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Hyaluronic acid-induced foreign body granuloma in the upper lip



KEYWORDS

Foreign body
granuloma;
Hyaluronic acid;
Upper lip

Hyaluronic acid (HA), a kind of injectable dermal filler, can be used for cosmetic augmentation of the lip.^{1–3} Here, we reported a case of HA-induced foreign body granuloma that presented as a short band of scar-like tissue at the right upper lip of a 36-year-old female patient.

This 36-year-old female patient came to our oral mucosal disease clinic for evaluation and treatment of a short band of scar-like tissue at the right upper lip for more than 3 months. The scar-like tissue mass was tender, firm, and palpable at the subcutaneous area of the right upper lip. It measured approximately 1.8 cm in greatest dimension. The clinical diagnosis was a scar tissue. After discussing with the patient and obtaining the signed informed consent, the band of scar-like tissue 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 vesicles and cyst-like spaces surrounded by the granulomatous fibrous connective tissues in the deep dermis or among muscle fibers (Fig. 1A and B). These vesicles and cyst-like spaces were round, oval, or irregular-shaped, and contained transparent amorphous serum-like foreign body materials with some of them being deep-blue in color. The granulomatous fibrous connective tissues were infiltrated by lymphoplasmic cells, histiocytes, and multinucleated foreign body giant cells (Fig. 1A, B, C and D). On medium- and high-power views, some of the vesicles and cyst-like spaces were partially or completely surrounded by multinucleated foreign body giant cells (Fig. 1E, F, G and H). After checking the atlas of

foreign materials provided by the American Academy of Oral and Maxillofacial Pathology, these transparent or deep-blue foreign body materials in the vesicles and cyst-like spaces were identified as the HA.⁴ Therefore, the above-mentioned characteristic findings finally confirmed the histopathological diagnosis of a late-onset HA-induced foreign body granuloma.^{1–3} After questioning the patient, she remembered the injection of some-kind of dermal filler for cosmetic augmentation of her thin upper lip 3 years ago.

The HA is an injectable dermal filler that is used for soft tissue augmentation, most commonly used for reducing wrinkles, fissures, and deep tissue folds and for cosmetic augmentation of the lip.^{1–3} HA is a glycoaminoglycan polysaccharide composed of alternating residues of the monosaccharide *D*-glucuronic acid and *N*-acetyl-*D*-glucosamine. HA is normally present in the human body and has no species specificity.^{2,3} When the HA is used as a dermal filler, the risk of allergic reactions is very low, and manufacturers suggest that there is no need for skin testing before the use.² A retrospective European survey has evaluated the risk of important adverse reactions with the use of injectable HA for cosmetic reasons from 1997 to 2001.⁵ A total of 4320 patients were evaluated and 12,344 syringes were injected. From 1997 to 2001, 34 cases of hypersensitivity are reported: 16 cases of immediate hypersensitivity and 18 cases of delayed adverse reactions.⁵ Thus, the global risk is 0.8% (34/4320). Up to date, there is still no ideal dermal filler. All fillers can lead to immediate or delayed adverse reaction. Therefore, it is necessary to inform patients fully before injection of any kind of dermal filler for cosmetic reasons.^{2,3}

<https://doi.org/10.1016/j.jds.2023.04.005>

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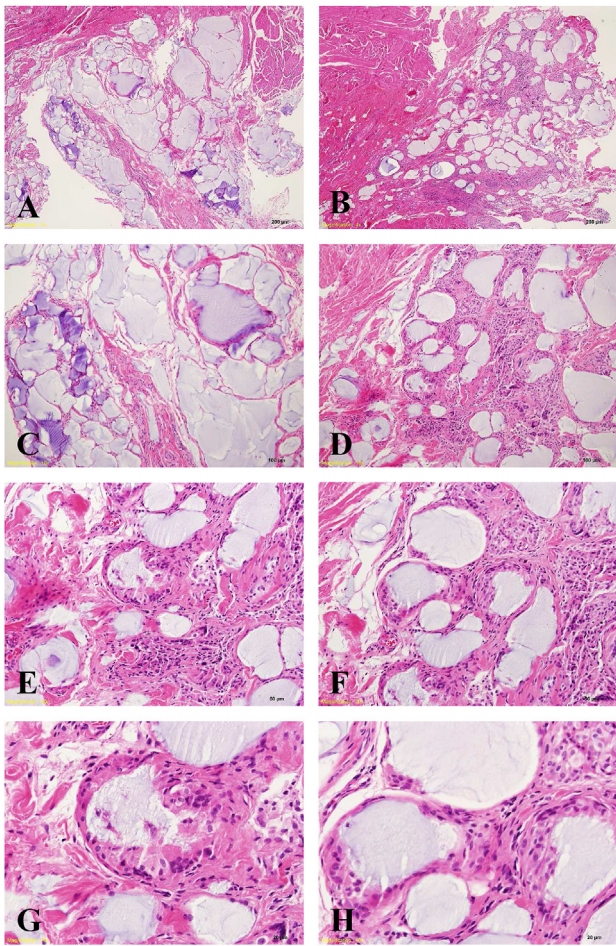


Figure 1 Histopathological photomicrographs of our case of hyaluronic acid-induced foreign body granuloma. (A, B, C and D) Low- and medium-power photomicrographs showing several discrete small foreign body granulomas composed of many fluid-filled vesicles and cyst-like spaces surrounded by the granulomatous fibrous connective tissues in the deep dermis or among muscle fibers. These vesicles and cyst-like spaces were round, oval, or irregular-shaped, and contained transparent amorphous serum-like foreign body materials with some of them being deep-blue in color. The granulomatous fibrous connective tissues were infiltrated by lymphoplasmic cells, histiocytes, and multinucleated foreign body giant cells. (E, F, G and H) Medium- and high-power photomicrographs demonstrating some of the vesicles and cyst-like spaces were partially or completely surrounded by multinucleated foreign body giant cells. (Hematoxylin and eosin stain; original magnification; A and B, 4 × ; C and D, 10 × ; E and F, 20 × ; G and H, 40 ×). (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.

Acknowledgments

None.

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Received 3 April 2023
Available online 18 April 2023

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