

Case Report

Cosmetic Surgery

Oral foreign body granuloma: unusual presentation of a rare adverse reaction to permanent injectable cosmetic filler

M. C. da Costa Miguel¹,
C. F. W. Nonaka¹, J. N. dos Santos³,
A. R. Germano², L. B. de Souza¹

¹Department of Oral Pathology, Dentistry School, Federal University of Rio Grande do Norte, Rio Grande do Norte, Brazil;

²Department of Maxillofacial Surgery, Dentistry School, Federal University of Rio Grande do Norte, Rio Grande do Norte, Brazil; ³Department of Oral Pathology, Dentistry School, Federal University of Bahia, Bahia, Brazil

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Abstract. A variety of injectable permanent fillers have been used in orofacial tissues for cosmetic purposes. Most of these substances seem to be well tolerated but adverse reactions have been reported. Foreign body granulomas are a rare adverse reaction to injectable permanent fillers. The authors report the unusual case of a 56-year-old woman with a foreign body granuloma located exclusively in the oral cavity that was due to injection of a permanent filler.

Keywords: foreign body granuloma; cosmetic filler; mouth.

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The demand for injection of different cosmetic substances into orofacial tissues has been increasing among middle-aged women to smooth wrinkles⁵ and to enlarge lip and cheek volume⁷. A variety of commercial injectable cosmetic fillers are available, but only a few are approved by the European Community or the US Food and Drug Administration (FDA)⁷. Most of these fillers seem to be well tolerated^{9,10}, but adverse reactions such as pain, oedema, ulceration, scarring, migration of the injected filler, and development of inflammatory nodules and foreign body granulomas have been reported³.

Injectable permanent fillers containing PMMA (polymethylmethacrylate immersed in a solution of collagen), such as Dermalive, Artecoll and Arteplast, have been implicated as possible causes of adverse reactions^{3–5,9}. PMMA comprises a combination of liquid collagen and round microspheres of solid polymethylmethacrylate³. These microspheres remain in the tissue after the collagen is absorbed and become encapsulated by connective tissue, which partially accounts for the bulking effect of the material³. The authors report the case of a woman with a foreign body granuloma due to cosmetic filler injection.

Case report

A 56-year-old Caucasian woman presented for evaluation of a swelling in the lower lip. Extraoral examination did not reveal significant findings. Intraoral examination showed a firm pink nodule covered with non-ulcerated mucosa, located in the right anterior inferior alveolar mucosa (Fig. 1). The swelling was painless and movable. Occlusal and panoramic radiographs showed no bone involvement. There were no palpable adenopathies and the remaining clinical examination did not reveal abnormalities. Her medical history was non-contributory. The patient showed no symptoms of atopy and was not taking any medication.

Considering an initial clinical diagnosis of salivary gland mucocele an excisional biopsy was performed. Histopathological

analysis revealed several small round cystic spaces within the cytoplasm of large foreign body giant cells, or adjacent to giant cells containing asteroid bodies (Fig. 2). The giant cells were randomly distributed against a background of fibrous connective tissue, and numerous lymphocytes and macrophages were observed. Immunohistochemical analysis using anti-CD68 antibody confirmed the presence of numerous macrophages and CD68-positive multinucleated giant cells (Fig. 3). The histopathological diagnosis was foreign body granuloma. When asked about any aesthetic procedure performed close to the anatomical site, the patient reported the injection of a cosmetic filler containing PMMA for lip enlargement performed almost 1 year earlier. The definitive diagnosis was foreign body granuloma due to cosmetic filler injection.

