A Renewal of Faith

By Trudy LeCuyer RN, Kathy Thompson RN, MBA, BSHA, CNOR and Janet Hofer RN, BSN

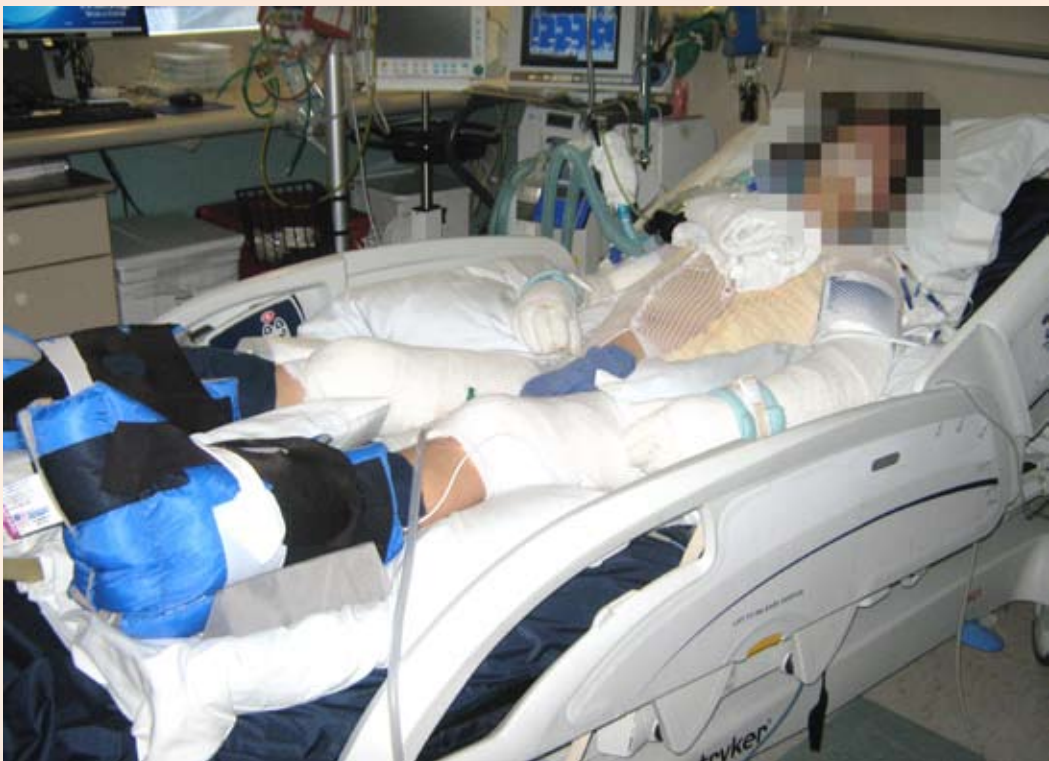
UC San Diego Medical Center is the home of the Regional Burn Center for the Greater San Diego and Imperial Valley. We stand ready to accept and treat burn victims on a moment's notice with some of the best trauma burn surgeons and nursing staff in the country. The majority of burns treated are a result of thermal exposure to high tempertures such as fire, electrical, and scalding of the skin. Burns may be caused by exposure to chemicals that are highly alkaline or acidic. The outcome from these exposures is the type and severity of trauma to the patient's skin and dermal layers. Our skin provides us with a natural shield from exposure to the environmental elements such as heat regulation, prevention of water loss, and as a protective barrier from bacterial exposure. Adjunct therapy such as fluid volume replacement, blood products, electrolyte balance, acid / base, respiratory resuscitation, etc. as well as dressings to cover the exposed tissue are the top priorities in caring for the burn patient upon admission to UC San Diego Medical Center. Once the patient has been stabilized, he or she will begin the long reconstructive process to recovery.

The first part of the reconstructive journey begins when the operating room receives a patient from the ER or the Burn Unit. Many of the patients we see in our O.R. suffer from 3rd degree burns which may affect up to 95% of their total body surface, and are compromised further by possible smoke inhalation injuries (see picture to right). We witness their arrival, often sedated and intubated with ventilatory support measures given. Their admittance is direct to the Operating Room suite where the room temperature is kept in the 80's F., the humidity around 50% to reduce the potential threat of hypothermia. The OR surgical lights and impervious sterile gowns only add to the heat felt by the staff. The circulating RN and surgical team may wear "cooling vests" during the course of the procedure just to reduce their own risk for exhaustion.

Our patients often under go numerous surgical procedures to debride the eschar and necrotic tissues. The placement of allograft skin, as a natural skin dressing, or various microbial dressings and wound vacs are applied to cover the exposed tissues while waiting for the opportune time to perform the autologous skin graft. The OR nurses assist the surgeons with providing the necessary medications used for hemostasis, antibacterial solutions, and topical vasoconstrictors to reduce surface bleeding. Our nurses support the anesthesiologist with ordering and obtaining red blood cells and plasma, albumin and crystalloid products for replacement of fluid loss during the course of the procedure.

