

Clinical manifestation of systemic sarcoidosis after cutaneous filling

Manifestação clínica de sarcoidose sistêmica após preenchimento cutâneo

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ABSTRACT

Sarcoidosis is a non-infectious granulomatous disease of unknown etiology in which environmental, infectious, immunological, and genetic factors appear to be correlated. Clinical manifestations can occur in any organ, however there is predominance in the lungs and in intrathoracic lymph nodes. The cutaneous involvement of the disease occurs in roughly 25% of cases, with cutaneous filling procedures figuring as a potential trigger. The authors of the present article report a case of a patient who had granulomatous lesions on the face following cutaneous filling with hyaluronic acid. In the investigation of cutaneous lesions, the patient presented diagnostic criteria for sarcoidosis, with extensive pulmonary involvement.

Keywords: sarcoidosis; granuloma; hyaluronic acid

RESUMO

A sarcoidose é doença granulomatosa não infecciosa de etiologia desconhecida, em que fatores ambientais, infecciosos, imunológicos e genéticos parecem estar relacionados. Manifestações clínicas podem ocorrer em qualquer órgão, mas há predomínio em pulmão e linfonodos intratorácicos. O envolvimento cutâneo da doença ocorre em cerca de 25% dos casos, sendo o procedimento de preenchimento cutâneo um potencial desencadeante. Relata-se caso de uma paciente que apresentou lesões granulomatosas na face após preenchimento cutâneo com ácido hialurônico. Na investigação das lesões cutâneas, a paciente apresentou critérios diagnósticos de sarcoidose com extenso acometimento pulmonar.

Palavras-chave: sarcoidose; granuloma; ácido hialurônico

INTRODUCTION

Sarcoidosis is a disease that involves multiple organs, usually affects adults, with predominance in dark skin individuals and women. Its etiology remains unknown, however different factors have been implicated: polygenic inheritance, microorganisms (*Mycobacterium tuberculosis*, bacteria, herpes virus), exposures to mold, birds, insecticides, metals (aluminum, zirconium) and drugs such as interferon alpha. The interaction between genetic and environmental factors is probably responsible for the condition's pathogenesis. Diagnosis is established in the presence of clinical and radiological findings, and histological evidence of non-caseous epithelioid granulomas in the involved organs, after the exclusion of other causes. Any organ can be affected by sarcoidosis' granulomas, however pulmonary and / or intrathoracic lymph nodes involvement occur in more than 90% of cases, which are classified according to the Scadding criteria into: I) Hilar lymphadenopathy or mediastinal; II) Hilar lymphadenopathy or mediastinal and lesions of the pulmonary parenchyma; III) Lesions of the pulmonary parenchyma without adenomegalies and signs of pulmonary fibrosis; IV) Fibrosis signs in the pulmonary parenchyma. Cutaneous involvement occurs in a percentage that varies from 10 to 25%

Case Reports

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of cases. The most common cutaneous lesion is the erythema nodosum, which generally suggests a better prognosis. Clinical polymorphism, however, is a feature of sarcoidosis. Macules, papules, plaques, nodules, erythroderma, alopecia, lupus pernio, and infiltrations in tattoos or scars might be cutaneous manifestations of sarcoidosis.^{1,3}

CASE REPORT

Five months after undergoing a cutaneous filling procedure with hyaluronic acid in the glabellar area, a 58-year-old female patient presented erythematous lesions infiltrated in both malar, left frontal and right pre-auricular regions (Figures 1, 2). Systemic symptoms (dry cough and polyarthralgia, without criteria for arthritis in the previous 4 to 6 months) were described in the initial evaluation only in the medical records and had not been a reason to seek medical attention previously, since they were non-significant and occasional. The anatomopathological examination of the skin of the right pre-auricular region demonstrated chronic granulomatous dermatitis with sarcoid-like granulomas (Figures 3 and 4). A computerized tomography scan of

the thorax demonstrated multiple parenchymal nodules and lymph node enlargement in the middle mediastinum (Figures 5). Radiography of hands, echography/ultrasound of abdomen, electrolytes as well as the dosage of angiotensin converting enzyme were normal. Thus, based on clinical, radiological and histological data, the diagnosis of sarcoidosis was established. The patient started to use prednisone (0.5mg day / kg). Three weeks later, with improvement of the lesions, a decision was made for gradually decrease the use of prednisone. Three months after the suspension of prednisone, the patient maintained improvement of the cutaneous condition and stabilization of the pulmonary condition. One year later, however, she reported a new outbreak, with similar development and treatment.

DISCUSSION

Cutaneous filling substances have been increasingly used for the correction of unaesthetic dermatoses. Products based on collagen, autologous fat, poly-L-lactic acid, calcium hydroxyapatite, polymethylmethacrylate and hyaluronic acid are approved for esthetic use.⁴ Despite the fact that hyaluronic acid is a com-



FIGURE 1: Facial infiltrating erythematous lesions on the left forehead and bilaterally in the malar region



