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THE IMPORTANCE OF ALLOSKIN GRAFTING IN THE SURGICAL TREATMENT OF DEEP BURNS OF THE FACE AND NECK

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Relevance:

The primary goal in the treatment of burn disease is to restore the lost skin as quickly as possible. Delays in skin defect repair increase the likelihood of complications. Deep burns of the face and neck result in the absorption of toxins into the body, disrupting the stability of vital organs and systems. This can lead to multiple organ dysfunction in the early stages and severe multiple organ failure later on. Each surgical intervention affects the functional state of a burn patient's body systems. Although early necroectomy reduces pain and toxin absorption, it also causes blood loss and disrupts hemostasis. Therefore, selecting appropriate surgical treatment methods is critical.

Objective:

To improve the outcomes of surgical treatment for patients with deep burns of the face and neck by using temporary coverage of wounds with allogeneic skin grafts.

Materials and Methods:

The study included 46 patients with deep burns of the face and neck, treated in the burn unit of the Samarkand branch of the Republican Scientific Center of Emergency Medical Care between 2010 and 2023. The patients ranged in age from 3 months to 38 years. The total burn surface area ranged from 10% to 85% of the body, with deep burns comprising 20% to 55%. Given the severity of the patients' conditions and the limited availability of donor sites, autologous skin grafting was deemed too risky. Instead, allogeneic skin grafts were harvested from close relatives (usually parents) after thorough laboratory screening for infectious diseases and obtaining informed consent.

The donor skin (0.2–0.3 mm thick) was harvested using an electrodermatome under local anesthesia (0.9% sodium chloride + 2% lidocaine + 0.3-0.4 ml adrenaline) and perforated in a 1:4 or 1:6 ratio to increase the graft area. The recipient site was prepared by debriding necrotic tissue and applying the graft. Hormonal therapy (prednisolone 0.3–0.5 mg/kg or dexamethasone 0.1–0.2 mg/kg) was administered for 4–5 days postoperatively to suppress the immune response and enhance graft survival.

Results:

Anti-shock therapy was completed without complications, improving outcomes during the acute toxemia phase. Protein supplementation and comprehensive organprotective therapy prevented anemia and supported tissue healing. Necrotic tissue separation began by days 12–14, with epithelialization of superficial wounds observed in most cases. By days 17-18, two-thirds of the eschar was removed. Necrosis clearance occurred earlier in pediatric patients. However, by days 24–25, impaired wound trophism (nutrition) was observed due to continued loss of fluids and proteins from the wound site.





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This led to complications such as cardiovascular and respiratory dysfunction, hypoalbuminemic edema, and renal insufficiency.

Given the limited availability of donor sites and the low efficacy of temporary synthetic wound coverings (which often led to purulent complications), the use of allogeneic skin grafts proved to be a viable solution. Thorough screening of donors and the use of hormonal therapy minimized graft rejection. The allografts reduced fluid loss, maintained serum protein levels, and provided a biological cover that improved the patients' overall condition.

Conclusion:

Deep burns of the face and neck are associated with severe complications and increased mortality. Temporary synthetic wound coverings did not yield satisfactory outcomes due to frequent infections and worsening patient conditions. In contrast, the use of allogeneic skin grafts significantly improved early wound healing, reduced complication rates, and increased patient survival. This method helps maintain hemodynamic and hematologic stability, facilitating subsequent autologous skin grafting procedures.

