

# Treatment of the Induration of the Soft Tissue of the Lower Eyelids After Accidental Oil Injections

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**Summary:** Injection cosmetic procedures have shown rapid continuing growth in the last 2 decades. Various substances are injected into the periorbital region for skin quality increase and correction of tear trough deformity, including hyaluronic acid, peptides, collagen, and others. Sometimes patients get accidentally injected with different substances that are not approved for cosmetic treatment in this anatomic area. The author presents a case of a 51-year-old woman, injected with unknown oil solution into the lower eyelid skin by the local dermatologist. Inflammation and induration of the skin of the lower periorbital region have occurred after these injections. The patient was treated conservatively until the acute process stopped, and then surgical correction was performed to correct skin and orbicularis oculi muscle induration changes. Surgical treatment included direct oil cyst excision and removal after injection changed tissues between skin and orbicularis oculi muscle. The patient was observed for scheduled appointments and conservative treatment to prevent unfavorable scar formation and lower eyelid deformity. Although different kinds of oil substances are not approved for skin injections for cosmetic purposes, accidental injections occur and may lead to terrible results. Methods to correct eyelid deformity after oil solution injections are not presented in the literature. In this article, the author presents a case report with the method of correction of induration of soft tissues of the lower eyelids occurring after oil injections. Although cases like this are rare, they require correct surgical solution to provide a good aesthetic result after the treatment. (*Plast Reconstr Surg Glob Open* 2025; 13:e6482; doi: [10.1097/GOX.00000000000006482](https://doi.org/10.1097/GOX.00000000000006482); Published online 17 January 2025.)

According to American Society for Aesthetic Plastic Surgery statistics, nonsurgical cosmetic procedures have shown rapid growth for the last 2 decades, whereas the number of surgical procedures is stable. The number of patients choosing nonsurgical rejuvenation continues to increase due to the growing aging population focused on beauty and physical appearance. The popularity of injection techniques used for facial rejuvenation with various substances can be explained due to their short rehabilitation, low cost, and maintaining the skin quality increase effect.<sup>1</sup>

Biodegradable fillers are commonly used for the correction of the volumetric changes in the various regions of the face. The most frequent zones of correction include the temporal region, tear-through deformity, zygomatic area, nasolabial fold, jawline, and others.<sup>2</sup>

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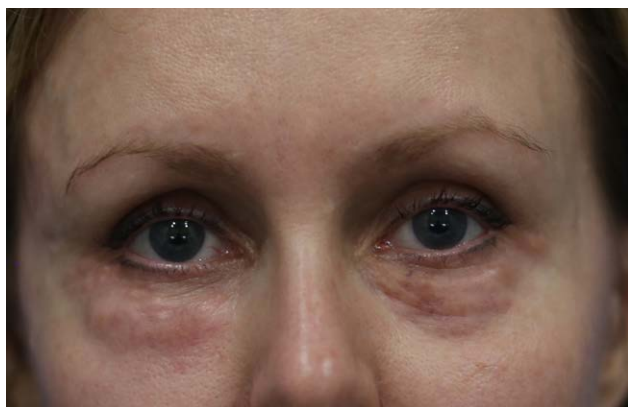
Different kinds of products are available on the market for skin quality increase. This includes different kinds of cross-linked hyaluronic acid fillers, poly-L-lactic acid, calcium hydroxyapatite, and collagen-based products. Besides their differences in composition, preparation, and injection techniques, all these substances degrade over time, stimulating neocollagenesis which leads to skin quality increase.<sup>3</sup>

Sometimes, patients get accidentally or intentionally injected with nonabsorbable substances for aesthetic purposes. In most cases, it is silicone-containing products, used for permanent volume filling. The phenomenon of silicone granuloma formation and even distant migration is well known in professional society. The permanent filler usually causes prolonged swelling and deformation of injected areas. In most cases, surgical excision of affected soft tissue and granulomas is required for aesthetic result improvement.<sup>4,5</sup>

Vaseline, paraffin, and other oil injections are well known for being self-injected into the penis for volume increase. Complications of such injections often require excision of involved soft tissue with following full-thickness skin grafting or other methods of reconstruction.<sup>6</sup>

Disclosure statements are at the end of this article, following the correspondence information.

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**Fig. 1.** Patient 3 days after the oil injected into the lower periorbital area before the treatment with betamethasone topical injections.

Although oil substances are rarely injected into the facial region, sometimes accidental injections occur. In this article, the author presents a case report of accidental injection of an unknown oil solution in the lower periorbital region and the algorithm of the treatment of postinjection changes.

### CASE REPORT

A 51-year-old woman was referred to our department 3 days after an unknown oil substance had been injected into the lower periorbital area by the local dermatologist. Details of the accident were not available; all the information was received from the patient. The patient stated that she had received an accidental injection of the oil solution proposed for topical use only instead of hyaluronic acid mesotherapy procedure by the local dermatologic practitioner. Pronounced edema and bruising of soft tissues with erythema of the skin had occurred (Fig. 1).

