596 Implementation of a Burn Laser Program at a Children's Hospital

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Introduction: Carbon dioxide ablative fractional laser (CO2-AFL) therapy has become standard of care for adult burn hypertrophic scars (HTS). This therapy option has not been widely adopted in pediatric burn care and no established guidelines for treatment protocols have been published. We sought to modify our American Burn Associated Adult Verified Burn Centers laser protocol at our Children's Hospital with hopes to provide optimal care to our pediatric burn population. We present our protocol and early experience of CO2-AFL therapy for pediatric burn HTS.

Methods: We conducted a retrospective chart review of pediatric burn patients undergoing CO2-AFL treatment of HTS during the study period of Jan 2021-Oct 2021. Pediatric burn patients were offered laser treatment if their scars were symptomatic with patient complaints of HTS, pruritis, neuropathic pain, and scar contractures. 37 pediatric patients ≤13 years of age were included in our review.

Results: We treated 13 pediatric patients for a total of 40 laser sessions with each patient averaging 3 sessions. Of the 13 patients that were treated with laser, 62% (8 of the 13 patients) had split-thickness skin grafting with 38% (3 of the 8 patients) of those having a staged grafting procedure with dermal substitute. 15% (2 of the 13 patients) healed primarily and 15% (2 of the 13 patients) required excision and closure. Only 1 patient treated with ASCS alone required laser therapy. Our protocol requires patients to receive preoperative Tylenol, Benadryl, Pepcid, and Oxycodone. The patients then received MAC anesthesia with Toradol, De xamethasone, Ketamine or Propofol, and Zofran. Patients with extensive HTS on the face or neck were intubated for the procedures. Oxycodone and/or Dilaudid were provided if needed in the post-operative phase. All patients were discharged with Tylenol or Motrin and Triamcinolone 0.1% ointment to be applied daily for 48 hours and then 3-4x/day until the follow-up clinic appointment at one week. Patients were able to resume normal activities the day following the procedure.

Conclusions: Patients and their parents have reported improvements in pigment, pliability, thickness, and pruritis following laser treatments. We created a protocol that allows on average 8 pediatric patients per day to receive laser treatment without it over burdening the pre-operative and post-operative recovery room nursing staff. We are currently tracking outliers of patients requiring increased postoperative analgesia and/or greater than 1 hour in the recovery phase. With the implementation of a laser protocol, we have successfully introduced laser therapy as a viable option for our pediatric burn survivors.

597 Reconstruction of Lop Ear Deformities After Severe Burn Injury in Pediatric Patients: An 11-year Experience

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Introduction: The ear is one of the most highly visible structures on the face. One or both ears are frequently involved in panfacial burns. Because they are bilateral structures, asymmetries are clearly visible. Reconstruction of burned ear deformity often requires replacement or modification of skin and/or cartilage. Even these are successfully replaced, scar contractile forces can cause deformation of the ear. One of these deformities is lop or cup ear, in which the helical rim is either folded over, wrinkled or tight. We describe the necessity of applying otoplasty techniques to address this problem.

Methods: A retrospective chart review analysis was performed to assess demographic variables, procedural indications and procedural outcomes in pediatric patients treated at our hospital for complex ear reconstruction for ear deformities after her surgery. Inclusion criteria were pediatric patients aged 0 to 21 years admitted to Shriners Hospital for Children-Boston from January 1, 2010 to January 1, 2021 for burn injury, who subsequently required follow-up complex ear reconstruction for ear deformities after burn injury. Of these patients, those with lop ear deformities who required construction were examined. Using the Trauma Registry of the American College of Surgeons (TRACS) and Shriners Hospital for Children Information Source (SHCIS) databases, we identified 12 eligible patients. Surgical procedure data was obtained from the SHCIS electronic medical records. Surgical photographs were obtained with patient informed consent. Those patients who required Medpor or cartilage frame reconstructions were excluded.

Results: 12 patients required an otoplasty-type procedure to obtain desired results or symmetry with the contralateral ear. This technique involved a posterior incision in the auriculomastoidmastoid sulcus, are you a year and cartilage modification with sutures to to re-create the antihelical fold an superior crus as well as conchal setback sutures.

Conclusions: Because ears are bilateral structures, symmetry is extremely poor. Because of multiple contractile forces on the external ear from secondary healing or contraction of skin grafts, the ear is often displaced anteriorly and the upper portions become folded. Treatment requires reconstruction of the natural folds of the ear and shortening of the helical rim to mastoid distance. this requires an otoplasty approach with a posterior incision,, exposure of the cartilaginous framework and modification of the cartilage with incisions and sutures. This technique however requires adequate soft tissue coverage of the ear.