

Correction of cicatricial and involutional lower eyelid ectropion with hyaluronic acid



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INTRODUCTION

Eyelid ectropion is an anatomic malposition in which the eyelid is turned away from the globe of the eye. Failure of the lid to rest flush against the underlying eyeball may cause a complex array of symptoms beyond aesthetic consequences, including pain, dryness, irritation, foreign body sensation, tearing, erythema, chronic conjunctivitis, corneal ulcers, and scarring.

There are 5 types of eyelid ectropion: involutional, cicatricial, paralytic, congenital, and mechanical.¹ The most common type is involutional, involving horizontal lid laxity caused by age-related deterioration of medial and lateral canthal tendons.² The next most common type is cicatricial, typically caused by scarring of the lower eyelid caused by trauma or ulceration from injury or surgery.²

Traditionally, ectropion is treated with various types of eyelid surgeries, depending on the severity and location of the ectropic eyelid.^{3,4} Alternatively, studies have found that hyaluronic acid (HA) injections may offer a temporary alternative for correcting cicatricial ectropion while avoiding many of the risks and complications of eyelid surgery.³⁻⁵ This case series describes successful treatment and long-term correction of both cicatricial and involutional eyelid ectropion using HA injections in an office setting.

CASE REPORT

Patient 1

Patient 1 was an 87-year-old man who presented with lower eyelid eversion and ocular inflammation

Abbreviation used:

HA: hyaluronic acid

of the left eye diagnosed as cicatricial lower eyelid ectropion secondary to vertical contracture of the lower lid caused by Mohs micrographic surgical defect repair (Fig 1, A). The patient previously underwent 3 surgical revisions including a full-thickness skin graft, a canthopexy, and a lateral tarsal strip procedure, but the ectropion failed to improve. The patient complained of tearing and pruritus and was concerned with improving the aesthetics of the ectropic eyelid.

Patient 1 was treated with 0.2 mL of HA injected subcutaneously below the ciliary margin above the orbicularis muscular plane into the lateral and medial lower left eyelid. At the ciliary margin, the Tyndall effect was immediately observed as a bluish bleb appeared. The patient was instructed to massage the bleb 4 times daily until his next appointment. One week later, an additional injection of 0.3 mL HA was repeated, and the patient was told to continue digital massage until the bleb softened. Six weeks after treatment, ocular inflammation subsided, and the patient reported that tearing and pruritus had improved. Nine weeks after treatment, the patient presented with no significant ectropion. Eighteen months later, there is no recurrence of left eyelid ectropion, and the patient remains satisfied with both cosmetic and functional results of his treatment (Fig 1, B).

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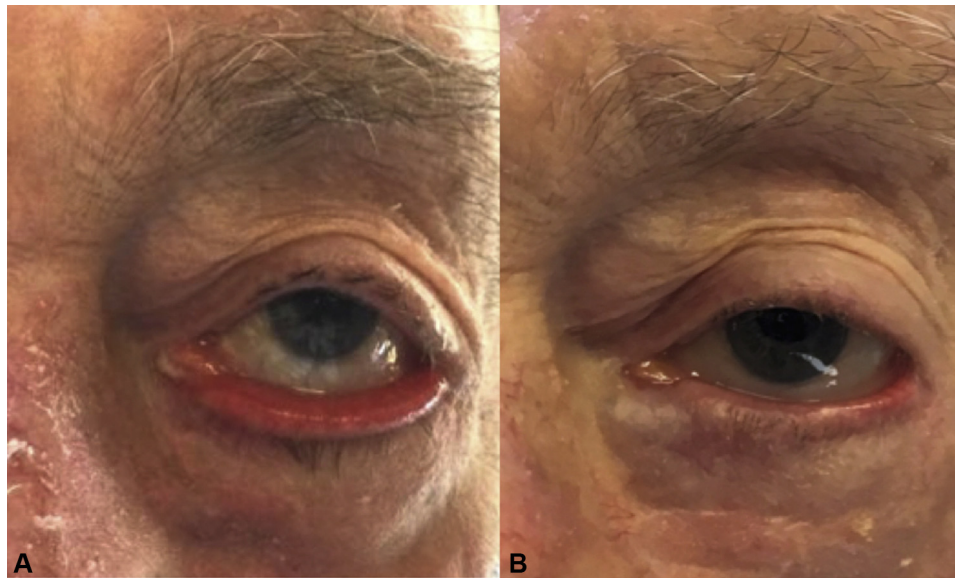


Fig 1. Patient 1 with cicatricial inferior ectropion of the left eye. **A**, Preinjection. **B**, Fifteen months after injection.

