

Article type: Case Report

Title: Unilateral facial edema after filler injection of the lower eyelid

Tom S. Decates, MD¹, Elmer C. Kruijt Spanjer, DMD², Renu Saini, DMD³, Peter J. Velthuis, MD PhD¹, Frank M. Niessen, MD PhD⁴

¹Department of dermatology, Erasmus Medical Center, postbus 2040, 3000 CA Rotterdam, the Netherlands ²Department of Maxillo and Facial Surgery, Haaglanden Medisch Centrum, the Hague, the Netherlands ³Meyer Dental Practice, the Hague, the Netherlands ⁴Department of plastic surgery, Amsterdam University Medical Center, postbus 7057, 1007 MB Amsterdam, the Netherlands

Corresponding author:

Tom S. Decates, MD Department of dermatology Erasmus Medical Center, Postbus 2040 3000 CA Rotterdam, the Netherlands Email: t.decates@erasmusmc.nl

Funding sources: None

Conflicts of Interest: None declared.

Manuscript word count: 598 words References: 7 Figures: 4 Supplementary figures: 0 Tables: 0 Supplementary tables: 0

Keywords: cosmetic dermatology; dermal fillers; filler; fillers; edema; surgery; eyeled; facial; unilateral

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/dth.13539

Introduction

The use of hyaluronic acid gel fillers for rejuvenation of the face has been increasing in popularity over the years.^{1,2} This nonsurgical technique with a temporary effect is commonly used in the periocular region to restore volume. Unfortunately, in 11% of the treatments of this so called 'tear trough' with hyaluronic acid gel fillers malar edema occurs.³ In this report, we present an unusual case of unilateral edema, that occurred two weeks after placement of filler in the tear trough on both sides.

Case Report

A 32-year old woman presented for a cosmetic consultation to address unilateral swelling of the left cheek (Figure 1A). She states she had a hyaluronic acid filler injected (Stylage S^{*}, 0,5 ml per side) in the tear trough on both sides, with a canula, two weeks earlier. Ten days after the treatment she began to notice swelling of the area underneath her left eye, slowly expending towards the left cheek. The original injector already injected 50 units of hyaluronidase into the left tear trough, without any result. Her medical history shows a PMS (silicone oil) treatment of the lips 10 years earlier. Physical examination revealed unilateral orbital and cheek edema with a palpable large mass in the left cheek. Ultrasound is very helpful in cases of adverse events after being injected with hyaluronic acid gel fillers.⁴ With this a large hypo-echogenic area, interpreted as an abscess, was visible and there existed a hypo-echogenic tract towards the second bicuspid on the left side of the maxilla (tooth nr 25), possibly a fistula (Figure 1B). A closer look inside the mouth showed a decayed second bicuspid in the left side of the upper jaw and she was therefore referred to the dentist (Figure 1C). Consultation by the dentist revealed deep caries of tooth 25 with a painful swelling of the buccal corridor. Radiological examination showed an apical radiolucency, highly suggestive of apical periodontitis (Figure 1D). The patient was then seen by the OMFS specialist. Extraction of the tooth from its socket was followed by drainage of a purulent fluid. The patient felt instant relieve of the pressure she felt before the treatment. After one week the edema fully disappeared.

Discussion

The exact etiology of the edema after filler injections is poorly understood.³ The edema extends outside the borders of the injection site and may represent a low grade inflammatory reaction; however, there is usually an absence of any hard signs of inflammation.³ DeLorenzi suggests that some patients may have, or develop, a hypersensitivity to the HA and thus, the noninfective edema may be a result of this.⁵ A Pubmed search was conducted to identify articles about unilateral edema

after dermal filler injections, but none was found. Thus, when a patient visits a clinic with unilateral edema, one should also consider other possible causes.

Tooth decay is a common problem in the modern world. If left untreated all infected root canals will lead to apical periodontitis. The golden standard to diagnose apical periodontitis is the combination of intra oral examination and two- or three-dimensional radiological examination. An ultrasound can also be used in case of soft tissue swelling with a sinus tract or fistula.⁶ Long standing apical periodontitis can lead to chronic elevation of inflammatory response.⁷ Treatment comprises a root canal treatment or removal of the affected tooth. Both options lead to removal of the infection and drainage of any abscess formation.

Familiarity with all the possible causes of adverse events after injections with hyaluronic acid gel fillers accelerates the treated and healing of the patient with complications. Reporting this case should raise awareness about possible teeth related complications.

Consent

Written informed consent was obtained from the patient for publication of this case report. A copy of the written consent is available for review by the Editor of this journal.

References

- American Society for Aesthetic Plastic Surgery website. http://www.surgery.org/sites/default/files/ASAPS-2018-Stats.pdf. Accessed September 10, 2019.
- 2. Decates T, de Wijs L, Nijsten T, Velthuis P. Numbers on injectable treatments in the Netherlands in 2016. J Eur Acad Dermatol Venereol. 2018 Aug;32(8):e328-e330
- 3. Mustak H, Fiaschetti D, Goldberg RA. Filling the periorbital hollows with hyaluronic acid gel: Long-term review of outcomes and complications. J Cosmet Dermatol. 2018 Aug;17:611-616.
- 4. Schelke LW, Decates TS, Velthuis PJ. Ultrasound to improve the safety of hyaluronic acid filler treatments. J Cosmet Dermatol. 2018;17:1019-1024.
- 5. DeLorenzi C. Complications of injectable fillers, part I. Aesthet Surg J. 2013;33:561-575.
- 6. Cotti E, Musu D, Goddi A, Dettori C, Campisi G, Shemesh H. Ultrasound Examination to Visualize and Trace Sinus Tracts of Endodontic Origin. J Endod. 2019;45:1184-1191
- Georgiou AC, Crielaard W, Armenis I, de Vries R, van der Waal SV. Apical Periodontitis Is Associated with Elevated Concentrations of Inflammatory Mediators in Peripheral Blood: A Systematic Review and Meta-analysis. J Endod. 2019;45:1279-1295

Figure 1A Appearance of the edema of the left cheek at the initial visit.



Figure 1B Ultrasound image of the left cheek clearly showing a hypo-echogenic area*, suspect for abscess and possible a fistula**



Figure 1C An abscess and decayed second bicuspid in the left side of the upper jaw



Figure 1D Radiological examination of tooth nr 25 showing deep caries with a decayed part of the crown.*

