



Characteristics of Entropion Patients at Dr. Mohammad Hoesin General Hospital: A Descriptive Study

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ABSTRACT

Introduction: The eyelids or lids have the function of protecting the eyeball and secrete glandular secretions that form a tear film in front of the cornea. This study aimed to assess the characteristics of patients with entropion.

Methods: This research is a retrospective study approach. Data was obtained from Dr. Mohammad Hoesin General Hospital, Palembang, from January 2019 to December 2021. Medical record data included in this study were patients diagnosed with ptosis, entropion, and ectropion patients. The exclusion criteria were patients with missing medical records and any other palpebra abnormalities. The necessary variables were analyzed descriptively by calculating the prevalence and looking at the patient characteristics of entropion. **Results:** Most age in patients with entropion are those with age >60 years, which is as much as 66.67% of patients. The most affected eyes were the left eye and both eyes (44.44%) and the superior eyelid (66.67%). In this study, the most common type of entropion was the cicatricial type which was found in 5 patients (55.56%). No spastic and congenital entropion was found in this study. **Conclusion:** The most common age are those with age >60 years. The cicatricial type was the most common type in patients with entropion at Dr. Mohammad Hoesin General Hospital.

1. Introduction

The eyelids are thin folds of skin, muscle, and fibrous tissue that protect the eye's fragile structures. The eyelids or lids have the function of protecting the eyeball and secrete glandular secretions that form a tear film in front of the cornea. In this study, the eyelid abnormalities that will be discussed is entropion. Entropion is a palpebral disorder in which there is a folding of the lid margin towards the inside of the eyeball. Entropion can cause the eyelashes, eyelid margins, and skin on the eyelids to come into contact with the eyeball. Continuous friction against the cornea can give symptoms of irritation in the form of eye discomfort and epiphora.¹⁻³

If entropion persists, then entropion can cause complications such as microbial keratitis, corneal ulceration, pannus formation, and loss of vision.⁴ Entropion is classified into four types, namely congenital entropion, cicatricial entropion, spastic entropion, and senile or involutional entropion. These four types are distinguished by their causes and mechanisms.⁵⁻⁷ The most common type in the lower eyelids is involutional, while in the upper eyelid, it is cicatricial. Some common risk factors include prior burns, trauma, infection, and inflammation. Cicatricial entropion results from a scarring process that causes the tarsus and conjunctiva to shrink.

Considerable force is required to pull the tarsal plate inward. Common causes include chemical burns, trachoma, chronic eyelid infections, trauma, and conjunctival shrinkage diseases, such as cicatricial pemphigoid or Stevens-Johnson syndrome. Unlike involutinal entropion, correction of cicatricial entropion requires an incision of some scar tissue. Cicatricial forces are redirected by sutures or placement of grafts such as a mucous membrane or hard palate. The surgeon must decide whether the entropion is severe enough to require the placement of a graft.⁸⁻¹⁰ This present study aimed to describe the characteristics of patients with entropion.

2. Methods

This research was an observational study. The data was obtained from the medical record of an eye polyclinic patient at Dr. Mohammad Hoesin General Hospital, Palembang. Participants in the study were data on all patients who were treated at the Eye Polyclinic of Dr. Mohammad Hoesin General Hospital, Palembang, from January 2019 to December 2021. This research has received approval from the ethical committee of Dr. Mohammad Hoesin General Hospital, Palembang. The variables analyzed descriptively are sociodemographic factors and entropion

characteristics. The data obtained is then presented in a narrative manner.

3. Results

The results of data collection obtained as many as 9 patient statuses diagnosed with entropion. Most of the entropion patients were male (66.67%) and over 60 years old (66.67%). The age range of entropion patients at Polycyclic Eye of Dr. Mohammad Hoesin General Hospital, Palembang, is 2-90 years (Table 1). Based on the theory, it is known that there are several types of entropion associated with a certain age.

Based on the location of the entropion, most entropion was present in the superior eyelid (66.67%), the left eye (44.44%), and the bilateral or both eyes (44.44%). Based on the type of entropion, there were 6 patients with involutinal entropion (44.44%) and 5 patients (55.56%) with cicatricial entropion. No congenital or spastic entropion was found in this study (Table 1). Of the 5 patients with cicatricial entropion, all patients were corrected with the anterior lamellar reposition technique. While 4 patients with involutinal entropion, 3 were corrected using the Quickert procedure, and 1 patient was corrected by the Bick procedure.

Table 1. Characteristics of entropion patients.

Characteristic	Total (%)
Gender	
Male	6 (66.67)
Female	3 (33.33)
Age (years old)	
≤ 20	1 (11.11)
21-40	0 (0)
41-60	2 (22.22)
>60	6 (66.67)
Affected eyelids	
Superior	6 (66.67)
Inferior	3 (33.33)
Affected eye	
Right unilateral	1 (11.11)
Left unilateral	4 (44.44)
Bilateral	4 (44.44)
Entropion type	
Congenital	0 (0)
Cicatricial	5 (55.56)
Spastic	0 (0)
Involutinal	4 (44.44)