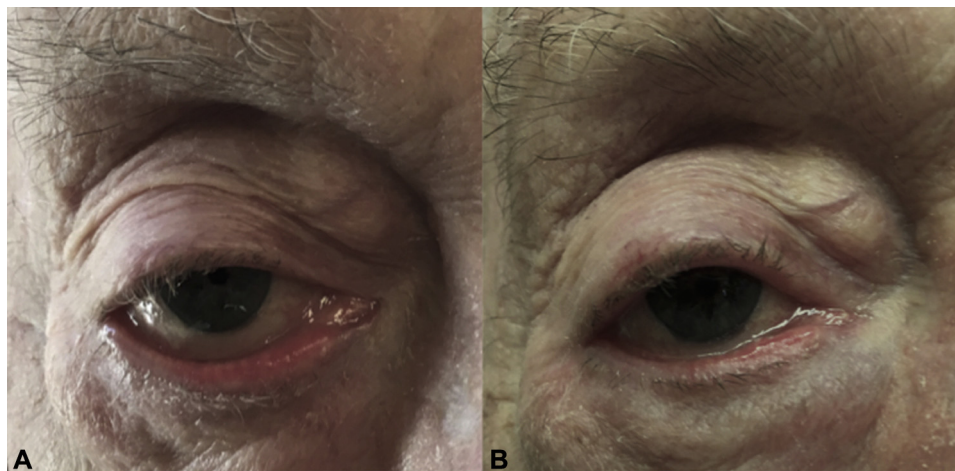


Fig 2. Patient 1 with involucional inferior ectropion of the right eye. **A**, Preinjection. **B**, Three months after injection.

Approximately 1 year after the left eyelid ectropion had resolved, the same patient presented with lower eyelid eversion and ocular inflammation of his right eye (Fig 2, A). There was no evidence of surgical trauma, and an eyelid snap test confirmed the lower right eyelid ectropion was involucional. The right eyelid had not received any previous treatment.

He was treated with 1 mL of HA injected subcutaneously below the ciliary margin above the orbicularis muscular plane into the lateral and medial lower right lower eyelid. Again, the patient was instructed to apply daily digital massage. Two months after the initial injection, the eyelid remained partially everted but not to the extent before

treatment, and a large bleb was still present in the lower eyelid. At this visit, 0.1 mL of hyaluronidase diluted with 0.4 mL of bacteriostatic sodium chloride was injected into the right medial eyelid to dissolve the bleb. This injection was repeated again the following week and then once more 3 weeks later. Three months after initial treatment, there was no significant ectropion or bleb present, and an eyelid snap test displayed improved lid laxity (Fig 2, B). The patient was satisfied with both the cosmetic and functional results of treatment.

Patient 2

Patient 2 was a 90-year-old man who complained of tearing and redness of his left eye and presented



Fig 3. Injection technique. Recommend medial and lateral inferior eyelid injection below the ciliary margin above the orbicularis muscular plane.

with an everted lower punctum. There was no evidence of trauma or scar tissue surrounding the lower lid, and an eyelid snap test confirmed the left eyelid ectropion was involucional. The patient had not received any previous treatment.

He was treated with 0.4 mL of HA injected subcutaneously below the ciliary margin above the orbicularis muscular plane into the left medial inferior eyelid. Two weeks later, patient 2 received another injection of 0.5 mL of HA to the same area and was instructed to apply digital massage until the bleb dissolved. Five weeks after the first injection, the bleb in the eyelid had subsided, and ectropion was significantly improved. The eyelid snap test was repeated and exhibited improved lid laxity. The patient was satisfied with both cosmetic and functional results.

DISCUSSION

This case series details the successful treatment of both cicatricial and involucional ectropion in a dermatologic setting. HA injections are found to be a safe treatment for both congenital and cicatricial eyelid ectropion, while avoiding many of the risks and complications of eyelid surgery.³⁻⁶ Furthermore, unlike complex eyelid surgeries, HA injections can easily be performed in an office setting with little risk or downtime.⁵ HA may even offer a more precise form of treatment because of the reversibility with

the use of hyaluronidase and the ability to treat the ectropion conservatively over time using multiple, small-volume injections.^{3,5,6} Based on our experience, we recommend treatment of ectropions with multiple small dose injections of 0.3 or 0.4 mL of HA 3 to 4 weeks apart followed by daily digital massage until ectropion correction is achieved. We recommend injecting HA into the lateral and medial inferior eyelid below the ciliary margin and above the orbicularis muscular plane. A deeper plane of injection increases the risk of puncturing the globe (Fig 3).

HA injections are often viewed as temporary volumizers and therefore are only a short-term treatment option for eyelid ectropion.⁷ However, research has found that the mechanical stretching caused by HA injections induces fibroblasts to produce new collagen.⁸ We propose that HA injections may offer a relatively long-term correction of eyelid ectropion by dually lifting the eyelid back into a neutral position and mechanically expanding the lid tissue to promote neocollagenesis. Our proposal is supported by this case series, which details successful cicatricial and involucional ectropion correction with therapeutic results lasting more than 1.5 years.

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