

PEDIATRIC TRAUMA MANAGEMENT

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ABSTRACT

CS-067

On August 27, a 12 year old sustained significant trauma to ring and pinky fingers when the heavy lid of a commercial dumpster became dislodged. The fingers were pinned between the base and lid. The natural reaction was to pull away causing significant degloving. The initial trauma resulted in bone exposure on both fingers and a micro fracture of the distal knuckle of the pinky finger.

The patient was initially seen by an Emergency Department physician, a plastic surgeon, and an orthopedic hand surgeon. The wounds were sutured and over the course of the next month, 35 stitches were removed. The fingers were wrapped with petroleum gauze and topped with dry gauze. Followup care the following week created additional trauma when an attempt was made to remove the dressings. The petroleum gauze had dried, tightly incorporating into the wounds. Attempts to remove the petroleum gauze were not successful even after soaking for over 30 minutes in hydrogen peroxide. Parts of the petroleum gauze were cut away; however not all of the dressing could be removed.

He was seen the following week by the orthopedic surgeon. Ten sutures were removed along with additional dried petroleum gauze dressing. The process was very painful and stopped when the patient could not tolerate any more. Because patient's father was familiar with Southwest Technologies Inc., he suggested a change in the treatment plan.

On September 4, the patient was started on a combination of Stimulen® gel and Stimulen® lotion over the suture lines and the surrounding eschar that had resulted from the dry dressings. The fingers were then covered with a 4" x 4" piece of Elasto-Gel™ creatively cut into the shape of a Greek cross. Each leg of the cross was fashioned over the sides of the fingers. The four sides were gently taped into place and secured with a Finger Bob® elastic tubular bandage for digits.

Twice weekly, the wounds on both fingers were cleaned and redressed. Range of motion exercises were incorporated into the plan of care. Additional sutures were removed with each visit. On October 13, what was thought to be the final suture was removed from under the nail.

In just over 5 weeks, the wounds healed without complications. There is minimal scarring, normal sensation, and full range of motion has been restored. The atraumatic dressing changes allowed the patient to participate in care without sedation and without the emotional trauma that can occur with apprehension and fear.



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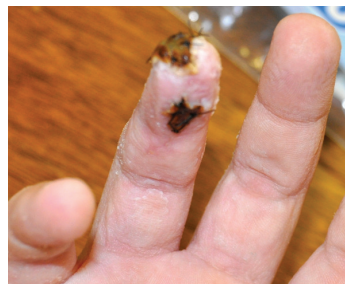
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MANAGING PAIN AND MINIMIZING FEAR IN A PEDIATRIC PATIENT



Children and adolescents deserve special consideration when it comes to wound management. It is important to remember that these patients are not just "little adults". Reasoning and logic will not be effective tools when trying to overcome fear and apprehension.

In this case study, the patient is 12 years old. The initial trauma was exquisitely painful. The original repair was managed with light sedation in the Emergency Department. The first followup visit to the orthopedic surgeon's office left a lasting, negative imprint because of the pain and trauma that was created with the attempts to remove the dry, adherent dressing. Sadly, the second visit was equally memorable because of the difficulty removing sutures from the swollen, bruised digits. When the treatment plan was changed to incorporate moist wound healing, our young patient's perception of the situation changed. The patient's perception of pain was respected; the patient was allowed some control; the patient was given a voice; and, pain was minimized.

A growing number of studies address pediatric pain. Even transient pain can have a lasting affect on a young patient. In a study published in *Pediatrics*, it was shown that timely pain management can have a lasting effect on a child's and family's reaction to current and future medical care. Another study recognized the growing recognition that even minor painful procedures, such as needle sticks, can affect a child's long term emotional well-being. Based on the growing evidence base, we all have a responsibility to assess and minimize pain whenever possible.

Both the Stimulen® and Elasto-Gel™ products used on this patient contributed to moist wound healing and reduced pain. Stimulen® helped accelerate wound healing and manage the inflammatory wound phase. Because the original trauma was a crushing injury, tissue and blood vessels were compromised. Stimulen® has been shown to heal even avascular wounds with its ability to grow new blood vessels. Elasto-Gel™ is a "smart" dressing. The glycerin-based solid hydrogel has a number of properties that are responsible for decreased pain. Glycerin is a humectant which will maintain moist healing as well as absorb mild to moderate exudate. The dressing itself is soothing and cooling upon application. Both adults and children enjoy this sensation as opposed to dressings that may be painful. Elasto-Gel™ allows for atraumatic dressing changes. It has also been proven to maintain a consistent temperature which aids in both decreased time to wound healing and decreased pain. The bacteriostatic/fungistatic properties of this dressing helps reduce bacterial counts, bioburden, and infection. Regardless of a patient's age, pain management should always be a priority. Southwest Technologies Inc. synergistic products hold the answer to pain management.

¹ *PEDIATRICS* Vol. 130 No. 5 November 1, 2012 pp. e1391 -e1405 (doi: 10.1542/peds.2012-2536)

² Walco GA. Needle pain in children: contextual factors. *Pediatrics*. 2008;122(suppl 3):S125-S129

³ *Wound Repair & Regeneration*, Nov 2014



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