FIGURE 2: Lateral facial infiltrating erythematous lesions

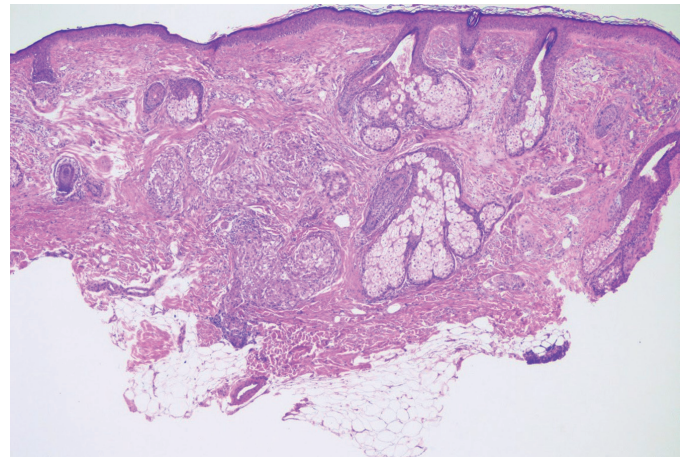


FIGURE 3: Skin biopsy in the right pre-auricular region; chronic granulomatous dermatitis, (HE x 20)

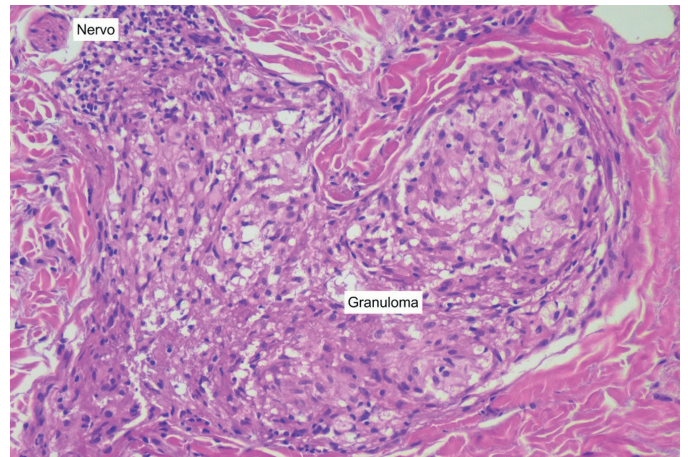


FIGURE 4: Skin biopsy in right pre-auricular region; sarcoid-like granulomas; absence of foreign body reaction, (HE x 200)

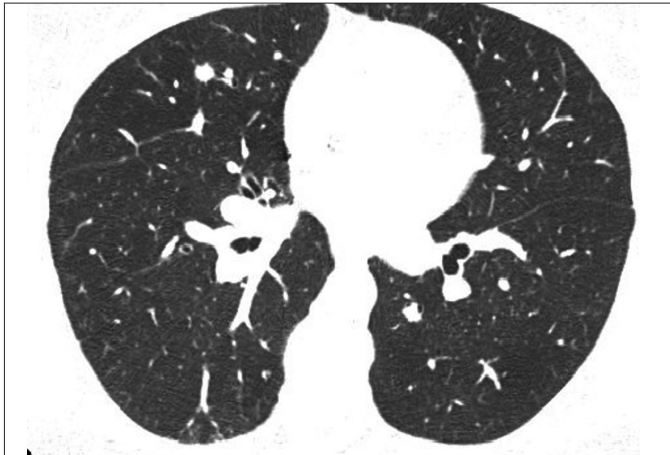


FIGURE 5: Parenchymal nodules and lymph node enlargement

ponent of the extracellular matrix – and thus less immunogenic and more biocompatible – adverse effects occur in 0.05–0.15% of cases. The main adverse events described are hypersensitivity and inflammation at the injection site, however bacterial infection, herpes reactivation, generalized scleromyxedema, and embolization with livedoid pattern, scar sarcoidosis, and systemic sarcoidosis have also been reported.^{5,6} Local complications usually arise between 6 and 24 months after the implantation

of the filling material. Cutaneous sarcoidosis has been reported in scars, tattoo sites, venipuncture, intramuscular and hyaluronic acid injections after a variable period of a few months to 38 years.⁷ Regarding the onset of sarcoidosis following the use of cutaneous fillers, it is known that the longer the time interval between the two events, the lesser is the possibility of it being a foreign body granuloma – an important differential diagnosis *vis a vis* pure cutaneous sarcoidosis.^{8,9} According to the literature review, it is postulated that the application of the filler can evidence signs of a subjacent sarcoidosis or even trigger the clinical picture in a previously predisposed patient.¹⁰ In the present case, the procedure was the probable triggering factor for the clinical manifestation of the systemic disease, characterized by cutaneous lesions and pulmonary involvement rather than the isolated involvement of the skin after use of the local injection. The following features corroborated for the diagnosis: radiological characteristics typical of pulmonary involvement; granulomatous cutaneous manifestations on the face, but not exactly where the previous application of the filler was carried out; histology compatible with sarcoidal granuloma rather than with the foreign body type or other granulomatous disease form.

In this manner, performing the clinical evaluation of symptoms that indicate involvement of the lung or other organs in sarcoidosis is crucial before carrying out cutaneous fillings, given that this procedure could trigger or exacerbate this disease in susceptible individuals. ●

DECLARATION OF PARTICIPATION:

Karisa Farias Miksza Thölken:

Manuscript planning, drafting, writing and discussion

Fabiane Mulinari Brenner:

Manuscript supervision, guidance, discussion and correction

Betina Werner:

Clinical-anatomopathological correlation and diagnostic analysis

Murilo Calvo Peretti:

Clinical follow-up of the patient

Luciana Menezes Azevedo:

Clinical follow-up of the patient

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