

## **FACIAL DECOMPRESSION IN BURNS. CASE REPORT**

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**Abstract:** Facial burns have an important aesthetic and functional impact on the patient, especially type B burns. There are management alternatives that focus on aesthetic rehabilitation, but there is little evidence on functional management, mainly acute, with surgical techniques. little documented. A clinical case managed in our specialized burn center is presented, a patient with complete facial involvement, involving eyelids and eyes. The surgical technique of facial decompression at eye level is practiced, with good short-term results.

## INTRODUCTION

Severe facial burns are a unique challenge for the reconstructive surgeon, especially those burns that involve multiple facial functional aesthetic units (1). The administration of large amounts of intravenous fluids to maintain homeostasis during the treatment of the burned patient, together with the depth of the burns and their extension at the facial level, can cause circulatory dysfunction, compromising tissue perfusion. The face has a wide vascular territory, this accompanied by the protection reflexes of the patients during the incident are factors that favor regeneration and a lesser depth of facial lesions (2). Acute management of the deep burn of the aesthetic-functional facial units to prevent secondary circulatory complications is not well defined. The bibliography is scarce regarding facial escharotomy techniques and there is no consensus on the gold standard in these cases (3). The objective of this study is to propose an alternative to facial decompression, with emphasis on ocular compromise secondary to deep thermal burns, the management of facial decompression techniques in patients with deep and complex burns admitted to the National Burn Center to standardize conduct. surgery based on aesthetic and functional facial units.

## CASE REPORT

Male patient, 50 years old, with no morbid history. He was admitted to the emergency service due to a burn caused by direct fire, secondary to an explosion in a car (closed space). On admission, he presented stable, conscious hemodynamics, burns to the head, trunk, and upper and lower extremities. Due to great facial involvement and suspicion of inhalation injury, orotracheal intubation was performed and he was taken to the ward for surgical cleaning. In the pavilion it is finally estimated 58% SCT type AB characterized by head and neck 9% SCT type B and AB. Surgical cleaning and escharotomies are performed on extremities.



Image 1: Patient admission to the emergency room.

The patient evolves with deepening of his burns, with tense facial scars, mainly at the ocular level due to bilateral palpebral involvement, producing chemosis and bilateral corneal opacity. A new surgical toilet is performed 72 hours later, with bilateral ocular decompression at the level of the upper and lower eyelids, with escharotomy and tarsorrhaphy.



Image 2: Bilateral palpebral escharotomy with tarsorrhaphy.

Surgical toilets are maintained every 72 hours and segmental escharectomy is started.

On the seventh day after the ocular decompression, a significant clinical improvement is evident in both eyeballs, improving tension, clarity and chemosis, without the need to perform lateral canthotomy.



Image 3: Seventh day after decompression. Removal of tarsorrhaphy for ocular evaluation.

## DISCUSSION

Deep facial burns are a real challenge for the surgeon. Emergency management is mainly focused on airway management and later on ruling out inhalation injury, leaving aside facial decompression to avoid ocular compartment syndrome (4).

Unlike the rest of the body, facial decompression is not standardized. There are guidelines for the management of facial burns that recommend serial measurement of intraocular pressure in the presence of periocular burns; however, in our reality we do not have the supplies to carry it out, so we rely on the clinical picture and the high suspicion (5).

The standard management of this syndrome is lateral canthotomy and inferior cantholysis, but this technique is based on the pathophysiology of ocular hypertension secondary to retroseptal compromise (bleeding processes secondary to intraorbital trauma or post-surgical), it is suggested that in the case of deep thermal burns, the pathophysiology of hypertension is given by extrinsic compression by non-compliant external tissue (eschar) and that, like escharotomies in other areas of the body, decompression can only reach the anterior lamella without requiring opening

the orbital septum and preventing a gateway for microorganisms to the orbital cavity (6).

Facial escharotomy by subunits, according to what Ozkan et al. It has been described to improve aesthetic functional results, like most of the series investigated, but not as decompression management (8). Based on our clinical case, the physiological bases of thermal burns and the clinical experience of our center with deep facial burns, we demonstrate that decompression of the ocular compartment can be achieved by means of palpebral escharotomies, without the need to perform retroseptal decompression. like what performs lateral canthotomy, which is an easy alternative to reproduce, especially in centers that do not have emergency ophthalmologists.

## CONCLUSION

Facial compartment syndrome is a scenario little studied, in the sense that it is assumed that the robust arterial network will be able

to supply the circulatory requirements in the face of a deep burn, however, in second or third degree injuries the superficial arteries could be damaged. and the skin could be irrigated through the perforating arteries and avoid ischemic lesions.

Facial escharotomy based on the principles of the aesthetic subunit favors decompression of the axial arteries, increases tissue preservation by promoting circulation, prevents edema and, from the aesthetic and functional point of view, allows it to be a guide for future grafts avoiding sequelae. related to reconstructive surgery. The scarce bibliography on facial decompression techniques promotes investigative interest in the development of standardization and description of said surgical procedures in order to strengthen safe, methodical and replicable practice in these complex cases.

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