

Hyaluronic acid-induced foreign body granuloma at the upper labial mucosa

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KEYWORDS

Hyaluronic acid;
Foreign body
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Hyaluronic acid (HA) is a kind of injectable dermal filler that can be utilized for facial rejuvenation, contouring, and volume restoration.^{1–4} It also can be used for nasolabial fold correction. Here, we reported a case of HA-induced foreign body granuloma that presented as a firm nodule at the submucosa of the right upper labial mucosa of a 46-year-old female patient.

This 46-year-old female patient came to our oral mucosal disease clinic for evaluation and treatment of a firm nodule at the right upper labial mucosa for more than 2 months. The firm nodule, measuring approximately 1.0 cm in greatest dimension, was palpable at the submucosal area of the right upper labial mucosa opposite to the right maxillary canine and first premolar. Slight tenderness was noted on palpation. The clinical diagnosis was a soft tissue tumor. After discussing with the patient and obtaining the signed informed consent, the firm nodule was totally excised under local anesthesia. The removed soft tissue specimen was sent for histopathological examination. Microscopically, it showed several discrete small foreign body granulomas composed of many fluid-filled cyst-like cavities surrounded by the granulomatous fibrous connective tissues in a fibrous and fatty stroma (Fig. 1A and B). The cyst-like cavities were mostly irregular in shape and contained pale blue translucent serum-like foreign body materials surrounded by macrophages, multinucleated foreign body giant cells, and lymphocytes (Fig. 1C, D, E and F). On high-power views, some of the cyst-like cavities were partially or completely surrounded by multinucleated foreign body giant cells (Fig. 1G and H). After checking the

atlas of foreign materials in the tissue sections provided by the American Academy of Oral and Maxillofacially Pathology, these pale blue translucent serum-like foreign materials in the cyst-like cavities were identified as the HA.⁵ Therefore, the above-mentioned characteristic findings finally confirmed the histopathological diagnosis of a late-onset HA-induced foreign body granuloma.^{1–4} After questioning the patient, she remembered the injection of some-kind of dermal filler for cosmetic correction of her right nasolabial fold 2.5 years ago.

The HA is an injectable dermal filler that is used for facial rejuvenation (skin quality improvement), wrinkle and fold correction (correction of nasolabial folds, periorbital wrinkles, or forehead lines), volume restoration (lip or cheek augmentation), facial contouring (chin augmentation or nasal ridge shaping), or other cosmetic procedures.^{1–4} HA is a glycoaminoglycan polysaccharide that is normally present in the human body and has no species specificity.^{2,3} Thus, when the HA is used as a dermal filler, the risk of allergic reactions is very low.^{3,4} A retrospective European survey has evaluated the risk of important adverse reactions with the use of injectable HA for cosmetic reasons from 1997 to 2001.⁴ A total of 4320 patients were evaluated and 12,344 syringes were injected. Only 16 cases of immediate hypersensitivity and 18 cases of delayed adverse reactions were found.⁴ Although some mild side effects including redness, swelling, bruising, tenderness, and itching at injection site are relatively common after HA injection, the delayed-onset nodule such as that described in the present case is not commonly found.^{3,4}

