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Involitional Entropion

Options for surgical management of entropion

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September 14, 2015

INITIAL PRESENTATION

Chief Complaint: Irritation of the right eye

History of Present Illness

A 67-year-old male presents with irritation and "scratchiness" of the right eye. His symptoms have been present for the past 8 months and have been only partially relieved with artificial tears and lubricating ointment at night. He denies any change in visual acuity, purulent ocular discharge, or photophobia.

Past Ocular History: No ocular surgery or trauma

Past Medical History

- Asthma
- Gastroesophageal reflux (GERD)
- Major depression

Medications

- Bupropion
- Pantoprazole
- Diazepam

Allergies: Penicillin

Family History: No family history of thyroid eye disease or skin cancer

Social History

- Former smoker
- No alcohol use or history of intravenous drug use

Review of Systems: Negative

OCULAR EXAMINATION

Visual Acuity

- Right eye (**OD**) with correction: 20/20-1
- Left eye (**OS**) with correction: 20/20-1

Ocular Motility: Full OD and OS

Intraocular Pressure (IOP):

- **OD:** 12 mm Hg
- **OS:** 11 mm Hg

Pupils: 5 mm in dark → 3 mm in light; brisk reaction to light with no relative afferent pupillary defect (RAPD) OD and OS

Confrontation visual fields: Full to counting fingers OD and OS

Slit lamp exam

OD

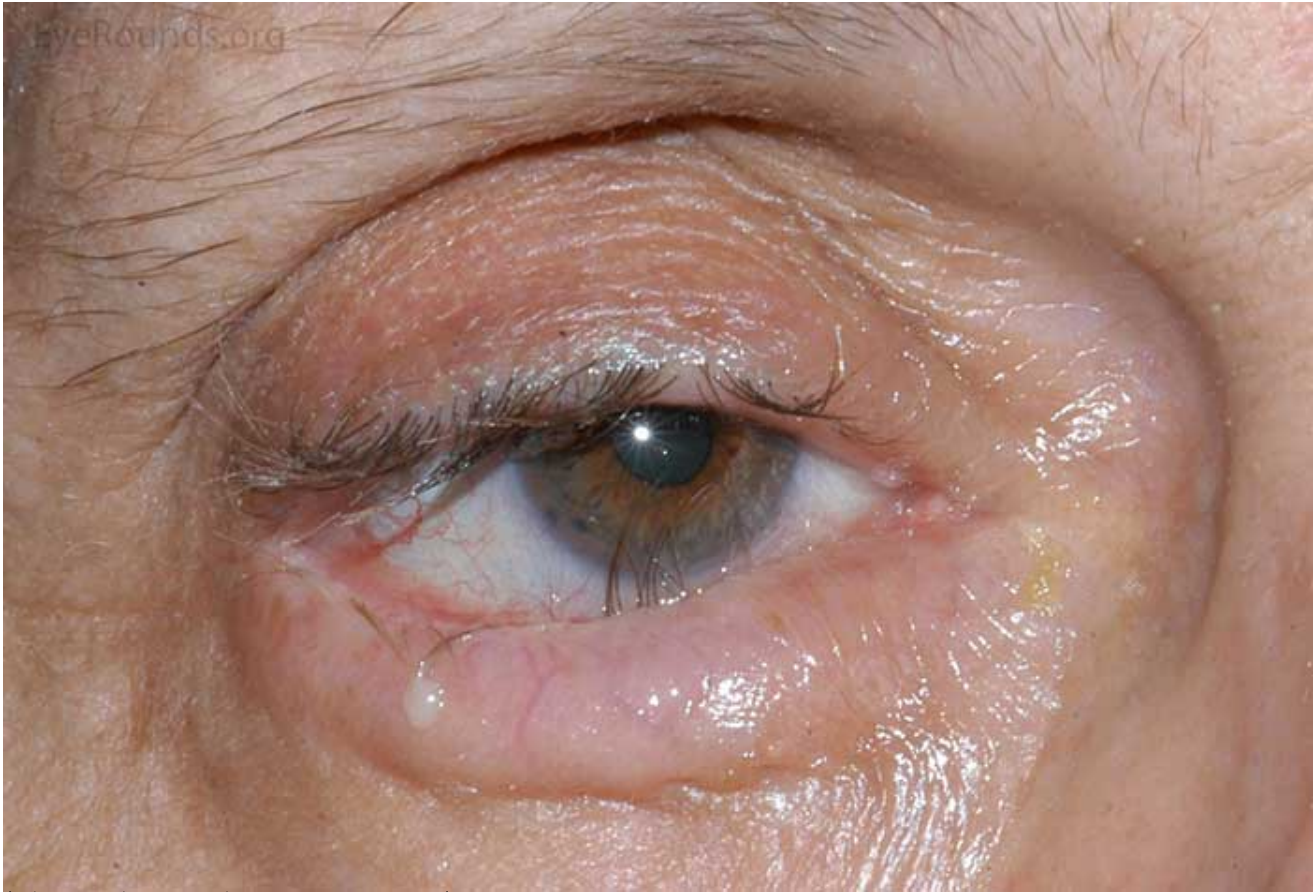
- External: deep superior sulcus
- Eyelid: 1+ meibomian gland dysfunction; blepharitis; increased lower eyelid laxity with positive snap-back test and positive eyelid distraction test; inward rotation of the lower eyelid margin with forceful eyelid closure (able to be manually re-placed in normal anatomical position) [Figure 1]
- Conjunctiva: 1+ diffuse injection
- Cornea: clear and compact; no punctate epithelial erosions or linear epithelial defects
- Anterior chamber: deep and quiet
- Iris: normal architecture
- Lens: 2+ nuclear sclerosis

