

Case Report

## A Foreign Body Granuloma due to a Dermal Filler: Limited Response to Intralesional and Systemic Steroid Treatment

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Published:

*J Turk Acad Dermatol* 2008; **2** (4): 82401c

This article is available from: <http://www.jtad.org/2008/4/jtad82401c.pdf>

**Key Words:** foreign body granuloma, filler

### Abstract

**Observations:** A 72-year-old woman presented to our clinic with edema on her face. The patient reported that she underwent augmentation of her face with a dermal filler 3 months ago. She did not know the name of the filler. On dermatologic examination, bilateral eyelid and facial edema, firm, irregular subcutaneous nodules were observed. Skin biopsy showed foreign body granuloma, microcyst formation and pink, polygonal, translucent material.

The affected areas treated with 60 mg/d oral corticosteroid during 2 months at tapering doses and repeated intralesional corticosteroid injections (20 mg/ml). Facial edema disappeared, but firm nodules slightly improved. Here, we report a case with foreign body granulomas to a dermal filler, its treatment and discuss histopathological differential diagnosis.

### Introduction

Wrinkle reduction using dermal fillers are now widely performed by dermatologists and plastic surgeons. Various adverse effects due to the fillers can be seen. While early reactions are temporary, late reactions tend to be permanent.

### Case Report

A 72-year-old woman presented to our clinic with solid facial edema. The patient reported that she underwent augmentation of her face with a dermal filler 3 months ago. She did not know the name of the filler. There were no allergic rhinitis, asthma and anaphylactoid reactions in her personal and family history. On dermatologic examination, bilateral eyelid and facial edema, firm, irregular subcutaneous nodules were seen (**Figure 1a**). Skin biopsy showed multiple small translucent pinkish particles of slightly different sizes, polygonal or irregularly

shaped with a variable lymphocytic infiltrate and multinucleated giant cells (**Figure 2**). Routine blood tests, levels of antinuclear antibody, angiotensin-converting enzyme, creatinine phosphokinase (CPK) were normal.

The patient treated with 60mg/d corticosteroid during one month at tapering doses and repeated intralesional injections of triamcinolone acetonide (20 mg/dl). Facial oedema disappeared, but firm nodules slightly improved (**Figure 1b**).

Informed consent was obtained from the patient.

### Discussion

All dermal fillers can lead to adverse reactions. Reactions can be attributed to the procedural technique, and the agent injected. Hyaluronic acid derivatives are the most used reabsorbable dermal fillers recently. Reports about long-term adverse



**Figure 1a-1b.** Facial oedema and firm subcutaneous nodules before (a) and after therapy (b)

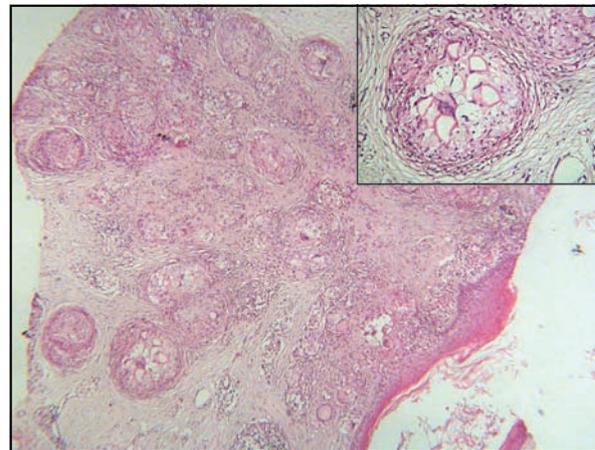
events secondary to hyaluronic acid injections are very rare. The composition of hyaluronic acid and acrylic hydrogel can also cause late adverse reactions [1, 2, 3].

Granulomas are the reactions which can be stimulated by any kind of foreign material. The mechanism of granuloma formation is not known clearly. It has been reported that the factors which may influence granuloma development are the structure of the filler, a previous infection or trauma [2].

When patient does not remember the filler injected, histopathology can be helpful to differentiate the foreign material. Our patient did not know the name of the dermal filler. In histopathological examination of the biopsy, pinkish, polygonal or irregularly shaped, unevenly distributed on a background of finely fibrillar collagen with a variable lymphocytic infiltrate and multinucleated giant cells were seen. These findings were concordant with histopathological findings of hyaluronic acid fillers. Artecoll granulomas shows approximately same size, small, round empty cyst-like spaces. In New-Fill granulomas, numerous, small,

spiky, irregular, translucent particles are seen. "Swiss cheese pattern" is typical for liquid silicone granulomas. This appearance is due to nodular collections of epithelioid histiocytes [2, 4].

In the treatment of inflammatory granulomas, minocycline, oral or intralesional steroids can be used. Intralesional steroids, 5-fluorouracil, imiquimod [5], bleomycin, aza-



**Figure 2.** Irregularly shaped, polygonal foreign material and multinucleated giant cells and foreign body granuloma (Hematoxyline-Eosin x 40).

thiopurin, isotretinoin are used to treat fibrotic nodules [2, 3]. Intralesional steroid must be applied immediately and optimal dosages (20-40 mg/ ml) in granulomas treatment. Surgery is generally preferred to visible firm nodules and granulomas [1, 2]. We did not have significant clinic result to the oral and intralesional corticosteroids in our patient.

As a result, the applications of dermal fillers can be resulted in foreign body granuloma formation. Identification of the foreign product might be required for therapeutic or medico-legal reasons. Histopathologic examination is an essential method to detect the type of the fillers. The patients should be informed about potential long-term complications. The medical treatment of late reactions are frequently difficult as in our patient.

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