Hyaluronic acid (HA) is becoming the most common dermal filler used to treat facial wrinkles and augment the lips (1). In 1989, Balazs and Denlinger (2) were the first to introduce HA as a dermal filler. Since then, it began to gain popularity in Europe and the United States, and has been available in Canada since 1998. Many HA dermal fillers have been used to reduce skin wrinkles and grooves caused by facial aging and to augment lips. Restylane (Q Med, Sweden) is one of the main commercially available HA formulations.

Although HA has been reported to be a nontoxic, nonimmunogenic product, nodules, hypersensitivity and foreign body granulomas have been reported with its use (3-7). Common adverse effects following injection of HA dermal fillers include redness, discomfort, firmness, swelling and bruising.

Herein, we report the development of bilateral lower-lip foreign body granulomas in a new patient after injection with Restylane. Informed consent was obtained from the patient.

CASE PRESENTATION

A 52-year-old woman was treated with HA injection (Restylane) for lip augmentation by a general practitioner. It was the first time the patient had undergone such treatment. At first, the cosmetic result was satisfying to the patient. However, four weeks after the treatment, she began to notice simultaneous nodules developing on both sides of her lower lip. The treating physician reassured her and no actions were taken. The nodules continued to grow slowly over a couple of months.

Three years later, she was referred to the authors’ institute for further evaluation and treatment. Cutaneous examination revealed two nonerythematous nodular lesions on both sides of the lower lip, which measured 1.5 cm in diameter (Figure 1). The nodules were nontender and firm at palpation. The patient agreed to undergo nodule excision under local anesthesia. The procedure was performed in a staged fashion, with the left side completed first and the right completed three weeks later, to protect the lower lip vascularity. A wedge excision performed through and through, and the defects were closed primarily (Figures 2 to 4). She withstood the procedure very well.

Histopathological examination revealed heavy granulomatous inflammation with focal necrosis. The granulomas contained abundant foreign material.

DISCUSSION

The use of cosmetic fillers is the most common clinical procedure performed in the field of plastic surgery. The ideal filler material is supposed to be safe with a predictable outcome, nontoxic, biocompatible, easy to use, inexpensive and have a long duration of action, but be reversible at the same time (8). These features are yet to be reached by any product; however, HA filler is definitely a step forward.
Dermal fillers can have two generic classifications: temporary (degradable) and permanent. Another classification adopted by DeLorenzi (9) is that fillers are either reversible or nonreversible. An example of reversible dermal filler is HA because it can be completely removed by hyaluronidase. Most of the temporary dermal fillers are made of either collagen or HA (10). Permanent fillers, on the other hand, are usually synthetic and show very little break down in the tissue (3). Examples of permanent fillers include silicone and polymethylmethacrylate.

Karl Meyer and John Palmer discovered HA in 1934. They were able to isolate it from a cow’s eye and chose the name from hyalos (Greek for ‘glass’) and the uronic sugar found in it (11). HA is, to date, the most ideal filler available in the market. It is found naturally in the body in the extracellular matrix, and is present in the connective tissues of skin, cartilage, bone and synovial fluid. For that reason, it is biocompatible and nontoxic, with no risk for immunogenicity. HA has a short half-life, which manufacturers have extended by using cross-linking to retard its natural breakdown (9).

With aging, the viscoelasticity and volume of facial skin diminishes, in part, due to the altered amount and function of HA (8). Many classification methods have been adopted to determine the amount of rhytides in facial skin: the most popular of these methods are described by Fitzpatrick et al (12), Glogau (13) and Lemperle et al (14). HA injections have been used to reduce the aging affect in the facial skin. By Fitzpatrick et al. (12), Glogau (13) and Lemperle et al (14). HA injections have been used to reduce the aging affect in the facial skin. The viscosity of HA is increased by cross-linking. This increases the stability and reduces the frequency of migration of filler material, which is a known adverse effect. In addition, cross-linking stabilizes the HA by linking to retard its natural breakdown (9).

Immediate postoperative photograph showing primary closure of the right-side defect.

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