OS

- External: deep superior sulcus
- Eyelid: 1+ Meibomian gland dysfunction; blepharitis; increased lower eyelid laxity with positive snap-back test, but negative eyelid distraction test; normal eyelid margin alignment with and without forceful eyelid closure
- Conjunctiva: clear and quiet
- Cornea: clear and compact
- Anterior chamber: deep and quiet
- Iris: normal architecture
- Lens: 2+ nuclear sclerosis

Dilated fundus examination (DFE)

- OD: 0.3 cup/disc ratio, normal macula, normal vessels, normal periphery
- OS: 0.3 cup/disc ratio, normal macula, normal vessels, normal periphery



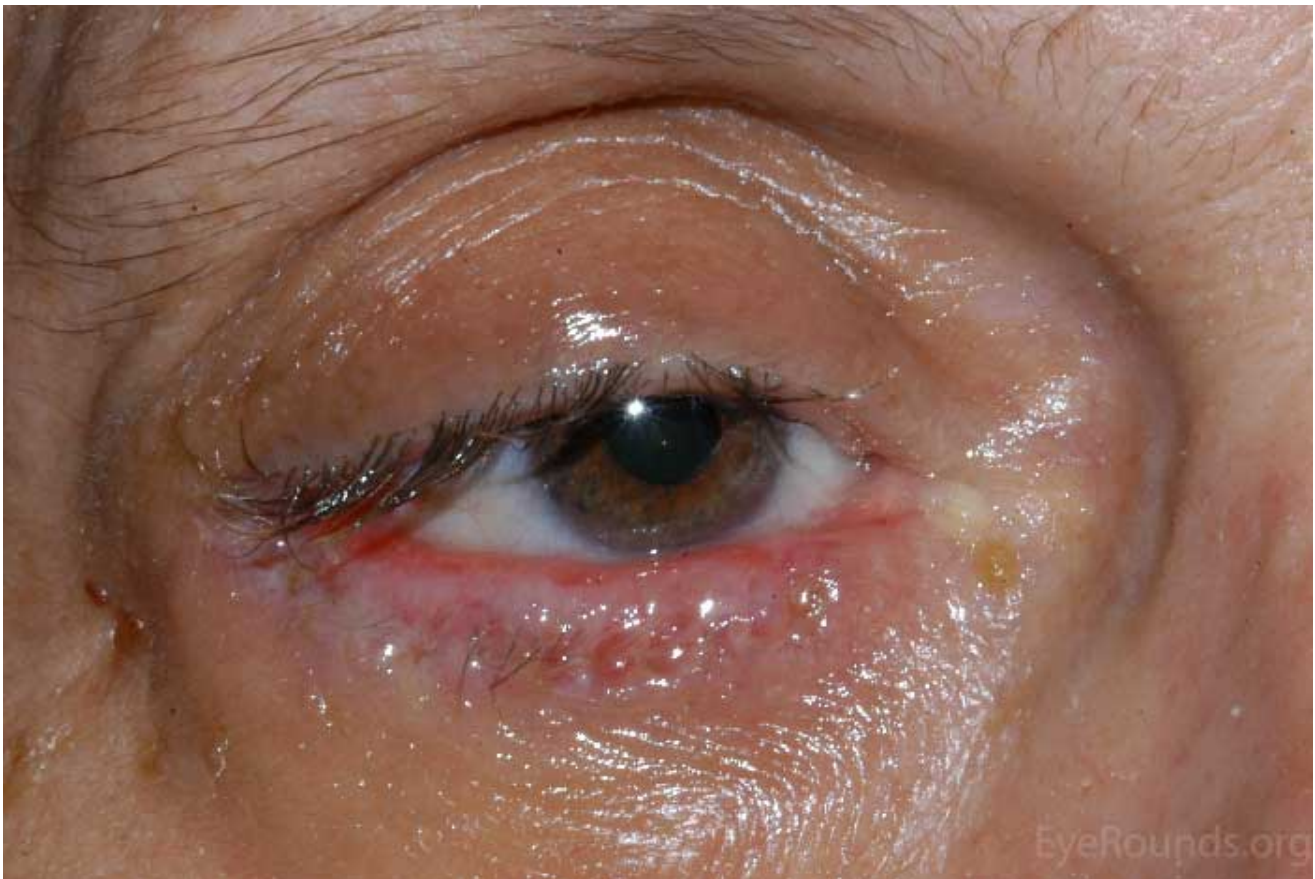
(../cases-i/case220/Entropion-LRG.jpg)

Figure 1: Appearance on presentation—note inward rotation of the lower eyelid margin with misdirected eyelashes abrading the cornea centrally. Also, note the "mounding" of the orbicularis oculi muscle indicative of an over-acting/over-riding muscle and the conjunctival injection

DIAGNOSIS: INVOLUTIONAL ENTROPION

CLINICAL COURSE

The patient underwent surgical repair consisting of lateral tarsal strip and retractor reinsertion procedures. At the one week post-operative visit, the eyelid margin was positioned appropriately, there was mild post-operative edema and erythema of the lower eyelid, and symptoms of ocular surface irritation were markedly improved. [Figure 2]



(../cases-i/case220/figure-2-LRG.jpg)

Figure 2: Appearance at the 1 week post-operative visit—note the improved position of the lower eyelid margin and the resulting rotation of the remaining lateral eyelashes. Of note, some medial eyelashes were excised during the retractor reinsertion (subciliary approach) procedure.

DISCUSSION

Entropion is an eyelid malposition marked by an inward turning of the eyelid margin. Entropion is categorized based on etiology as involucional, cicatricial, or spastic, with involucional being the most common. The symptoms of entropion are related to abrasive contact between the keratinized skin of the inverted eyelid margin (and associated eyelashes) and the corneal and conjunctival surfaces. Additionally, ocular exposure due to lagophthalmos or incomplete blink can contribute. Patients commonly report ocular irritation, discharge, erythema, and tearing. Signs of ocular irritation are frequently seen on examination, including conjunctival injection, papillary conjunctival reaction, and linear or punctate epithelial erosions with frank corneal epitheliopathy and breakdown manifesting in severe cases.

