study is limited by a relatively small sample size, however these findings warrant continued research in the use of self-adherent elastic wrap to maximize graft take in hand burns.

Figure 1. Self-adherent elastic wrapping of the hand

82 Early Skin Excision Decreased the Risk of Skin Infection, Sepsis and Mortality Among Burn Patients

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Introduction: In lieu of outdated and limited patient studies on excision for severe burns, a more comprehensive analysis is indicated to determine the effects of early skin excision following burn. This study aims to address the outcomes of early excision.

Methods: Data collection and analysis was performed using TriNetX, a national research database. The study population included patients ranging from 0 to 90 years old who underwent excision for burns. Groups were stratified by the number of days after injury in which they received a skin excision treatment. Five outcomes were analyzed: death, cardiac stress, wound infection, blood transfusion, and sepsis. Risk and incidence of various health outcomes were compared between groups after matching for age, gender and race, using a z-test with $p < 0.05$ considered significant.

Results: We identified 2,522 patients who underwent excision between 0-3 days, 825 between 4-7 days, and 419 between 8-14 days following burn. We found a significant decrease in risk of skin infection and sepsis for skin excision 0-3 days after burn compared to 4-7 days ($p < 0.05$). Additionally, the frequency of blood transfusion significantly increased for those with excision 0-3 days after burn when compared to 4-7 days ($p < 0.05$). There was a significant increase in the risk of mortality for patients who received skin excision 8-14 days after injury as compared to both 0-3 days ($p < 0.05$) and 4-7 days ($p < 0.05$). However, we found no statistical difference in cardiac stress, skin infection, blood transfusion or sepsis between 0-3 and 8-14 days nor 4-7 and 8-14 days.

Conclusions: Skin excision 0-3 days after burn injury results in a significantly lowered risk of skin infection and sepsis as compared to skin excision 4-7 days and 8-14 days after burn. Skin excision within the first 7 days after burn decreased the risk of mortality as compared to excision 8-14 days after burn. The risk of blood transfusion increased with early excision, which may be explained by the severity of the injury.

83 The Impact of Tracheostomy on Long-term Patient Outcomes: A Burn Model System National Database Study

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Introduction: Management of the upper airway is crucial to burn care, especially in the setting of inhalation injury or burns to the face or neck. Endotracheal intubation is often performed to secure the airway; however, tracheostomy may be necessary in patients requiring prolonged ventilatory support. This study compares long-term outcomes of burn patients with and without tracheostomy.

Methods: Data from the Burn Model System National Database, collected from 2013 to 2020, were analyzed. Demographic and clinical data were compared between those with and without tracheostomy. The following patient-reported outcome measures, collected at 6-, 12-, and 24-months, were analyzed: Veterans Rand 12 Physical Component Summary Score (VR-12 PCS), Veterans Rand 12 Mental Component Summary Score (VR-12 MCS), Satisfaction with Life (SWL), Community Integration Questionnaire (CIQ), Patient-Reported Outcomes Measurement Information System (PROMIS-29), employment status, and number of days to return to work. Regression models were used to assess the impact of tracheostomy status on long-term outcome measures, controlling for demographic and clinical variables.

Results: Of the 714 patients included in this study, 39 (5.46%) received a tracheostomy and 675 (94.54%) did not. The two groups were similar across all demographic data collected. Tracheostomy patients were more likely to have flame injury, inhalation injury, larger burn size, more trips to the operating room, longer hospital stay, and greater number of days on a ventilator ($p< 0.001$). Regression model analyses demonstrated that tracheostomy was associated with worse VR-12 PCS scores at 6-, 12-, and 24-months (6.6 [95% CI 1.5, 11.8], p=0.012; 11.5 [6.2, 16.8], $p< 0.001$; 10.8 [4.2, 17.5], p=0.001). Tracheostomy was also associated with worse scores in two PROMIS-29 domains, physical function and pain interference. For physical function, the association was seen at 6-, 12-, and 24-months (7.4 [3.0, 11.8], p=0.001; 9.6 [5.2, 14.0], $p< 0.001$; 11.3 [5.8, 16.9], $p< 0.001$). For pain interference, the association was only seen at 12-months (-5.3 [-10.0, -0.55], p=0.029).

Conclusions: After burn injury, patient-reported outcome measures of physical function and pain interference were significantly worse with tracheostomy.