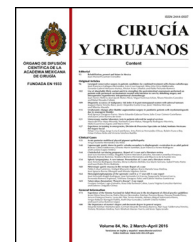




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GENERAL INFORMATION

Reconstruction of the ear in the burns patient[☆]



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Abstract Face burns are a singular pathology with great functional and psychological impact in the patients suffering them. The ears play a fundamental role in personal interactions and damage to this organ results in physical and emotional distress. The reconstructive treatment of the burned ear is a challenge. Multiple procedures have been described to achieve success in the reconstruction of the burned ear; immediate reconstruction with autologous rib cartilage, secondary reconstruction, alloplastic material reconstruction, tissue expansion, skin grafts and also microvascular flaps are some of the most common procedures used in this patients. All these techniques focus on giving a natural appearance to the patient. Burns to the ears affect 30% of the patients with facial burns, they require an excellent treatment given by a multidisciplinary team.

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PALABRAS CLAVE

Reconstrucción
auricular;
Quemaduras faciales;
Quemaduras

Reconstrucción auricular en el paciente quemado

Resumen Las quemaduras en la cara son una entidad con gran impacto funcional y psicológico debido a las secuelas que presentan los pacientes. Las orejas juegan un papel fundamental en la interacción de las personas y las lesiones de este componente anatómico se asocian a secuelas físicas y emocionales. El tratamiento reconstructivo de las quemaduras en orejas es un reto.

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Se tienen múltiples procedimientos para lograrlo, entre los que destacan: la reconstrucción inmediata con cartilago costal, la reconstrucción diferida, el uso de material sintético, el uso de expansores tisulares, el uso de injertos y el uso de colgajos libres. Todas estas técnicas van encaminadas a devolver una apariencia natural a la oreja quemada. Las quemaduras en orejas se presentan en un 30% de los pacientes con quemaduras faciales y requieren un excelente tratamiento por un equipo multidisciplinario.

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Facial burns pose a medical challenge. Their physical and psychological sequelae require optimal and appropriate specialist medical care and precise reconstruction. The ears form part of the face and are of great aesthetic and functional importance.

The ears are vulnerable to burns due to their prominent location on the side of the head, the thin skin that covers them and their three-dimensional structure. For this reason, in 90% of patients with neck and facial burns the ears are involved, of whom 30% will have a lesion to the cartilage framework of the ear.¹

Moreover, the thin skin that covers the cartilage framework of the ear is fragile and can be injured easily. In second or third degree burns, the cartilage of the ear is affected, either by direct damage or by secondary infections, which cause a deformity that requires correct reconstruction.²

The aim of this paper is to review the current concepts and principles of ear reconstruction in burns patients.

Classification of the burned ear

K'ung et al. created a simple classification to categorise patients with ear burns. The classification has 3 degrees depending on the most affected part of the ear³:

- Mild: loss of the helix and the upper part of the ear without extensive scarring to the skin around the ear.
- Moderate: the concha is normal in shape but is strongly adherent to the skin. There is involvement of the upper third of the ear, including the anterior and posterior crura, and considerable scarring around the ear.
- Severe: there are only remnants of the concha, and marked scarring to the soft tissue around the ear remnants. In very severe cases there can be stenosis of the external auditory meatus.

Principles of the management of ear burns

Ear burns must be attended from the moment the patient arrives at the emergency department. The aim of this paper is not to report how to care for a burns patient, but rather to highlight the most important details in the management of ear burns. On arrival at the emergency department, it must be ascertained whether or not the cartilage framework has been exposed. This is vitally important to

prevent complications such as chondritis or cartilage necrosis.

Ibrahim proposes some principles for the care of ear burns, as follows⁴:

- Avoid pressure to the burned ear and bulky dressings in the first weeks.
- Debridement of eschar and crusts should be minimised.
- The hair around the ear should be shaved to reduce the risk of infection.
- Wash with soap twice daily.
- Always apply ointment with a bacteriostatic and bacteriocidal action.

Topical management of burns of the auricle

There are many dressings, solutions, ointments and topical antibiotics that can be used on ear burns. Their use will depend on the degree of the burn. They can be divided into 2 major groups:

- Antiseptic agents: these are designed to limit (bacteriostatic) or eliminate (bacteriocidal) microorganisms in the burn. On arrival at the emergency department the area should be washed with antibacterial soap. Care should be taken when using chlorhexidine, because burns to the cornea have been reported, and povidone-iodine due to potential absorption in deep burns.⁵
- Antimicrobial agents: the therapeutic objective in first degree and superficial second degree burns is to keep the skin hydrated and to prevent infection. Lubricant ointments can be used for this purpose, and in cases where there is a risk of infection, silver sulfadiazine cream. The antimicrobial effect of silver is sufficient to prevent the development of infection. When used on the auricle, exposure to the sun should be avoided, because use of the cream on the face is associated with pigmentation of the skin.⁶

Mafenide acetate is a sulphonamide with excellent antibiotic properties, which also deeply penetrates eschar. These characteristics make it an ideal agent for the treatment of burns where there is exposure of the cartilage framework. It provides coverage against gram negative and Gram positive pathogens and has a mild antifungal action.

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