Discussion

All injectable permanent fillers can cause foreign body reactions, which may

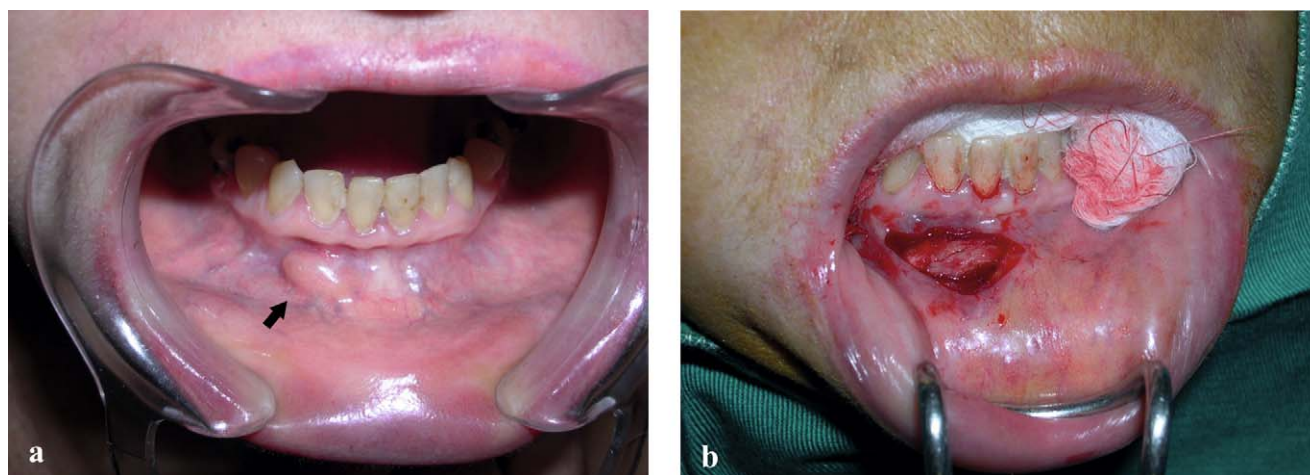


Fig. 1. (a) Pinkish non-ulcerated nodule located in right anterior inferior alveolar mucosa (arrow). (b) Elliptic incision disclosing a submucosal lesion.

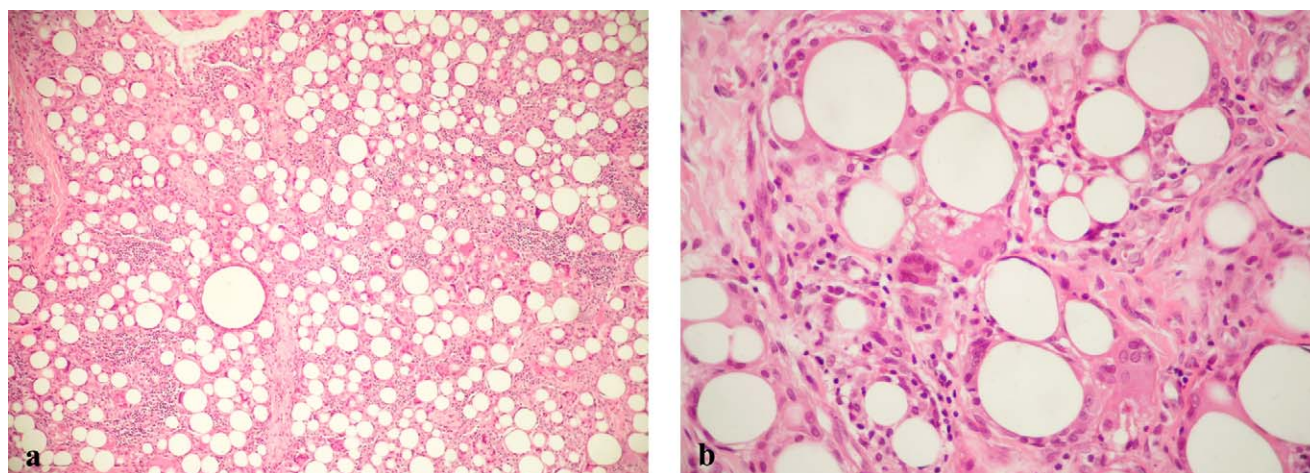


Fig. 2. (a) Photomicrography shows several small round cystic spaces, distributed on a background of fibrous connective tissue, with mononuclear inflammatory infiltrate (haematoxylin and eosin stain, original magnification $\times 100$). (b) Large foreign body giant cells containing asteroid body and small round cystic spaces (haematoxylin and eosin stain, original magnification $\times 400$).

