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ORIGINAL REPORT

Alcohol sclerotherapy to treat vascular malformations in the oral cavity☆

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KEYWORDS
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Abstract
Objective: To present our experience in treating vascular malformations in the oral cavity solely by injecting ethanol into the lesions.
Material and methods: We treated 26 patients (12 men and 14 women) with oral malformations. The diagnosis was based on clinical findings (n = 26), magnetic resonance imaging studies (n = 19), angiography findings (n = 5), and direct puncture venography (n = 2). To achieve sclerosis, we administered absolute ethanol through direct puncture. All interventions were performed under deep sedation.
Results: The vascular malformations treated ranged from 7 mm to 60 mm (median: 24.5 mm) in maximum diameter and had been present in the oral cavity for 0.2 to 54 years (mean: 13.6 years). The median age of the patients was 44.5 years (range: 12–87 years). The reason for treatment of the malformation was: an increase in size (n = 8), local bleeding (n = 11), risk of bleeding during dental extraction (n = 5), pain (n = 1), and esthetic purposes (n = 3). Lesions were located in the mucosa of the cheek (n = 12), in the facial gingiva (n = 5), in the labial mucosa (n = 6), in the tongue (n = 3), in the pterygomandibular region (n = 1), and in the palate (n = 1). The median dose of ethanol was 3.2 mL. Twenty lesions disappeared after a single injection session, five after two sessions, two after three sessions, and one after five sessions. In 20 cases all signs of the lesions disappeared, in 6 a bluish macule persisted, and in 2 a mass effect persisted. The symptoms improved in all patients. Only transient complications of sclerotherapy were observed: local inflammation, perioral paresthesia in two patients, and necrosis of the mucosa of the cheek in one.
Conclusions: Alcohol sclerotherapy is an efficacious procedure for treating vascular malformations in the oral cavity.

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PALABRAS CLAVE
Malformación arteriovenosa;
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Etanol;
Boca

Escleroterapia con etanol de las malformaciones vasculares de la cavidad oral

Resumen
Objetivo: Presentamos nuestra experiencia en la inyección intralesional de etanol como tratamiento único y efectivo de las malformaciones vasculares (MV) de la cavidad oral.
Material y métodos: Se trataron 26 pacientes (12 varones y 14 mujeres) con malformaciones orales. El diagnóstico se estableció por los hallazgos clínicos (n = 26), los estudios de resonancia magnética (n = 19), de arteriografía (n = 5) y de flebografía percutánea por punción directa (n = 2). Para la esclerosis de las lesiones se empleó etanol absoluto mediante punción directa. Todas las intervenciones se realizaron con sedación profunda.
Resultados: Se trataron 28 MV de diferentes tamaños, con una mediana de diámetro máximo de 24,5 mm (7–60), presentes en la cavidad oral durante una media de 13,6 años (0,2–54) en 26 pacientes. La mediana de edad fue de 44,5 años (12–87). Los criterios para el tratamiento de las malformaciones fueron: aumento de tamaño (n = 8), sangrado local (n = 11), riesgo de sangrado durante una extracción dental (n = 5), dolor (n = 1), trastorno estético (n = 3). Localización de las lesiones: 12 en la mucosa yugal, 5 en la encía vestibular, 6 en la mucosa labial, 3 en la lengua, una en la región pterigomandibular y una en el paladar. La dosis mediana de etanol fue de 3,2 ml. Veinte lesiones desaparecieron tras una única inyección, 5 tras 2 sesiones, 2 tras 3 sesiones, y una tras 5 sesiones. En 20 casos las lesiones desaparecieron, en 6 persistió una mácula azulada y en 2 persistió un efecto de masa. Los síntomas mejoraron en todos los pacientes. Las complicaciones asociadas a la escleroterapia intralesional fueron pasajeras: inflamación local, parestesia perioral en 2 pacientes, y necrosis de la mucosa yugal en uno.
Conclusiones: La esclerosis con etanol es un procedimiento eficaz para el tratamiento de pacientes con MV de la cavidad oral.

Introduction

The diagnosis and treatment of vascular malformations (VMs) is complicated, due to their varied clinical presentation. VMs are classified according to the affected vessels: capillary, venous, lymphatic, arteriovenous, and complex malformations[1,2]; and as hemodynamically active or high-flow malformations (HAVMs) in the presence of pathological arteriovenous communications and nidus, or as hemodynamically inactive malformations (HIMVs) or low-flow lesions in their absence.[3] The definitive diagnosis is based on the results of magnetic resonance imaging (MRI) studies, selective arteriography and direct puncture angiography.[4,5]

In clinical practice, the treatment of VMs includes resection and/or injection of sclerosing substances through selective catheterization or direct puncture.[6] When located in the oral cavity, these lesions not only generate esthetic concerns but also pose a clinical problem due to the risk of bleeding.[7–9] Even asymptomatic lesions represent a serious risk when teeth are to be removed in areas close to a VM. The sclerosing treatment of such lesions thus may be indicated.

We report our experience in a retrospective analysis of intralesional sclerotherapy with ethanol applied to oral VMs.

Material and methods

Between June 2006 and December 2008, twenty-six patients (12 male, 14 female) with 28 oral VMs, were treated. At the time of the study, institutional review board approval or patient informed consent was not required for a retrospective review of patient images and clinical information. The patients were evaluated by the Service of Stomatology, and the therapeutic indication was established by a multidisciplinary team.

The diagnosis was established with clinical findings (n = 26), MRI (n = 19), arteriography (n = 5) and direct percutaneous phlebography (n = 2). As the diagnosis was defined by other technique, and due to the location of the lesions, the multidisciplinary team decided to avoid direct radiation for head and neck as far as possible, and phlebography was only performed in two cases of HAVM of the cheek mucosa.

Informed consent was obtained in all cases. Patient confidentiality was observed at all times, and the principles of the Declaration of Helsinki were followed. Sclerotherapy was carried out in the Interventional and Vascular Radiology Section, with phlebographic study in two patients. In all cases deep sedation was administered. Sclerosis was performed using absolute ethanol through direct puncture with a 25G catheter. The amount injected depended on the size of the lesion, calculated by visual inspection and the imaging techniques. The surface was cleaned using antiseptic, and the puncture site was chosen for accessibility and elevation. The approach route to the nidus, when it is evident, was determined according to preoperative images. Whenever possible, we preferred several punctures instead of a single puncture, to encompass the largest possible area of the VM. In cases of HAVMs, the technique was the same, based on the phlebographic findings (2 of 3 cases), with the injection in the nidus or as near to it as possible. All patients received 1 mg/kg of methylprednisolone IV before the procedure. The ethanol was carefully injected with a 1–2 ml syringe to avoid overdose and overflow in the draining vein, and to avoid extravasation into the adjacent tissues, on a arbitrary basis, a maximum of 3 ml was