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CLINICAL OUTCOMES OF EARLY NECRECTOMY AND AUTODERMOPLASTY IN PATIENTS WITH DEEP BURN INJURIES

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Introduction. Deep burn injuries remain one of the most severe forms of thermal trauma, characterized by extensive tissue necrosis, profound inflammatory response, and a high risk of infectious complications. The presence of devitalized tissues creates favorable conditions for microbial colonization, persistent inflammation, and systemic intoxication, which significantly worsen clinical outcomes and prolong hospitalization. In patients with deep burns, delayed wound closure is associated with increased morbidity, higher incidence of sepsis, metabolic disturbances, and unsatisfactory functional and cosmetic results. For many years, the management of deep burn wounds was based on a conservative or delayed surgical approach, allowing spontaneous demarcation of necrotic tissues before surgical intervention. However, this strategy often resulted in prolonged open wound periods, increased bacterial contamination, and deterioration of the patient's general condition. Advances in burn surgery have led to the development of active surgical tactics aimed at early removal of necrotic tissue and prompt restoration of skin integrity. Early necrectomy combined with autodermoplasty has been increasingly recognized as a pathogenetically justified approach in the treatment of deep burns. Timely excision of necrotic tissue eliminates the source of toxins and infection, reduces inflammatory burden, and creates favorable conditions for wound healing. Autodermoplasty enables rapid closure of the wound surface, restores the barrier function of the skin, and reduces fluid and protein loss. Despite growing clinical experience, further evaluation of the clinical effectiveness of early necrectomy and autodermoplasty in deep burn patients remains necessary.

Materials and Methods. This study is based on a clinical analysis of treatment outcomes in patients with deep burn injuries who were managed in a specialized burn surgery department. The study included patients with deep thermal burns requiring surgical intervention, whose general condition allowed for early operative management. All patients received comprehensive treatment, including intensive infusion therapy, adequate



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analgesia, correction of metabolic disturbances, and systemic antimicrobial therapy when indicated. Surgical management consisted of early necrectomy performed within a time frame aimed at minimizing systemic complications and preventing progression of infection. After complete excision of necrotic tissues, wound defects were covered using split-thickness skin grafts harvested from unaffected donor sites. Autodermoplasty was performed following meticulous hemostasis and preparation of a viable wound bed. Postoperative care included careful monitoring of graft viability, assessment of inflammatory changes, and evaluation of graft take and epithelialization. Clinical effectiveness was assessed based on wound healing dynamics, graft survival, incidence of infectious complications, and duration of hospital stay.

Results. Clinical evaluation demonstrated that early necrectomy followed by autodermoplasty had a pronounced positive effect on wound healing in patients with deep burn injuries. Early removal of necrotic tissue led to a significant reduction in local inflammatory manifestations and contributed to stabilization of the patients' general condition. A decrease in wound exudation and edema was observed in the early postoperative period, indicating favorable progression of the wound healing process. Autodermoplasty provided reliable coverage of burn wounds and promoted rapid restoration of skin integrity. In the majority of cases, satisfactory graft take was observed without signs of secondary infection or graft rejection. Early wound closure reduced the duration of the open wound phase, which is critical for preventing infectious complications and systemic inflammatory responses. Patients treated with early surgical intervention demonstrated shorter healing times and reduced length of hospital stay compared with delayed treatment strategies. Overall clinical outcomes indicated improved recovery rates and earlier initiation of rehabilitation.

Discussion. The findings of this study support the effectiveness of early necrectomy combined with autodermoplasty as a key component of modern burn management. Necrotic tissue acts as a persistent source of infection and inflammatory mediators; therefore, its timely removal is essential for interrupting the pathological cascade associated with deep burn wounds. Early surgical excision reduces bacterial load and systemic intoxication, thereby improving the patient's physiological reserve and response to treatment. Autodermoplasty plays a crucial role in restoring the protective barrier function of the skin, reducing fluid and protein loss, and preventing microbial invasion. Early wound closure also contributes to improved metabolic stability and enhances the patient's overall recovery. From a clinical perspective, this approach allows for more predictable wound healing and improved functional and cosmetic outcomes. The results are consistent with current concepts in burn surgery, emphasizing the importance of individualized surgical timing and comprehensive perioperative care. Early necrectomy and skin grafting should be considered a standard therapeutic strategy in appropriately selected patients with deep burn injuries.

Conclusion. Early necrectomy combined with autodermoplasty is a clinically effective and pathogenetically sound approach in the treatment of patients with deep burn injuries. This strategy facilitates rapid wound closure, reduces inflammatory and infectious

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complications, shortens hospitalization, and improves overall clinical outcomes. The integration of early surgical intervention into burn care protocols contributes to enhanced recovery and improved quality of life for patients with deep burns.



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