

LETTER TO THE EDITOR

Delayed hypersensitivity reaction to hyaluronic acid dermal filler post-COVID-19 viral infection

To the Editor,

Dermal fillers have been an effective therapy for people pursuing noninvasive facial rejuvenation.¹ Hyaluronic acid (HA) soft tissue fillers specifically have become a popular device for an enhancement of facial features over the last few years.²

We are presenting a case of a 32-year-old woman treated at The Esthetic Clinics, Mumbai, in February 2020 for facial rejuvenation. She was rejuvenated using dermal fillers at multiple sites on her face. The patient is a regular patient with us and had facial rejuvenation with dermal fillers regularly for the past 6 years and has never reported any reactions or adverse effects related to dermal fillers in the past (Figure 1A,B).

With her last dermal filler sitting in February 2020, the patient was symptomless for months and experienced a sudden swelling in the periocular area in December 2020. This area has received dermal filler injections before. This was the first time the patient noted a reaction to the fillers and surprisingly at a time when no procedures had been performed for ten months. A thorough medical history revealed a history of COVID-19 infection in November 2020, and the patient was antigen positive and subsequently became antibody positive as well. The swelling subsided in a few days after oral anti-inflammatory treatment.

The literature review highlighted a similar case of facial swelling in a patient with past dermal filler treatment after COVID-19 vaccine administration. FDA medical officer, Dr. Rachel Zhang, reported face and lip swelling in three people after they received the Moderna COVID-19 vaccine in the Phase 3 trial. Two of these patients had a history of previous dermal fillers' treatment. The first patient had

a cheek dermal filler 6 months prior to the vaccination, while the second patient underwent lip augmentation using dermal fillers two days after the vaccination.³

Turkmani et al, in a study on fourteen female patients in the age range of 22–65 years, reported localized redness along with firm and intense swelling on their face at the site of previously injected dermal fillers. In all cases, they reacted 3–5 days after influenza-like illness (fever, headache, sore throat, cough, and fatigue). The duration of the last filler injection varied from 2–10 months before experiencing the illness.¹

Hyaluronic acid molecules in all dermal fillers are the same polysaccharide molecules that make up a large portion of our skin. As a result, the HA molecule itself is not generally known to be an immunogen.⁴ In previous articles, it was noted that the swelling and hypersensitive reaction in the HA filler injection site were encountered post-COVID-19 vaccination and/or flu-like disease. However, in our patient swelling and hypersensitive reaction at the site of filler injection were noted post-active COVID-19 viral infection and not post-COVID-19 vaccination. The development of the antibodies in the body to COVID-19 antigen might have reacted in the similar way as post-COVID-19 vaccination.

Hypersensitivity reaction following HA injection post-COVID-19 episode seems to be the most credible explanation for our observed late-onset event. Still, the exact etiology of delayed reaction in relation to HA fillers and the influenza virus infection/COVID-19 antibodies remains incompletely understood and needs further research and discussion. This will definitely assist in the future management of the reported cases.



FIGURE 1 (A) Clinical left lateral profile photograph of the patient immediately post the dermal filler injection in periocular area (right side of the face). Photograph was taken in February 2020. (B) Clinical left lateral profile photograph of patient showing hypersensitivity reaction in the periocular area previously injected with dermal filler post-COVID-19 viral infection. Photograph was taken in December 2020

KEYWORDS

COVID-19 viral infection, dermal filler, hyaluronic acid facial fillers, hypersensitivity reaction

CONFLICT OF INTEREST

The authors have no conflict of interest.

Debraj Shome MD, FRCS, FACS, FAACS, MBA¹ 

Komal Doshi MDS²

Sapna Vadera MDS²

Rinky Kapoor MD³

¹Department of Facial Plastic Surgery & Facial Cosmetic Surgery, Director, The Esthetic Clinics, Mumbai, India

²Fellow, Facial Plastic Surgery and Facial Cosmetic Surgery, The Esthetic Clinics, Mumbai, India

³Department of Dermatology, Cosmetic Dermatology & Dermato-Surgery, The Esthetic Clinics, Mumbai, India

Correspondence

Debraj Shome, Facial Plastic Surgeon, The Esthetic Clinics, Mumbai, India.

Email: debraj.shome@theestheticclinic.com

ORCID

Debraj Shome  <https://orcid.org/0000-0003-2163-1170>

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