

Guideline: Burn Eye Injuries

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Introduction

Facial burns are a frequent component of the presentation of victims who have sustained thermal trauma, reportedly occurring in 10-20% of burn patients.^{1,2} Ocular involvement is present in approximately 15% of facial burns.¹ About 1/3 of patients with burns involving the eye and ocular adnexa have corneal involvement, with the remaining 2/3 of patients having burns limited to the eyelids but not the ocular surface.³ Only 2-3 percent of burn patients with ocular involvement have long-term corneal morbidity associated with their injury.² Ocular burn injuries tend to be uncommon and not severe due to the protective Bell's phenomenon, wherein the eye rolls upward and outward when the eyes are rapidly closed.⁴

Purpose

The primary purpose of this guideline is twofold:

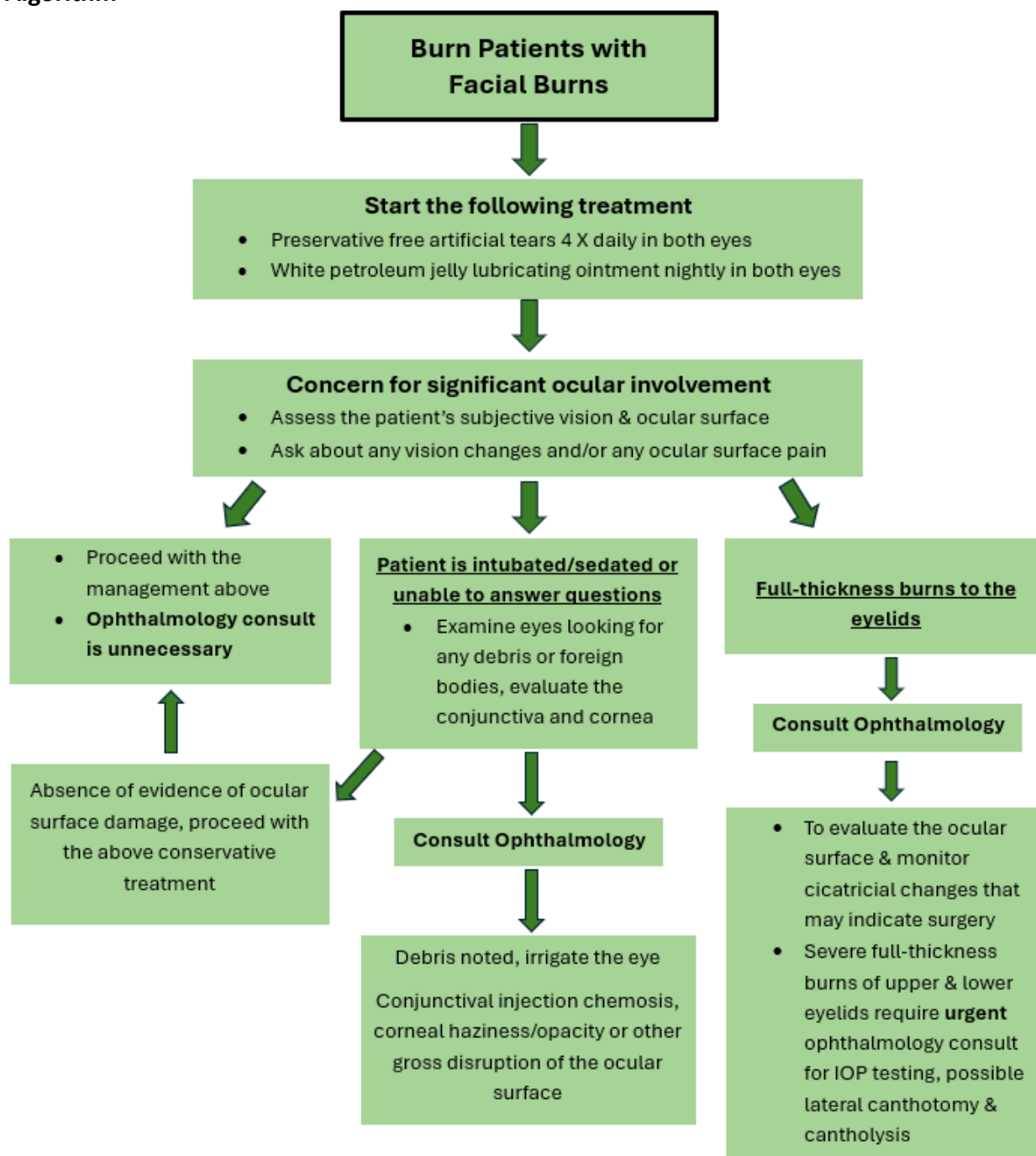
1. to ensure that care of patients with concern for ocular involvement of facial burns is safe, effective, and efficient, and
2. to ensure that the appropriate hospital resources are allocated to the care of these patients considering the limited resources available for eye-related care across the hospital.

Guideline

1. For any patient with facial burns, start the following treatment for the ocular surface:
 - a. Preservative free artificial tears 4 times daily in both eyes
 - b. White petroleum jelly lubricating ointment nightly in both eyes
2. For patients with facial burns and concern for ocular involvement, an assessment of the patient's subjective vision and ocular surface should be performed by asking the patient if they have any changes in vision that have occurred since their injury, and/or if they have any ocular surface pain.
 - a. If the patient does not have vision changes or eye pain, proceed with management as outlined in item (1). Singed eyelid hairs in the absence of vision changes or ocular surface pain can be observed in the burn unit without ophthalmology consultation.
 - b. If the patient is intubated/sedated or otherwise unable to answer questions about their subjective vision, conduct a basic examination of the ocular surface. This examination should include inspection for debris or foreign bodies as well as evaluation of the conjunctiva and corneal surface.
 - i. If there is debris noted in the eye, irrigate the eye and consult ophthalmology.
 - ii. If there is conjunctival injection, chemosis ("swelling" of the conjunctiva), corneal haziness/opacity, or other gross disruption of ocular surface architecture, then consult ophthalmology.
 - iii. In the absence of evidence of ocular surface damage, proceed with conservative treatment of the ocular surface with the treatment plan outlined in item (1).

- c. If the patient has full-thickness burns to the eyelids, consult ophthalmology for evaluation of the ocular surface and monitoring of cicatricial changes that may need to be addressed surgically.
 - i. Severe full thickness burns of upper and lower eyelids requires urgent ophthalmology evaluation for IOP testing and in some cases may need lateral canthotomy and cantholysis to prevent permanent vision loss.

Algorithm



References

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