98. SURGICAL MANAGEMENT OF POST-BURN SEQUELAE

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Introduction. Burns represent complex traumatic injuries of the skin and underlying tissues, most frequently caused by thermal agents. The etiology also includes exposure to radiation, electrical current, chemical agents, and mechanical trauma. Thermal burns result from contact with high-temperature sources, leading to protein denaturation and irreversible cellular damage, commonly associated with hot liquids, overheated surfaces, or open flames. Post-burn scarring may develop through a dysregulated reparative process characterized by persistent inflammation and excessive fibrous proliferation. Although re-epithelialization may occur relatively rapidly, dermal remodeling often remains incomplete, resulting in functional and aesthetic sequelae. Surgical management of post-burn scars includes various reconstructive techniques such as tissue expansion, elliptical excision, Z-, S-, or W-plasty, geometric broken-line closure, V-Y and Y-V advancement procedures, flap reconstruction, skin grafting, and application of the amniotic membrane.

Aim of study. Analysis of post-burn sequelae and the reconstructive surgical methods used in their management.

Methods and materials. The study presents four clinical cases of patients with post-burn cutaneous sequelae, as well as their surgical treatment. The clinical cases include: (I) massive keloid scar in the elbow region; (II) ulcerated scar of the foot;(III) traction keloid scar in the neck region; (IV) massive soft tissue defect in the frontal region. The surgical methods of treatment varied depending on the type of lesion and the therapeutic indications, being classified into two categories: (I) autoplasty methods, represented by the use of local tissue flaps and skin grafts; (II) alloplastic methods–the use of the amniotic membrane.

Results. After treatment, favorable functional and aesthetic outcomes were achieved. The keloid scar treated with plasty and amniotic membrane showed a reduction in volume and tension. The ulcerated scar achieved complete epithelialization after amniotic membrane application. The traction keloid scar in the neck demonstrated improved mobility and reduced retraction following Z-plasty. The frontal soft-tissue defect was successfully covered with an autologous skin graft, restoring skin continuity and providing a satisfactory aesthetic result.

Conclusions. Surgical treatment of post-burn sequelae requires adaptation of the operative technique to the lesion type—keloid, retractile, or ulcerative scars, as well as extensive soft-tissue defects—and their location, in order to select the optimal reconstructive method, such as autoplasty or alloplastic procedures, thereby improving functional and aesthetic outcomes and enhancing quality of life.

Keywords. burns, post-burn scars, amniotic membrane, management of post-burn scars.

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