SURGICAL EFFICACY OF EARLY EXCISION AND SPLIT-THICKNESS SKIN GRAFTING IN THE MANAGEMENT OF DEEP BURN WOUNDS

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Introduction . Deep burn wounds represent a critical challenge in modern burn care due to extensive tissue destruction, prolonged inflammatory response, and a high susceptibility to infection. The persistence of devitalized tissue within the wound bed contributes to continuous bacterial colonization, release of inflammatory mediators, and systemic metabolic disturbances. These factors significantly delay wound healing and negatively affect patient outcomes, including prolonged hospitalization and increased risk of septic complications. Historically, delayed excision of necrotic tissue was widely practiced, allowing spontaneous demarcation of nonviable tissues before surgical intervention. However, this approach often resulted in extended periods of open wounds, increased microbial burden, and progressive deterioration of the patient's physiological status. Advances in surgical techniques and perioperative management have shifted the paradigm toward early excision strategies aimed at reducing systemic inflammatory load and accelerating wound closure. Early excision of necrotic tissue followed by split-thickness skin grafting has emerged as an effective method to restore skin integrity and minimize complications associated with deep burn injuries. By promptly removing necrotic tissue, this approach reduces bacterial contamination and creates a viable wound bed for graft adherence. Despite widespread clinical application, further evaluation of surgical efficacy and clinical outcomes remains essential to optimize treatment protocols for deep burn patients.

Materials and Methods. This study presents a clinical assessment of patients with deep burn wounds treated in a specialized burn surgery unit. Patients with deep thermal injuries requiring operative management were included, provided their general condition permitted early surgical intervention. Comprehensive burn care was administered to all patients, including fluid resuscitation, pain management, nutritional support, and systemic antimicrobial therapy when clinically indicated.

Surgical treatment involved early excision of necrotic tissues performed within an optimal timeframe to limit systemic inflammatory progression. After achieving adequate hemostasis and preparation of a clean wound bed, defects were covered with split-thickness skin grafts harvested from healthy donor sites. Grafts were secured to ensure stable adherence and protected with appropriate postoperative wound care strategies. Clinical follow-up focused on graft survival, wound healing dynamics, inflammatory response, and occurrence of infectious complications. Treatment efficacy was evaluated by analyzing time to wound closure, graft take rates, duration of hospitalization, and overall recovery trajectory.

Results. Clinical outcomes demonstrated that early excision combined with split-thickness skin grafting significantly improved wound healing in patients with deep burn injuries. Rapid removal of necrotic tissue resulted in a marked reduction in local inflammatory signs and decreased wound exudation. Patients exhibited improved wound bed quality, facilitating successful graft adherence. High rates of graft survival were observed, with minimal incidences of partial graft loss or infection. Early wound closure shortened the open wound phase, reducing the risk of secondary contamination and systemic inflammatory responses. Patients undergoing early surgical management experienced faster recovery and shorter hospital stays compared with those treated using delayed excision strategies. Overall, early surgical intervention promoted favorable healing conditions and contributed to improved clinical stability and rehabilitation outcomes.

Discussion. The findings underscore the importance of early surgical intervention in the management of deep burn wounds. Necrotic tissue serves as a persistent source of infection and inflammatory mediators; thus, its timely removal is crucial for interrupting pathological processes that impede healing. Early excision minimizes bacterial load and supports restoration of tissue homeostasis. Split-thickness skin grafting plays a vital role in achieving definitive wound closure, restoring skin barrier function, and preventing excessive fluid and protein loss. The combination of early excision and prompt grafting enhances wound healing efficiency and reduces the physiological burden on burn patients. From a clinical perspective, this approach allows for better control of the wound environment and more predictable healing outcomes. The integration of early surgical strategies into burn care protocols is supported by improved patient recovery, reduced complication rates, and enhanced functional outcomes.

Conclusion. Early excision of necrotic tissue followed by split-thickness skin grafting is a highly effective surgical strategy for the treatment of deep burn wounds. This approach accelerates wound closure, reduces infectious and inflammatory complications, shortens hospital stay, and improves overall clinical outcomes. Incorporating early surgical intervention into standard burn management protocols can significantly enhance recovery and quality of life for patients with deep burn injuries.