It is important to distinguish entropion from trichiasis as the treatment for these entities differs. Trichiasis is characterized by an inward rotation of the eyelashes in the setting of a normally-positioned eyelid margin, whereas entropion results in an inward rotation of the eyelashes secondary to an inward turning of the eyelid margin. Epiblepharon ([../atlas/pages/epiblepharon/index.htm](#)) is an additional clinical entity that is occasionally confused with entropion. In epiblepharon, a condition most commonly seen in Asian and Native American children, the lower eyelid lashes assume a vertical orientation in the setting of a redundant superior band of orbicularis oculi muscle along the inferonasal portion of the lower eyelid. The posterior eyelid margin itself is in the normal anatomic alignment.

In order to better appreciate the mechanisms behind lower eyelid malposition and the treatments utilized in their correction, an understanding of the relevant anatomy is of benefit. The eyelids can be sub-divided into anterior, posterior, and middle lamellae. In the lower eyelid, above the inferior border of the tarsus, the anterior lamella consists of the skin (including the eyelashes) and orbicularis oculi muscle, whereas the posterior lamella consists of the conjunctiva and tarsus. Inferior to the tarsus, the anterior lamella continues as the skin and orbicularis oculi muscle, the posterior lamella continues as the conjunctiva, and a third lamellae (the "middle" lamella) emerges. The middle lamella consists of the lower eyelid retractors, orbital septum, and lower eyelid fat pads (medial, central, and lateral). When any of these lamellae become shortened or dissociated, eyelid malposition can occur.

Involitional entropion

Involitional entropion ([../atlas/pages/senile-involitional-entropion.html](#)) has classically been attributed to the triad of horizontal lower eyelid laxity, dehiscence of the lower eyelid retractors, and an over-riding orbicularis oculi muscle (1,2). Age-related enophthalmos has also been proposed as an etiologic factor although this association has been debated in the literature (3). Additionally, a decreased vertical height of the tarsus has been postulated to be a causal factor in the development of involitional entropion (4).

Horizontal eyelid laxity is caused by age-related stretching of the lateral canthal tendon, with or without involvement of the medial canthal tendon. Horizontal eyelid laxity can be detected by a positive distraction test and/or snap back test. To conduct the eyelid distraction test, the lower eyelid is displaced anteriorly from the globe. An eyelid with normal laxity will not distract more than 8 mm from the globe (5). The snap-back test is performed by displacing the lower eyelid inferiorly. A normal tension eyelid will immediately snap back to place, whereas an eyelid with increased laxity may require one or more blinks before the eyelid resumes its normal appositional location against the globe. Medial canthal tendon laxity can be detected by manual displacement of the inferior punctum laterally. A medial canthal tendon with normal laxity will not permit displacement of the punctum beyond the medial limbus. Disinsertion of the lower eyelid retractors from the inferior border of the tarsus results in vertical laxity, which allows the inferior border of the tarsus to displace anteriorly with a concomitant posterior displacement of the superior tarsus and inward rotation of the lower eyelid margin. Occasionally, a white line of "disinserted" lower eyelid retractors can be viewed through the palpebral conjunctiva. In some patients, the pre-tarsal orbicularis oculi muscle can be seen to roll upward, displacing the eyelid margin against the globe with blinking or forceful eyelid closure. The over-riding of the orbicularis oculi results from a relative imbalance between the strength of the contracting orbicularis oculi muscle and the stability of the tarsus, which depends upon appropriate horizontal tightness and lower eyelid retractor function.

Correction of involitional entropion is aimed at addressing the underlying factors responsible for the eyelid malposition (i.e. horizontal eyelid laxity, retractor disinsertion, over-riding orbicularis oculi muscle). The following procedures are described in more detail and accompanied by videos later in this article. Most frequently, a lateral tarsal strip procedure is utilized to address horizontal eyelid laxity (6). Horizontal eyelid tightening can also be achieved with a pentagonal wedge resection of the lateral lower eyelid (7). The most commonly utilized techniques to address retractor disinsertion and orbicularis oculi overaction are the retractor reinsertion procedure and rotational fornix-based, a.k.a. "Quickert", sutures (8,9). The retractor reinsertion procedure directly reattaches the disinserted lower eyelid retractors, and when a subciliary incision is utilized, the post-operative scarring/traction exerts a downward force which counteracts the over-riding pre-tarsal orbicularis oculi muscle (10). A subciliary approach also spares the conjunctiva, reducing the risk of post-operative scarring and shortening of the posterior lamella. Rotational fornix-based sutures, which are placed deep in the fornix, pass full-thickness through the eyelid, and emerge just inferior to the eyelashes, engaging and advancing the disinserted lower eyelid retractors in addition to rotating the over-riding orbicularis oculi muscle back into its normal anatomic position (10). The retractor reinsertion procedure has been criticized for its increased technical difficulty, time requirement, and potential risk of secondary ectropion and retraction, but it provides a direct view of the pathologic tissues and allows for removal of pre-tarsal orbicularis muscle and

