

## Role of Tape Tarsorrhaphy in Preventing Ectropion in Facial Burns Our Experience

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### Abstract

Burns is a common problem in India. The most common cause is suicidal, where the patient pours kerosene over one self and lights on fire. Eyelid injuries are common in such instances. When left to heal by secondary intention, it leads to contracture and thereby leading to the dreadful complication of ectropion. Conventional Tarsorrhaphy described is invasive. In this article we would like to describe a non invasive method of tarsorrhaphy to prevent eyelid ectropion.

**Keywords:** Burns; Ectropion; Tarsorrhaphy.

### Introduction

Management of Facial burns is a challenge to treating surgeons. Although ocular involvement is common in facial burns, it's rare to lose eye primarily due to burns owing to protective mechanisms like Bell's phenomenon, blink reflex.<sup>1</sup> It is important to prevent eyelid retraction and ectropion to prevent corneal exposure and subsequent exposure keratopathy since once established it requires early intervention and often multiple surgical procedures. Ectropion is prevented by temporary tarsorrhaphy which involves suture closure of the eyelids which causes discomfort to the patient. In this article, we are sharing our experience of a simple, noninvasive method of tarsorrhaphy to prevent ectropion.

### Materials and Methods

The study was conducted in the Department of Plastic Surgery in a tertiary care hospital in South India in September 2021. The patient was a 37-year-old male having no comorbidity who sustained 30% second degree burns involving the face along with inhalational injury following a blast. He was managed with wound debridement, skin grafting, and physiotherapy. Since he had burns involving the eyelids, tarsorrhaphy was planned to prevent ectropion and subsequent exposure keratopathy. He was not willing for conventional tarsorrhaphy. Therefore we did tape tarsorrhaphy (Fig. 1), where we closed the eyelids using Steristrips. This was done throughout the day and at night for 3 weeks, and the patient was assessed again after healing of the raw area.



Fig. 1: Patient with Tape Tarsorrhaphy.

## Results

After 3 weeks of tape tarsorrhaphy, his raw area on the eyelids was completely healed and no evidence of lid retraction or ectropion was present in both eyes.

## Discussion

Burn injuries are extremely common and are an important cause of morbidity and mortality all over the world. A significant portion of these involves head and neck regions, with percentage ranging from 27 to 60 depending on the setting, region, and definition of what constitutes a facial burn.<sup>1</sup> Most of the facial burns are partial-thickness injuries. Wound care is difficult and complex in these patients and frequently requires hospital admission.

The eyelids play a key role in protecting the eyes. When the eyelid closes, they sweep away debris and when eyelids open, they spread tears over the surface of the conjunctiva and make a film of tear, which protects the cornea and conjunctiva. Eyelids also provide a mechanical barrier against injury by closing rapidly when needed. During the healing of eyelid burns, lids go into cicatricial ectropion leading to the inability to close the eyelids. It prevents the formation of the tear film, leading to irritation, dryness of eyes, epiphora, infection, exposure keratopathy or corneal ulcer leading to visual loss, etc.<sup>2</sup> Given that much of our communication to others is by non-verbal methods that are usually mediated by facial expressions, preventing or minimizing burns scarring and its sequelae in the peri-orbital region can help improve the quality of life of burns survivors. By doing prophylactic temporary tarsorrhaphy, these can be prevented effectively. Tarsorrhaphy simply means closure of the eyelids, either temporarily or permanently. Temporary tarsorrhaphy can either be sutureless (where the lid is closed with tape or adhesive glues or by paralyzing the levator by botulinum toxin injection) or suture tarsorrhaphy

with or without a bloaster. Suture tarsorrhaphy has its own set of complications such as lid margin deformities, suture granulomas, focal cellulitis, cheese wiring of the sutures, skin breakdown, distichiasis, etc. which can have a significant cosmetic impact on the patient.<sup>3</sup> Hence sutureless technique using tape can be very effective as well as it is free from complications associated with suture tarsorrhaphy. It is also a very simple procedure that doesn't require a skilled surgeon. Treating nurses or even the patient bystander can

be trained to perform it. It also avoids complications related to anesthesia required to perform suture tarsorrhaphy. Even though it is an effective procedure, it has its limitations. Tape tarsorrhaphy lasts for only a few days and requires frequent changing. Also, frequent examinations to look for ectropion development are needed.

## Conclusion

Our case report describes a simple non-invasive method of applying tape to close the eyelid to prevent ectropion in patients with eyelid burns. Tape tarsorrhaphy is overall an effective, low-cost, non-invasive method. However as it is a single case report from a single center, it requires a multicentre randomized controlled study with statistical analysis for validating the results.

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