, and 12 months after the treatment, and the reduction in the size of the lesions was assessed objectively.

Results

We treated 15 patients (9 men and 6 women) between 26 and 71 years of age (mean 48) between 2008 and 2012 (Table 1). Lesions were reduced in size and symptoms improved in all cases. During the follow-up period one patient relapsed

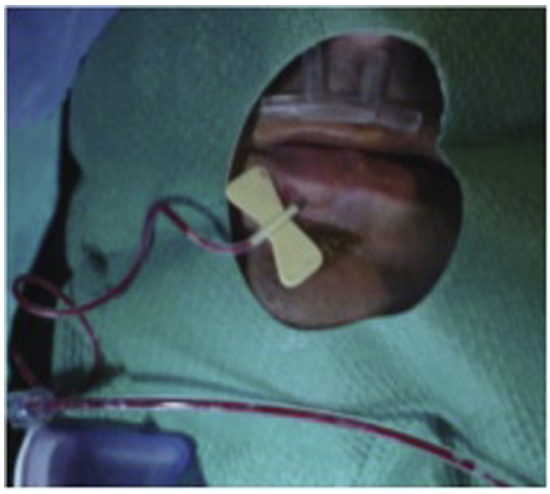

Fig. 2. Case 1 during the first of two embolisations.

(Case 5). The pain and postoperative inflammation were successfully controlled with an analgesic (metamizole) and an anti-inflammatory agent (diclofenac). There was only one complication, superficial necrosis, which healed completely by second intention.

Discussion

LFVM are produced by an error in vascular morphogenesis. They may result from hereditary factors or sporadic mutations, be it the expression of altered genes or the influence of environmental factors.[10]

The clinical presentations are diverse; 40% of cases are located in the head and neck.[11] The low global incidence accounts for the limited experience gained by most professionals. The most common symptoms are pain, compression of surrounding structures, and cosmetic deformities. Ulcers and bleeding are less common, although they are generally the reaction to trauma.

In the past, the usual treatment for LFVM of the head and neck was excision. With the arrival of endovascular treatment techniques and new embolising agents, however, embolisa-

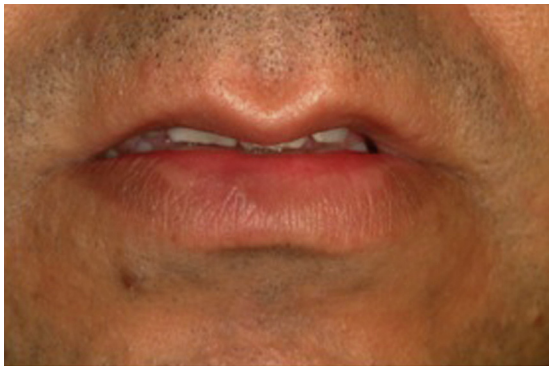

Fig. 3. Final view of case 1.