redundant skin (10). Multiple other procedures, and combinations thereof, have been described and continued debate regarding the optimal pairing of techniques exists (2). However, it has been shown that a combination of procedures that addresses all three underlying etiologic factors results in lower recurrence rates than techniques that address only one or two of the three (2,10).

For patients with severe symptoms, temporizing measures can be of benefit while awaiting surgical intervention. Botulinum toxin injected into the over-riding orbicularis oculi muscle has been used to provide transient relief (11). In addition, placing a ½ inch wide strip of paper tape such that it engages the lateral skin of the lateral lower eyelid and exerts downward tension can temporarily realign the lower eyelid margin and help mitigate symptoms. A bandage contact lens is also a viable short-term option for symptom mitigation.

Spastic entropion

Spastic entropion occurs when forceful eyelid closure results in inward rotation of the eyelid margin. The impetus for the forceful eyelid closure is commonly ocular irritation and/or inflammation, which in turn is exacerbated by the entropion, leading to a vicious cycle. Successful treatment of the source of ocular irritation would theoretically eliminate the entropion, but in reality this is infrequently achieved. There is thought that spastic entropion occurs in eyelids that are predisposed to malposition due to increased eyelid laxity. Thus, surgical intervention is typically targeted at stabilization of the lower eyelid through tightening procedures, such as those used in the treatment of involutional entropion. Of note, "Quickert" sutures are of particular utility in the treatment of spastic entropion, especially in poor surgical candidates unable to undergo more extensive procedures, although the recurrence rate of entropion is substantially higher if horizontal eyelid laxity and the over-riding orbicularis oculi muscle are not addressed. Additionally, this particular subset of patients also derives benefit from the use of temporizing measures such as eyelid taping and botulinum toxin injection.

Cicatricial entropion

Cicatricial entropion is caused by shortening of the posterior lamella. This is most commonly a result of conjunctival scarring. Once the diagnosis of cicatricial entropion is made, the underlying etiology should be determined. Frequent causes include: trauma, chemical burns, surgery, ocular cicatricial pemphigoid ([../atlas/pages/ocular-pemphigoid.html](#)), Stevens-Johnson syndrome, recurrent chalazia or blepharitis, and post-infectious (e.g. trachoma ([../atlas/pages/trachoma.html](#))).

In some patients, differentiating between cicatricial and involutional entropion is difficult. A helpful examination technique is to attempt to manually place the lower eyelid in its normal anatomic position. In the case of cicatricial entropion, this will not be able to be performed, whereas in involutional entropion a normal anatomic position will be attainable.

A subtle form of cicatricial entropion, termed "marginal" entropion, is characterized by a rounding of the posterior eyelid margin and anterior migration of the mucocutaneous junction. Marginal entropion is typically a result of long-standing posterior blepharitis.

Treatment of cicatricial entropion is based on lengthening of the posterior lamella, in addition to correcting other underlying factors (e.g. horizontal eyelid laxity). The procedure selected is based on the amount of lengthening required. For mild to moderate cases (including marginal entropion), a tarsotomy procedure with everting sutures (with or without a lateral tarsal strip procedure) works well. For moderate to severe cases, an anterior lamellar recession is often utilized (12-14). This procedure shortens the anterior lamella without altering the posterior lamella, which may be advantageous in cases where the surgeon wishes to avoid stimulating additional conjunctival scarring (e.g. in ocular cicatricial pemphigoid). Of note, by recessing the anterior lamella, some eyelid retraction is caused. For the most severe cases, mucous membrane grafting is performed following lysis of the scarred conjunctiva. Multiple potential donor sites (e.g. buccal mucosa, lower labial mucosa, nasal mucosa, etc.) are available, each with inherent advantages and disadvantages. Other materials such as amniotic

