A SOFT CASTING TECHNIQUE TO MANAGE PEDIATRIC LOWER EXTREMITY BURNS - LESS PAIN, MORE GAIN (136)

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Introduction: Lower extremity burns are common in pediatric burn care. Appropriate treatment is essential to preserve full function. We hypothesized that a soft casting technique, which holds the lower extremity in an optimal position and is changed weekly, would be less painful, shorten time to healing, promote early mobilization, decrease the need for surgery and minimize the risks of contracture formation when compared to traditional treatment methods.

Methods: A retrospective chart review of pediatric patients who sustained foot, ankle and lower leg burns between January 1, 2009 and June 30, 2014 was completed. The soft cast dressing was changed weekly and was composed of Adaptic impregnated with an antibiotic ointment, Kerlix, cast padding, plaster, soft-casting material and Coban. Soft casting results were compared to traditional burn dressings as described in the literature. Outcomes included: number of dressing changes, time to wound closure, whether surgical intervention was required, complications that arose such as contractures and infection, and the functional outcome of the injured lower extremity.

Results: There were 89 pediatric patients with 128 injured feet, ankles, and/or lower legs. Patients were 3.4 ± 0.4 years of age and had a total body surface area burn of 3.8% ± 0.05%. A total of 106/128 (83%) lower extremity burns healed spontaneously within 21 days. The average time to wound closure was 16.2 ± 0.73 days compared to conservative traditional methods, which average 24.4 days. Surgical intervention for wound closure was 22/128 (17%). A red rash or suspicion for a superficial yeast infection was evident in 31/128 (24%) at some point during treatment, there were no bacterial infections. At least one contracture developed in 4 feet (3%) by the end of treatment, in contrast to 15% reported in the literature. Each patient had an average of 1.9 ± 0.1 cast changes versus daily dressing changes. Full function with no deficits at the time of the final clinic visit was achieved in 123/128 feet (96%), in comparison to 69-85% referenced in the literature. Positive results were achieved in a timely manner, with an average of 64.2 ± 12.3 days (2.1 ± 0.4 months) to the final clinic appointment at which patients were deemed fully healed and back to normal function, compared to 17.3 months for traditional treatment methods in a previous study.

Conclusion: Soft casting is an effective treatment for pediatric lower extremity burns because it places the child’s burn injury in an optimal healing position and environment, leading to fewer dressing changes, less pain, early mobilization, and reduced need for surgical intervention.

References: