JONES PROCEDURE FOR SENILE ENTROPION

ABSTRACT: Atrophied lid retractors, involutional enophthalmos, an overriding preseptal orbicularis, and increased horizontal lid laxity all contribute to involutional (senile) entropion, which is an inward rotation of the eyelid edge. Persistent entropion and trichiasis ultimately result in chronic irritation of the cornea and conjunctiva, impairing the optical function of the ocular surface. Usually utilized in preoperative treatment or when surgical intervention is not practical, conservative types of therapy only offer a short-term fix. By outlining their indication, methodology, and salient features, the study seeks to evaluate the benefits of a few common methods (Jones' Procedure) for the repair of lower lid entropion.

INTRODUCTION:

Senile entropion, also known as involutional entropion, is the most common form of entropion affecting the lower eyelid in the elderly population. It is characterized by an inward turning of the eyelid margin, which causes the eyelashes to be misdirected toward the ocular surface. If left untreated, this condition can lead to corneal ulceration, excessive tearing, conjunctival inflammation, ocular irritation, and a persistent foreign body sensation.

The underlying pathophysiology of senile entropion is complex and primarily attributed to age-related changes in the structural integrity of the eyelid. Key contributing factors include horizontal lid laxity, attenuation or dehiscence of the lower eyelid retractors, override of the pretarsal orbicularis muscle by the preseptal portion and enophthalmos due to orbital fat atrophy.

An accurate understanding of these anatomical and physiological alterations is essential for selecting the most appropriate surgical or conservative treatment. With a globally aging population, involutional eyelid malpositions such as entropion are expected to become increasingly prevalent, emphasizing the need for early diagnosis and timely management.

MATERIALS AND METHODS:

A Prospective interventional study approved by the ethics committee was carried out in the department of ophthalmology of Maharani Laxmibai Medical college Jhansi, from January 2024 to october 2024. A sum total of 44 patients between age of 50 to 80 years were diagnosed with senile entropion and were treated with jones procedure. The follow-up after surgery continued for at least 6 months. Out of this 44 cases 2 of them lost follow up and were removed from the study.

Inclusion criteria:

- Patients aged 50-80 years
- Only primary cases with no previous eyelid surgery.
- Patients diagnosed with involutional (senile)lower eyelid entropion
- Patients who provided informed consent for the procedure(jones procedure)

Exclusion Criteria:

- Patients who did not follow up postoperatively.
- Patients with other forms of entropion (cicatricial, congenital, or upper eyelid entropion).
- Patients unwilling to undergo surgical correction.
- Patients without signs of lower lid laxity on clinical examination (no deep inferior fornix, no downward displacement in primary gaze, or inadequate lid movement on downgaze).

PROCEDURE:

Consent and Preparation:

Written and informed consent was obtained from all patients. The procedure was carried out under strict aseptic precautions.

Anesthesia:

Local infiltration was done using 2% lignocaine with 1:200,000 adrenaline. Injection was administered via skin pinch technique over the lower eyelid.

Figure 1- Showing pre-op picture of Right eye with inward turning of lower lid

Skin Incision:

A horizontal skin incision was made approximately 5 mm below the lash line. The incision extended from lateral to medial, ending at the junction of the medial 1/3rd and lateral 2/3rd of the lid.

Muscle Exposure:

The orbicularis oculi muscle under the skin was exposed. A skin-muscle flap was elevated carefully.

Identification of Retractors:

The pre-aponeurotic fat was retracted inferiorly. This allowed for identification of the lower eyelid retractors (Capsulopalpebral fascia).

Suture Placement:

A 4-0 silk suture was passed sequentially through Skin, Lower orbicularis muscle, Inferior lid retractors, Superior orbicularis muscle, then back through the upper skin edge of the incision, tension of the suture was adjusted to prevent overcorrection or undercorrection.

Reinforcement:

Additional similar sutures were placed medial and lateral to the central suture.

Wound Closure:

After ensuring hemostasis, the skin was closed using the same 4-0 silk sutures. Sutures were removed after 14 days under aseptic precautions.

Figure 2- Showing post-operative pictures of lower lid entropion correction after Jones Procedure

Postoperative Follow-up:

Patients were assessed at 48 hours post-operatively, at 2 weeks (for suture removal) then monthly follow-ups up to 6 months

Parameters assessed included: Palpebral fissure height, symmetry with the contralateral lid, Condition of the suture sites

RESULTS:

Table 1- Age Distribution

	Male	Female
50-60	4	2
61-70	11	13
71-80	7	5
Total	22	20

Throughout the intraoperative phase, no complications were encountered, indicating that the surgical technique was safe and well-tolerated. In the postoperative period, only one patient developed a mild wound infection. This case was attributed to suboptimal eyelid hygiene and was managed effectively with topical and oral antibiotics, leading to complete resolution. Importantly, there were no reported instances of overcorrection or undercorrection among the study participants, suggesting that the suture tension and anatomical repositioning were appropriately balanced in each case. Additionally, no recurrences of entropion were noted during the follow-up period, further reinforcing the efficacy and reliability of the Jones procedure as a definitive surgical intervention for involutional lower eyelid entropion.

DISCUSSION:

Involutional entropion is among the most frequently observed eyelid malpositions, particularly in the elderly. Its pathogenesis is multifactorial, involving several anatomical changes associated with aging. These include:

(a) Horizontal eyelid laxity, resulting from the stretching of the canthal tendons and/or weakening of the tarsal plate;

(b) Vertical laxity, due to attenuation, disinsertion, or dehiscence of the lower eyelid retractors and/or the orbital septum;

(c) Override of the pretarsal orbicularis by the preseptal orbicularis muscle; and

(d) Appositional pressure between the eyelids during closure.

While a range of nonsurgical treatments such as adhesive skin tapes, botulinum toxin injections, and tissue adhesives have been suggested for temporary symptom relief, these interventions do not offer lasting correction. Therefore, surgical management remains the only definitive and effective treatment option.

The Jones procedure addresses the condition by plicating the lower eyelid retractors, thereby tightening the capsulopalpebral fascia and restoring vertical lid support. Everting sutures are used to reposition the retractor complex anteriorly to the tarsal plate, enhancing vertical traction and simultaneously forming a barrier that prevents the superior migration of the preseptal orbicularis muscle. The long-term success of the surgery relies on the formation of fibrous scar tissue along the paths of the sutures.

In a study by Seiff et al., a robust fibrotic and inflammatory tissue response was observed in the lower eyelid within two weeks of placing everting sutures, contributing to the durability of the surgical outcome. Notably, no recurrences were reported in patients who underwent the Jones procedure. Additionally, factors such as the patient's age or sex had no significant impact on the final surgical outcome.

CONCLUSION:

The Jones procedure has proven to be a safe, effective, and cost-efficient surgical option for managing senile lower eyelid entropion. It involves minimal dissection through small skin incisions, resulting in reduced operative time and faster recovery. The technique is relatively simple to learn, making it accessible even to early-career oculoplastic surgeons. In our study, the procedure was associated with no intraoperative complications, and the risk of recurrence was negligible, underscoring its long-term reliability. Moreover, patients benefited from favourable cosmetic outcomes, as the incisions are strategically placed and heal well with minimal scarring. The combination of functional correction and aesthetic preservation makes the Jones procedure an excellent choice for both patients and surgeons.

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