SYMPTOMS

- Ocular irritation
- Foreign body sensation
- Ocular injection
- Tearing or Epiphora
- Photophobia
- Decreased vision

TREATMENT

- Lateral tarsal strip
- Pentagonal wedge resection
- Retractor reinsertion
- Everting or "Quickert" sutures
- Anterior lamellar recession
- Lower eyelid tarsotomy
- Mucous membrane grafting

REFERENCES

1. Nerad JA: The Diagnosis and Treatment of Entropion. In *Techniques in Ophthalmic Plastic Surgery—a personal tutorial*, pp. 99-112. Saunders Elsevier, 2010.
 2. Marcet MM, Phelps PO, Lai JS. Involitional entropion: risk factors and surgical remedies. *Curr Opin Ophthalmol.* 2015; 26: 416-421.
 3. Jones LT. The anatomy of the lower eyelid and its relation to the cause and cure of entropion. *Am J Ophthalmol.* 1960; 49: 29-36.
 4. Bashour M, Harvey J. Causes of involitional ectropion and entropion--age-related tarsal changes are the key. *Ophthalm Plast Reconstr Surg.* 2000; 16: 131-141.
 5. Olver JM, Barnes JA. Effective small-incision surgery for involitional lower eyelid entropion. *Ophthalmology.* 2000; 107: 1982-1988.
 6. Jordan DR, Anderson RL. The lateral tarsal strip revisited. The enhanced tarsal strip. *Arch Ophthalmol.* 1989; 107: 604-606.
 7. Asamura S, Chichikawa K, Nishiwaki H, et al. Why does the corrective procedure of the ectropion work for repairing the entropion? *J Craniofac Surg.* 2012; 23: 1133-1136.
 8. Jones LT, Reeh MJ, Wobig JL. Senile entropion: a new concept for correction. *Am J Ophthalmol.* 1972; 74: 327-329.
 9. Quickert MH, Rathbun E. Suture repair of entropion. *Arch Ophthalmol.* 1971; 85: 304-305.
 10. Rougraff PM, Tse DT, Johnson TE, Feuer W. Involitional entropion repair with fornix sutures and lateral tarsal strip procedure. *Ophthalm Plast Reconstr Surg.* 2001; 17: 281-287.
 11. Steel DH, Hoh HB, Harrad RA, Collins CR. Botulinum toxin for the temporary treatment of involitional lower lid entropion: a clinical and morphological study. *Eye (Lond).* 199; 11: 472-475.
 12. Kersten RC, Kleiner FP, Kulwin DR. Tarsotomy for the treatment of cicatricial entropion with trichiasis. *Arch Ophthalmol.* 1992; 110: 714-717.
 13. Van Millingen E. The tarsocheiloplastic operation for the cure of trichiasis. *Ophthalmol Rev.* 1887; 6: 309-314.
 14. Sodhi PK, Yadava U, Mehta DK. Efficacy of lamellar division for correcting cicatricial lid entropion and its associated features unrectified by the tarsal fracture technique. *Orbit.* 2002; 21: 9-17.
 15. Koreen IV, Taich A, Elnor VM. Anterior lamellar recession with buccal mucous membrane grafting for cicatricial entropion. *Ophthalm Plast Reconstr Surg.* 2009; 25: 180-184.
- **RELATED ARTICLE:** Involitional ectropion: options for surgical management of ectropion (218-ectropion.htm).

Suggested Citation Format

membrane, tarsus, hard palate grafts, and synthetic materials such as ENDURAGen® can also be utilized. Similar to the surgical treatment of involutional entropion, combinations of procedures are frequently utilized in the management of cicatricial entropion with treatment aimed at correcting all underlying etiologic factors (15).