Routine ultrasound examination with elastosonography revealed significant induration of the soft tissues with boluses of permanent filler fragments located underneath the skin and in the orbicularis oculi muscle. Before the treatment initiation, local institutional ethic board approval was obtained (No. 02-172017).

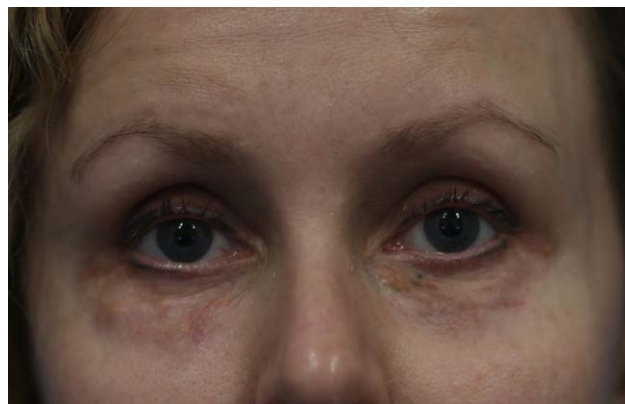
To prevent and minimize ongoing inflammatory and fibrotic changes, the patient was given 1 mL of 50% betamethasone solution injections in focuses of soft tissue induration at days 3, 24, 45, and 65 after the incident. At 2 months after the last betamethasone injection, stabilization of soft tissue induration was achieved, and surgical treatment was performed (Figs. 2, 3).

Surgical correction involved the areas of the skin and soft tissue induration and fibrosis with excision of nonresorbed oil granulomas and fragments of fibrotic tissue. With subciliary incision approach to the lower periorbital region, the skin was elevated from the orbicularis oculi muscle all the way down to the lower orbital margin.

Foci of the fibrotic tissues and oil granulomas on top of the orbicularis muscle and under the skin surface were identified and excised. Induration of the skin areas were thinned sharply from underneath. (See Video 1 [online], which displays the overview of the subciliary



**Fig. 2.** Patient after 2 months of the conservative treatment with topical betamethasone injections into the affected area (before the last one).



**Fig. 3.** Patient 2 months after the last betamethasone injection before the surgical treatment.



**Fig. 4.** Patient 1.5 years after the surgical treatment.

approach to skin dissection and fibrotic foci. Skin trimming from the underneath maneuver.)

Skin edges were approximated with 6/0 polypropylene running intradermal suture without the skin excess excision. Suture was removed on day 5 after the surgery. Healing occurred without complications. The patient's appearance 1.5 years after the surgical treatment is shown in Figure 4.

## DISCUSSION

Although oil injections into the facial regions are non-frequent, sometimes, this may accidentally happen in the cosmetic field. Most case reports of correction of the complications of permanent filler injections focus on the silicone granuloma excision.

Surgical solutions for the complications of oil injections such as Vaseline or paraffin are well known in reconstructive urology and require the excision of the involved soft tissues with full-thickness skin grafting or local flap coverage.<sup>6</sup>

The complexity of oil injection complications is commonly due to the large area of soft tissues involved with fibrotic changes and skin induration. There are many methods of eyelid defect reconstruction techniques described that involve local flaps or skin grafts, but perhaps, this approach was unreasonable in the present case.<sup>7</sup>

In this case report, we present an algorithm that focused on the conservative treatment of tissue induration which occurred after accidental or deliberate injection of oil solution into the lower periorbital area with staged 50% betametasone injections in an acute period and subsequent surgical excision of oleogranulomas and fibrotic tissues. Steroid injections are widely used in plastic surgery and dermatology for treatment of keloid scars.<sup>8</sup> Additionally, they are used to prevent excessive scarring and fibrosis and to decrease soft tissue thickness after rhinoplasty.<sup>9,10</sup> Although there is no evidence reported in the scientific literature of effectiveness of betametasone injections in similar cases, we believe that such treatment was effective for decreasing induration and formation of excessive fibrosis of soft tissue of the lower eyelids.

The pathogenesis of induration changes which develop in soft tissues after oil injections can be related to inflammatory response and excessive fibrosis formation in affected areas. The exact mechanism of these changes and effectiveness of the treatment are to be determined in future studies. In this case report, we achieved a good aesthetic result of the combined conservative and surgical treatment.

## CONCLUSIONS

In this article, the author presents the case of correction of complications due to oil injection in the lower periorbital region. The clinical tactic included conservative treatment with topical injections of glucocorticosteroids

to achieve stabilization of the soft tissues and subsequent surgical treatment. Although the case is limited to 1 patient, the aesthetic result of the treatment algorithm is promising. This approach might be helpful in the case of occasional oil injections in lower eyelids.

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## DISCLOSURE

*Dr. Safronov is an international member of American Society of Plastic Surgeons. The other authors have no conflicts of interest to disclose.*

## PATIENT CONSENT

*The patient provided written consent for the use of her image.*

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