4. Discussion

Entropion is more common in women than men because of the smaller size of the tarsal plate in women.⁸ But, the results of this study showed a different thing from previous studies that entropion was more often found in men, namely as many as 6 patients (66.67%). The results of this study are similar to the previous theory that involutional entropion is more common, and the most affected patients are patients aged >60 years.⁸ The older a person is, the more likely they are to develop entropion. Involutional entropion is caused by degenerative changes in the eyelid structures in old age. Degenerative changes that occur, such as thinning of the tarsal plate, weakness of the orbicularis oculi and retractor muscles, and thinning of the orbital septum, these changes are more common in people over 60 years of age.^{9,10}

A person is more likely to have entropion the older he gets. This is caused by the weakening of the muscles and tendons. Any mechanism that results in increased scar tissue formation can put a person at risk for entropion formation. Some common risk factors include previous burns, trauma, infection, or inflammation. Entropion is thought to be more common in women because women tend to have smaller tarsal plates than men.^{11,12} However, in this study, more men were found than women. This may be due to the limited number of samples.

The tarsus is composed of collagen and elastic fibers with meibomian glands. Collagen fibers are a source of tensile strength, whereas elastic fibers provide matrix resilience. Degeneration and fragmentation of collagen and elastic fibers with a reduction in the number of meibomian glands occur in the tarsus with age, leading to excessive horizontal weakness of the lower eyelid and atrophic changes (thinning and shortening) in the tarsus. The vertical length of the lower tarsus decreases with age by about 50% (5.28 mm for those younger than 50 years; 2.3 mm on average for those older than 60 years). The thinner and shorter tarsus is thought to allow for easier inward rotation of the lower eyelid.^{13,14}

Entropion can be caused by horizontal eyelid weakness, attenuation or disinsertion of the eyelid retractors, overriding of the preseptal orbicularis oculi muscle, previous surgery (especially the trans-conjunctival approach), infection, inflammation, or congenital origin. The most common cause of entropion is a change in involution. With age, the canthal tendon loosens, and the eyelid retractors thin, causing an incorrect position of the eyelid margin. The main causes of acute spastic entropion are infection, irritation, and inflammation. This condition most commonly occurs after intraocular surgery in patients who have involutional eyelid changes that were not recognized prior to surgery. Continuous contraction of the orbicularis oculi muscle causes an inward rotation of the eyelid margin. This, in turn, causes irritation of the cornea due to rubbing of the eyelashes, which perpetuates the problem. Tarso-conjunctival contractures cause cicatricial entropion. Any mechanism that results in increased scar tissue formation can put a person at risk for cicatricial entropion formation. Some common risk factors include the following: previous burns, trauma, infection, or inflammation.^{13,14}

Cicatricial entropion is caused by vertical tarsoconjunctival contracture and internal rotation of the eyelid margin, which results in irritation of the eyeball from inverted cilia or a keratinized eyelid margin. A large amount of force is required to pull the tarsal plate inward. Common causes of cicatricial entropion include chemical burns, trachoma, chronic eyelid infections, trauma, and conjunctival shrinkage diseases, such as cicatricial pemphigoid or Stevens-Johnson syndrome. Unlike involutional entropion, correction of cicatricial entropion requires the incision of some scar tissue.^{15,16}

Of the 5 patients with cicatricial entropion, all patients were corrected using the anterior lamellar reposition technique. There is an anatomical and physiological balance between the anterior and posterior upper eyelid lamellae that maintains the lid margins in a normal position. In cicatricial entropion, which has a very complex and dynamic mechanism,

this normal balance is broken. The shortening of the posterior lamella exerts direct traction on the skin of the eyelid margin and redirects the anterior lamellae structure so that the eyelashes are directed toward the eyeball. This may be exacerbated by other eyelid abnormalities and involution changes that often coexist with cicatricial entropion, especially in older cases and elderly patients, including dermatochalasis, blepharoptosis, eyelid retraction, and eyebrow ptosis. Cicatricial correction without addressing this problem can lead to failure of the functional goals of the operation and significant patient dissatisfaction.¹⁷

Anterior lamellar recession (ALR) is a well-known conventional surgical method for the correction of mild to moderate upper eyelid entropion. This method consists of incised skin and the orbicularis oculi muscle of the tarsus and conjunctiva, concealing the anterior lamella and leaving the tarsus exposed. Interlamellar separation can be performed via an eyelid margin approach, an eyelid crease approach, or both.¹⁸

In four patients with involutional entropion, 3 were corrected by the quickert procedure, and 1 patient was corrected by the bick procedure. The Bick procedure involves an incision in the excess triangular skin of the lower lateral eyelid. The triangle is oriented so that its base is along the edge of the eyelid, and its apex points inferiorly towards the fornix. However, the Bick procedure has been criticized for its failure to address canthal tendon laxity, the root cause of many types of eyelid malposition and higher rates of wound separation. The Quickert procedure can treat horizontal eyelid weakness with full-thickness eyelid shortening and vertical eyelid weakness by inserting the lower eyelid retractor of the orbicularis oculi muscle and the tarsal plate. It may prevent the overriding of the preseptal orbicularis oculi muscle by creating fibrosis with sutures.¹⁹ Miyamoto et al. found that with the Quickert Procedure, there was 0% recurrent entropion with a maximum of 89 months after surgery.²⁰

5. Conclusion

The most common age are those with age >60 years. The cicatricial type was the most common type in patients with entropion at Mohammad Hoesin Hospital.

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