Procedures

-Performed and narrated by Dr. Richard C Allen

Lateral Tarsal Strip

- Transcript (<http://www.eyerounds.org/video/plastics/1/lateral-tarsal-strip.htm>)

If video fails to load, use this link: [h \(https://vimeo.com/123354779\)](https://vimeo.com/123354779)<http://vimeo.com/123354779>
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02:24



- A lateral canthotomy is performed with either the needle tip cautery or a 15 blade.
- An inferior cantholysis is then performed with either the needle tip cautery or scissors.
- Dissection is carried out between the anterior and posterior lamellae for approximately 5 to 10 mm, depending on the laxity of the eyelid.
- The mucocutaneous junction is excised along the length of the strip with Westcott scissors.
- The posterior surface of the strip is scraped with a 15 blade to denude any epithelium.
- The strip is grasped and placed into position along the lateral orbital rim to determine the appropriate amount of resection (typically 3-5mm, depending on the laxity of the eyelid), which is performed with Westcott scissors.
- A double arm 4-0 Mersilene suture on an S-2 needle is placed so that each arm exits the anterior surface of the strip.
- The needle (a half circle needle, which works well in small spaces) is passed through the periosteum overlying the zygomatic bone slightly posterior to the lateral orbital rim at the level of Whitnall's tubercle, which is at least 2 mm superior to the medial canthus.
- The periosteal bite is confirmed by elevating the sutures.

Clark TJE, Lenci LT, Allen RC, Shriver EM. Involitional entropion: options for surgical management of entropion. EyeRounds.org. posted Sept 14, 2015; Available from: <http://www.EyeRounds.org/cases/220-Involitional-entropion.htm> (<http://www.eyerounds.org/cases/220-Involitional-entropion.htm>)

last updated: 09/14/2015

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- The second needle is placed in the same manner.
- The sutures are tied.
- The redundant anterior lamella (including the lash follicles) are excised.
- The anterior lamella is sutured to the tarsal strip medial to the lateral orbital rim with a single 5-0 fast-absorbing suture.
- Additional sutures are placed lateral to the lateral orbital rim to repair the canthotomy.
- Antibiotic ointment is placed over the incision.

*Note: this patient also had a medial spindle procedure performed.

Transcutaneous Retractor Reinsertion with Lateral Tarsal Strip

- Transcript (<http://www.eyerounds.org/video/plastics/1/transcutaneous-entropion.htm>)

If video fails to load, use this link (<https://vimeo.com/123337245>)

- A 4-0 Silk traction suture is placed through the eyelid margin.
- The monopolar cautery is used to make a subciliary incision extending from the punctum medially to the lateral canthus laterally.
- Dissection is performed between the orbicularis oculi muscle and the orbital septum inferiorly to the inferior orbital rim.
- The orbital septum is opened and the central lower eyelid fat pad is dissected from the underlying lower eyelid retractors.
- The lower eyelid retractors are dissected from the underlying conjunctiva with the monopolar cautery. (Note: the conjunctiva is very thin, as demonstrated here)
- The lower eyelid retractors are sutured to the inferior border of the tarsus with three 5-0 Vicryl sutures. (Note: this step effectively shortens the lower eyelid retractors)
- A lateral cantholysis is performed.
- The remaining lateral 5 mm of anterior lamella is excised.
- The mucocutaneous junction is excised and the posterior surface of the tarsus is scraped with a #15 blade. (Note: this step removes the conjunctival epithelium)

- The strip is shortened and sutured to the lateral orbital rim at the level of Whitnall's tubercle with a double armed 4-0 Mersilene suture on an S-2 needle.
 - The lateral cantholysis is repaired with interrupted 5-0 fast-absorbing suture.
 - The subciliary incision is closed with a running 5-0 fast-absorbing suture.
 - Antibiotic ointment is placed over the incision and the traction suture is released.
-

Everting or "Quickert" Sutures

- Transcript (<http://www.eyerounds.org/video/plastics/1/Quickert-Sutures.htm>)

If video fails to load, use this link (<https://vimeo.com/123336138>)

