Cutaneous *Serratia marcescens* Infection in an Immunocompetent Patient after Filler Injection

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Serratia marcescens is a Gram-negative bacillus that belongs to the Enterobacteriaceae. The incidence of cutaneous infections caused by *S. marcescens* is extremely low and are predominantly observed in immunocompromised patients. We present here a first case of *S. marcescens* skin infection in an immunocompetent female patient after filler injection performed by an unlicensed practitioner.

CASE REPORT

A 62-year-old woman presented to our clinic with a 3-month history of an inflamed nodule on the glabellar area accompanying swelling on the forehead and periorbital areas (Fig. 1A). Approximately 2 years previously she had received injections of Artecoll®, a permanent filler containing polymethylmethacrylate (PMMA), into the glabellar area, administered by an unlicensed practitioner. Approximately 3 months prior to presentation she visited the same practitioner again and underwent an unknown procedure (explained as removal of collagen materials) along with injections of Juvéderm®, a hyaluronic acid (HA) filler, into the glabella and forehead. Thereafter, her face gradually became swollen, and an inflamed nodular lesion developed on the glabellar area. The lesions had been treated with topical antibiotics (fusidic acid and mupirocin), systemic antibiotics (amoxicillin-clavulanate and ceftezole) and several attempts at incisional drainage, but continued to wax and wane. No accompanying other skin lesions, enlarged lymph nodes, or signs of systemic involvement were detected. Laboratory data revealed normal biochemical and haematological study results. The results of skin tests with tuberculin, radiographic chest studies and atypical mycobacterial cultures were all normal. Histopathological findings showed a non-specific inflammatory reaction. Tissue and pus cultures were positive for *S. marcescens* and were sensitive to parenteral aminoglycosides, oral trimethoprim-sulphamethoxazole (TMP-SMX) and ciprofloxacin. Treatment with oral TMP-SMX (160–800 mg twice daily for 3 weeks) and 2 attempts at incisional drainage of abscess were performed, which resulted in resolution of the lesion and negative culture findings (Fig. 1B). No recurrence was observed one year after the completion of therapy.

DISCUSSION

The use of dermal filler for cosmetic dermatological indications is increasing rapidly. Infection or contamination can occur with the use of soft-tissue augmentation agents, even after the injection of licensed products by experienced aesthetic physicians (1). In our case, the unlicensed practitioner injected HA filler into the patient's skin in an area that was previously filled with PMMA filler. PMMA filler is a permanent synthetic filler, and such permanent fillers can induce long-lived, low-grade bacterial infections surrounding the implants (2, 3).

S. marcescens usually causes infections of the lower respiratory tract, urinary tract, and surgical wounds and otitis, endocarditis, and septicaemia (4, 5). *S. marcescens* infections are predominantly observed in immunocompromised patients (6). In the reported case, we suppose that the patient's skin was prone to infection due to the presence of PMMA filler, and that the additional HA filler injection allowed the entry of *S. marcescens*. Although we cannot specify the exact cause of contamination, it is likely that a lack of proper procedural hygiene played a crucial role in this infection. *S. marcescens* was possibly carried by humans in this case.

To our knowledge, this is the first reported case of *S. marcescens* facial infection after filler injection in an immunocompetent patient. The possibility of pathogenicity of *S. marcescens* should be considered when treating infections caused by filler injection. To help minimize the risk of infection, clean preparation of the skin is recommended in the area of treatment prior to filler placement, and physicians should consider that skin previously treated with permanent filler may be vulnerable to infection even by minor additional procedures. This

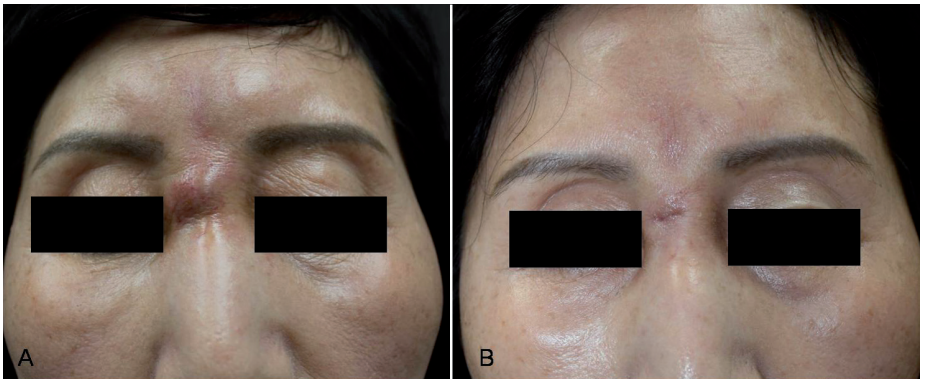

Fig. 1. (A) Erythematous inflamed nodule on the glabella and non-tender swelling in the upper facial area. (B) Clinical findings one month after treatment with oral trimethoprim-sulphamethoxazole.

rare skin infection with *S. marcescens* requires specific microbiological diagnosis and antibiotic treatment.

The authors declare no conflicts of interest.

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