develop into foreign body granulomas in some patients². The aetiology of these granulomas remains unclear and the chance of development is unpredictable^{3,6}. Granuloma formation has been associated with variability in the host response¹ and with infection^{1,3,6,9}. Despite the development of new products containing PMMA, foreign body granuloma formation is observed in 0.01% of patients⁵⁻⁸.

The present case is peculiar because of its unusual clinical presentation as a painless nodule located exclusively inside the oral cavity. The lesion was indistinguishable from other pathologies, such as salivary gland mucocele or soft tissue neoplasm. Injection of PMMA-containing fillers into the lips requires care to prevent uneven distribution, superficial implantation or implantation into facial

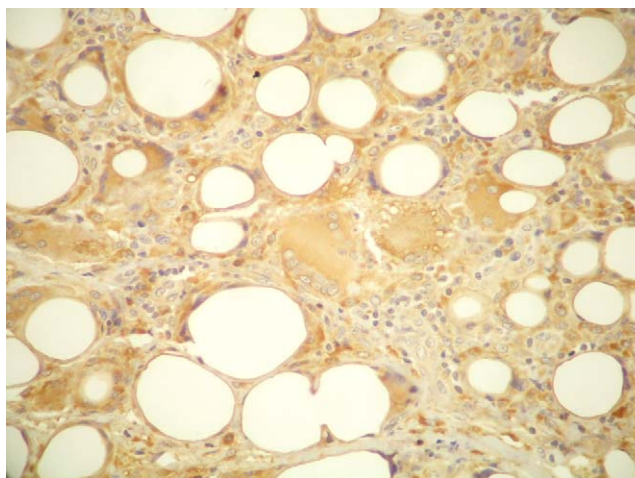


Fig. 3. Immunohistochemistry reveals numerous macrophages and CD68-positive multinucleated giant cells (streptavidin-biotin complex, original magnification $\times 400$).

muscles². The present case might be the consequence of poor clinical technique. The clinical diagnosis of oral foreign body granuloma due to cosmetic fillers is challenging, especially when the patient is not aware of the relationship with filler injection or if there is a deliberate omission of this information during anamnesis^{1,7}.

PMMA-containing injectable fillers may result in foreign body granulomas characterized by multiple small round cystic spaces approximately the same size found within the cytoplasm of large foreign body giant cells, or adjacent to giant cells containing asteroid bodies^{5,7,10}. Owing to the microscopic aspects of the present case, it probably represents an adverse reaction to a cosmetic filler containing PMMA^{5,7,10}.

Several therapeutic approaches have been described for the treatment of foreign body granulomas resulting from the injection of cosmetic fillers^{1,2,5,9}. In many cases, foreign body granulomas can be treated successfully with intralesional or systemic corticosteroids^{2,3,8,9}. Well-circumscribed lesions and cases of widespread lesions with repeated failure to respond to conservative therapy can be removed surgically⁹. In the present case, simple surgical excision was performed because it was a well-demarcated lesion.

Despite the low incidence of adverse reactions to injectable permanent fillers, the incidence of such complications may increase^{7,9}. The present case report alerts

professionals to the possibility of unusual clinical presentations of foreign body granulomas associated with the injection of permanent cosmetic fillers.

Competing interests

None declared

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None

Ethical approval

The patient gave informed consent to the work

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Address:

Dra. Lélia Batista de Souza
Universidade Federal do Rio Grande do Norte -
Departamento de Odontologia
Av. Senador Salgado Filho
1787 – Lagoa Nova – Natal –
Rio Grande do Norte – Brazil
ZIP 59056-000. Tel/Fax: +(55) 84 3215 4138
E-mail: mccmiguel@hotmail.com

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