- A double armed 5-0 Vicryl suture on an S-24 needle is most commonly utilized. (Note: a double armed 5-0 chromic suture that is on a longer needle is an acceptable alternative)
 - The suture enters the inferior fornix through the conjunctiva and is directed through the eyelid to exit externally at the lash follicles. (Note: this effectively tightens the lower eyelid retractors)
 - The second arm of the suture is directed in a similar fashion. (Note: in order to achieve maximal eversion, the suture should enter relatively deep in the fornix and exit as close to the lash follicles as possible)
 - Two additional double-armed sutures are placed and tied. (Note: there should be eversion of the eyelid margin at the conclusion of the case)
 - The sutures are left to dissolve on their own or are removed at approximately 7 to 10 days.
-

Anterior Lamellar Recession

- Transcript (<http://www.eyerounds.org/video/plastics/2/Anterior-lamellar-recession-LL.htm>)

If video fails to load, use this link: <https://vimeo.com/132969590/> (<https://vimeo.com/132969590/>).

- A #15 blade is used to make an incision along the eyelid margin at the gray line to separate the anterior and posterior lamella along the area of the entropion.
- Westcott scissors are used to further separate the pretarsal orbicularis oculi muscle from the anterior surface of the tarsus.
- The superior 1-2 mm of anterior lamella (including the eyelashes) is excised. (Note: the eyelashes can be retained, if desired, but are typically not missed following the recession)
- The anterior lamella is recessed approximately 1-2mm with a 6-0 Vicryl suture placed in a horizontal mattress fashion entering the anterior lamella 1mm inferior to the skin edge, passing through the tarsus in a lamella fashion 2-3mm inferior to the superior edge of the tarsus, and exiting the anterior lamella 1mm inferior to the skin edge. (Note: three or four sutures are typically required)
- Antibiotic ointment is placed over the wound and the superior defect along the posterior lamella is allowed to heal by granulation.

Lower Eyelid Tarsotomy

- Transcript (<http://www.eyerounds.org/video/plastics/1/Lower-eyelid-tarsotomy.htm>)

If video fails to load, use this link: <https://vimeo.com/123338538> (<https://vimeo.com/123338538>)

- A 4-0 silk traction suture is placed and the eyelid is everted over a shoe-horn speculum.
- A #15 blade is used to make an incision through the tarsus approximately 2-3 mm inferior to the superior border of the tarsus, extending for the entire length of the area of the entropion.
- Westcott scissors are used to complete the incision through the tarsus to the level of the pretarsal orbicularis muscle.
- The traction suture is removed.
- A double-armed 5-0 Vicryl suture on an S-24 needle is placed through the inferior cut end of the tarsus.
- Each arm of the suture is advanced full thickness through the eyelid to exit at the level of the lash follicles.
- The suture is tied and cut. (Note: the suture is now a single armed suture as we are using the same suture)
- The needle is placed at the lash follicles and passed through the eyelid to exit at the tarsal incision.
- The needle engages the cut end of the tarsus and is then turned around and placed full thickness through the eyelid to exit at the lash follicles.
- The suture is again tied and cut. (Note: approximately 3-6 sutures can be placed in order to evert the eyelid margin)
- A bandage contact lens may be placed in the eye. (Note: this serves to mitigate ocular surface irritation from the cut edge of the tarsus)

SUMMARY

Entropion is a commonly encountered ophthalmologic problem and is categorized as involuntional, spastic, or cicatricial. There are multiple surgical options available for the repair of entropion and procedure selection and combination is based on the type and severity of entropion.

ETIOLOGY

- Horizontal laxity of the lower eyelid
- Disinsertion of the lower eyelid retractors
- Over-riding orbicularis oculi muscle
- Enophthalmos
- Decreased vertical height of the tarsus

SIGNS

- Inward turning of the eyelid margin (at baseline or with blinking or forceful eyelid closure)
- Conjunctival irritation
- Corneal epitheliopathy
- Poor snap-back test (1 or more blinks)
- Poor distraction test (>8 mm)
- Over-riding orbicularis oculi muscle
- "White line" of disinserted lower eyelid retractors visible through the palpebral conjunctiva
- Blepharospasm
- Conjunctival scarring