

550 **Considerations for Ophthalmologic Evaluation to Reduce Ocular Morbidity in Facial Burn Patients**

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**Introduction:** Advances in burn management have led to significant improvement in survival rates, even in patients with high total body surface area (TBSA) affected. Ocular morbidity in facial burn patients remains high, partially attributable to the life-threatening nature of these injuries. Previous studies have shown that early ophthalmologic intervention leads to better outcomes, however, specific risk factors for short and longer term ophthalmologic outcomes have not been elucidated. This study aimed to identify risk factors for short- and long-term ophthalmologic complications in facial burn patients to prioritize patients that require urgent ophthalmologic evaluation.

**Methods:** Retrospective review of facial burn patients presenting to an American Burn Association-verified regional burn center between June 2007 and May 2016 was conducted. Demographics, presentation, time to ophthalmologic consultation, and short- and long-term complications were recorded. Odds ratio and multivariate analyses were performed to assess for significant risk factors.

**Results:** A total of 1,126 facial burn patients were identified, of which 135 (12%) involved periorbital and orbital injury. Average TBSA burned was 9.68%, with an average facial surface area burned of 1.56%. The most common ocular injury was eyelid burn (65.9%). Ophthalmology was consulted for 118 (87.4%) patients. Short-term ophthalmologic complications were noted in 58 (43%) patients, most commonly chemosis (n = 34, 25.2%). Long-term complications were rare, occurring in only 7 (5.2%) patients.

Odds ratio analysis revealed that inhalation injury significantly increased the likelihood of both short- and long-term complications (OR 3.16 and OR 9.81, respectively). Active smoking increased the likelihood of long-term complications (OR 14.76). Ophthalmologic intervention, including need for consult, and use of lubricant, antibiotics, or steroids were each associated with increased risk of short-term complications.

On multivariate analysis, those with long-term complications tended to be older (p = 0.045). Those with corneal injury generally had worse outcomes, with higher likelihood of short- and long-term complications (p < 0.001, p = 0.057, respectively).

Blindness did not occur in any patient, and no long-term complications occurred in those who did not receive ophthalmologic consult. Neither TBSA nor facial SA burned was associated with the development of short- or long-term complications.

**Conclusions:** Providers should obtain early ophthalmologic evaluation and frequent follow-up exams for facial burn patients presenting with advanced age, active smoking status, corneal injury, or inhalation injury to reduce development of long-term complications.

551 **Age Does Not Predict Admission Culture Positivity**

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**Introduction:** Burn patients are susceptible to wound infections, urinary tract infections, pneumonia, and bloodstream infections. With rising rates of community colonization with multidrug-resistant organisms (MDRO), the colonization of wounds with commensal organisms is more concerning than ever, which is particularly true in patients with recent hospital admissions, advanced age, or institutional living situations. The purpose of this study was to examine if age was a factor in obtaining admission cultures and if older patients were more likely to have positive cultures.

**Methods:** A retrospective chart review was conducted involving burn patients admitted at three ABA verified burn centers from January 2016 - December 2017. Data collected included demographics, burn injury, and cultures obtained within 24 hours of admission. Patients were divided into 10-year age increments from 20 to ≥ 80 years old. Data analysis was conducted using Chi-square, Fisher Exact, and Kruskal-Wallis tests.

**Results:** A total of 1615 patients (mean age 45.9± 17.7 years, 1145 males (70.9%), mean burn size (TBSA) 9.6± 14.2%) were analyzed. Admission cultures obtained were: 656 (40.6%) wound cultures, 196 (12.1%) urine cultures, 139 (8.6%) blood cultures, and 1445 (89.5%) Methicillin-Resistant Staphylococcus Aureus (MRSA) screen. In all age groups, there were no significant differences between patients who had wound cultures (p = 0.97), blood cultures (p = 0.39), or MRSA screening (p = 0.9). As patients aged, they were more likely to have urine cultures obtained (p=0.01); - 23% of patients >80 years old had urine cultures ordered at admission compared to 8.6-16.9% of younger patients. Positive results by age group: wound cultures (p= 0.09), urine cultures (p= 0.16), blood cultures (0.10), MRSA screen (p=0.98). In looking at increased exposure to MDROs prior to admission by age groups, patients in the 61-70-year (8.33%), 71-80-year (5.68%), and >80-year (6.67%) age groups were more likely to have a recent (within 30 days) hospitalization (p = 0.02), but there was no significant difference in pre-hospital institutionalization (i.e., prison, skilled nursing facility) by age group (p = 0.06). With a recent hospitalization, MRSA screening was more likely to be positive (11.3% vs. 4.9%, p = 0.05).

**Conclusions:** All burn patients are susceptible to infections. Urine cultures were more likely to be obtained in older burn injured patients who are 80 years of age or older. There was no significant difference in culture positivity by age. Apart from MRSA screen positivity, there was no increased risk of urine, wound, or blood culture positivity with recent hospitalization or institutionalization. The utility of screening all

patients for MDROs on admission should be considered for patients 20 years of age and older.

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**552 DFB: Tiny burn, big problem - the implications of a diabetic foot burn**

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**Introduction:** In the United States, >30 million people (10.5% of the population) have diabetes, both diagnosed and undiagnosed. Many of these patients go on to develop diabetes related complications, such as peripheral neuropathy. Patients with diabetes are also prone to foot injury. The purpose of this study is to determine clinical outcomes associated with foot burns in patients with diabetes.

**Methods:** A retrospective chart review of adult patients ( $\geq 18$ yo) admitted to a major metropolitan burn center at a safety-net hospital from 2008-2021 with an isolated burn to the lower extremity and a diagnosis of diabetes mellitus. Patients were categorized based on admission hemoglobin A1C. The primary outcome was hospital length of stay and secondary outcomes were time to presentation, infection, amputations, and mortality.

**Results:** A total of 136 patients were included in the study, 79% of which were male. 84% of the patients were < 65yo and the mean age was 54.1yo and an average HbA1C of 9%. Scald injury was most common mechanism of injury (54%) followed by radiant (24.3%) and contact burns (16.2%). The average burn size was 2.3% TBSA. The median length of stay was 7 days (3 days per percent TBSA). Patients presented on average 5.2 days following injury with 44.8% patients presenting with an infection. More than half (54%) of the patients had peripheral neuropathy at baseline. A majority (74%) of the patients underwent surgical excision. About 18% of the patients underwent an amputation and 3.7% were admitted to the intensive care unit with an average ICU length of stay of 7. Additionally, there was 1 inpatient mortality.

**Conclusions:** Our study found that lower extremity burns in patients with diabetes were associated with a prolonged hospital stay, high infection rate, need for surgical intervention and high morbidity/disability rate as evident by the number of patients requiring amputations despite the small size of the burn. Peripheral neuropathy may be one of the reasons leading to delayed presentation to a burn center following injury. Hence, burn prevention in this patient population through intense education on proper foot care and inspection along with adequate glycemic control are key to improving outcomes for patients with diabetes.