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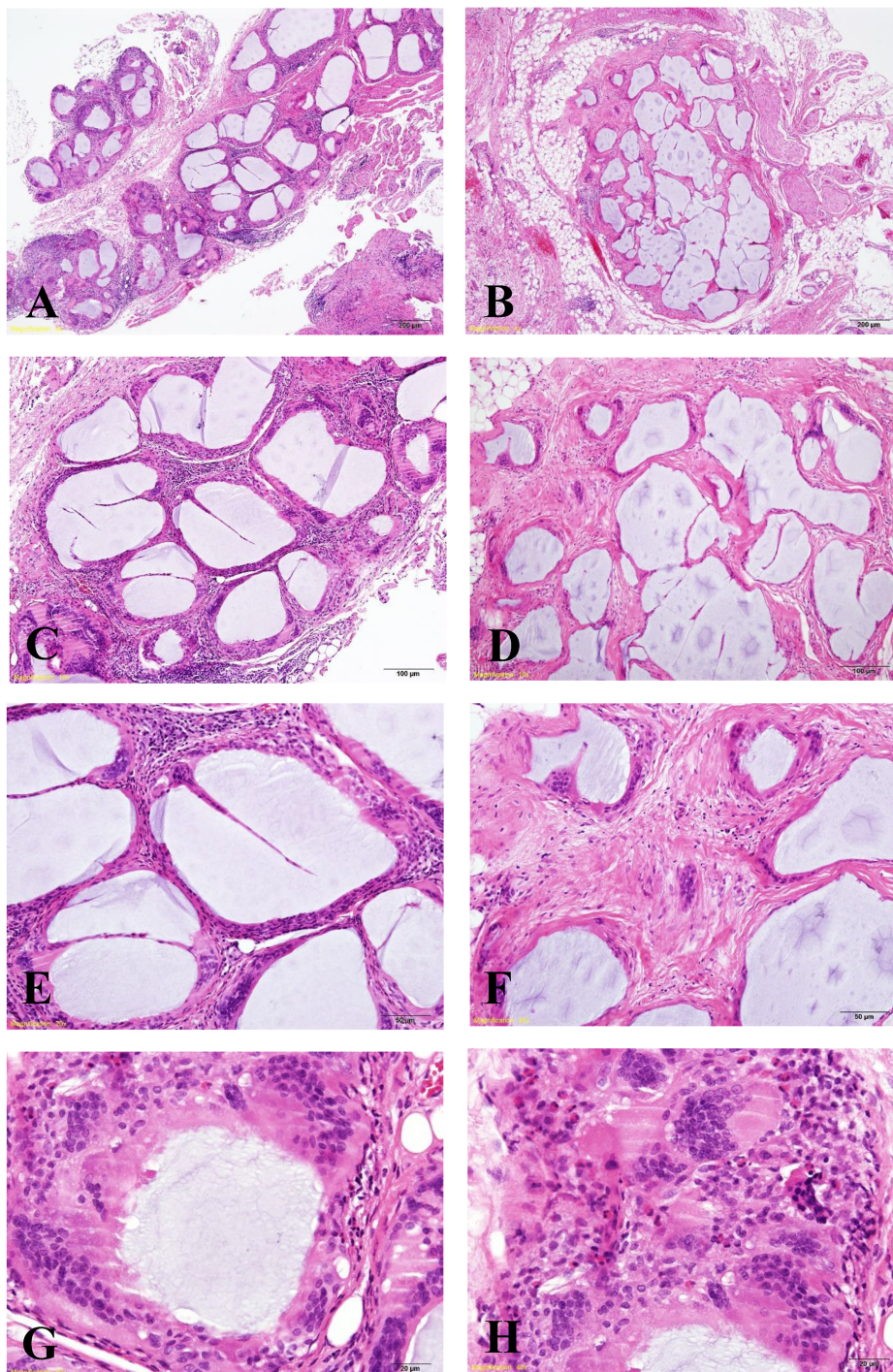


Figure 1 Histopathological photomicrographs of our case of hyaluronic acid-induced foreign body granuloma. (A and B) Low-power photomicrographs showing several discrete small foreign body granulomas composed of many fluid-filled cyst-like cavities surrounded by the granulomatous fibrous connective tissues in a fibrous and fatty stroma. (C, D, E and F) Medium- and high-power photomicrographs exhibiting that the cyst-like cavities were mostly irregular in shape and contained pale blue translucent serum-like foreign materials surrounded by macrophages, multinucleated foreign body giant cells, and lymphocytes. (G and H) High-power photomicrographs demonstrating that some of the cyst-like cavities were partially or completely surrounded by multinucleated foreign body giant cells. (Hematoxylin and eosin stain; original magnification; A and B, 4 \times ; C and D, 10 \times ; E and F, 20 \times ; G and H, 40 \times). (For interpretation of the references to color in this figure legend, the reader is referred to the Web version of this article.)

Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

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