Trudy LeCuyer RN, is the Clinical Nurse Specialist for Burn Surgery. She has been at UC San Diego since 1985. Her other clinical interests include orienting medical students to the Operating Room and serving as the GYN Service Clinical Specialist.

Trudy LeCuyer RN, has been the operating room's lead burn nurse for the past 15 years. She has provided care for hundreds of burn patients during her career, and has not only witnessed, yet participated in the evolution of burn treatments. In the 1970's, burn patients suffering greater than 60% body burn had little chance of survival; now the success rate is significantly higher. During that time, the initial treatment of choice was the application of creams, ointments, Scarlet Red, and observation to determine whether or not the patient would be brought to the O.R. for debridement. Many patients



were submerged into baths in hope that the affected skin would slough off. Conversely today, early, aggressive surgical intervention is the treatment of choice. As mentioned, patients are scheduled repeatedly for surgical excision procedures and multiple applications of allograft cadaver skin or porcine until the site is considered clean enough and prepared for autografting.

Bleeding is always a grave concern for all burn patients. Blood and fluid loss must be managed accurately in order to maintain the patient's temperature and hemodynamic stability. As noted by Trudy while little was done in the past to counteract these complications, there are several avenues of treatment available to us today. Tumescence is one option, involving the injection of fluid combined with a small dose of vasoconstrictor at either the burn site or the split thickness skin graft site. This provides a synergistic affect that reduces bleeding by physical and chemical means. In combination with, or as an alternative to this therapy, the use of topical Thrombin, a powerful coagulant, may be used. This medication is applied as a fine mist spray directly to the bleeding area, and then covered with a moistened Telfa dressing. The Telfa dressing prevents disruption of the clot that is intended to form, in order to control the bleeding. For larger areas requiring debridement, lap pads soaked in a saline/vasoconstrictor solution work to slow down the bleeding in preparation for the Telfa Treatment.

Anesthesia plays a critical role in assessing the patient blood volume replacement needs. The best practice is now considered to be to replace lost volume with actual blood constituents in lieu of the formerly common crystalloid, Albumin and Hetastarch treatments. Tumescence, combined with replacement therapy poses the risk of placing a patient into fluid overload leading to possible renal complications, hence the required monitoring of the patient's electrolytes, acid base balance, oxygen saturation levels and core temperatures. In spite of the fact that the O.R. temperature is raised to 80 degrees, the patients are always at great risk for hypothermia. To diminish this complication we supplement body warmth, utilizing measures such as Baer huggers, a warm air blanket, and the traditional fluid warming blankets, in addition to keeping the patient covered and limiting exposure whenever possible.

Dressing care has become an art form. There are multiple choices available to surgeons depending on the severity of the burn and their personal preferences. The majority of them contain antibiotic properties. Some of the relatively common treatments include Sulfamylon soaked dressings, Xeroform with Polysporin Ointment, and Acticoat.

Treating these patients is not only physically, but emotionally challenging. We will be seeing these patients enter the OR for months, never making contact or getting to know them. Then the day arrives and the patient is no longer sedated or intubated. Their eyes are open and they track us. The beginning of our psycho-social relationship begins. Sometimes we have the opportunity to meet their family. Trudy makes a point not to ask them what happened. Her belief is that the family has already gone over the burn incident several times, explaining to loved ones, friends, and the doctors and wondering what other steps or measures should have been taken to prevent this tragic accident. Trudy tries to offer a calm reassuring environment providing the patient and family with a nurse who makes them feel comfortable and safe, knowing their loved one will be cared for. Trudy enjoys offering "distraction" games for the children that will include all members of the surgical team, and family while they are waiting to be transported into the operating room. The diversion offers a simple moment of escape. Trudy and team manage to find ways to involve the family with the care of their loved ones and comfort them in their stressful time of need. Our operating room nurses deal with their own emotions as well as they contemplate some of the circumstances that bring our patients to us: small children who have been intentionally (as a form of punishment) or inadvertently scalded, patients with burned limbs resulting from falls into a fire ring, and innocent victims suffering at the expense of freak accidents or fires. Every scenario has a story behind it, and we care for each of our patients regardless of their circumstances. We function as teachers and resource specialists for them and their families as we encourage, listen, and offer support during this critical part of their experience.

On occasion a patient, discharge to rehabilitation and home, returns to visit Trudy and the nursing staff. Trudy vividly remembers the little two-year old, burned from her feet to waist, stopping by one day. Trudy was fearful the child would never be able to walk after her burn injury. Much to her delight she saw the little girl go from a "cocoon" to a bright butterfly of a little girl, dancing and running around the hallways. She demonstrated no fear as she offered hugs and kisses to Trudy and her OR nursing staff. A surge of happiness and faith in humanity spurs the team with the emotional support to carry on, to realize they do make a difference in life. And offer the promise of hope for the future.

As the clinical expert in the OR, Trudy pulls from her vast wealth of experience to mentor others in the latest and best practice in burn care, as well as the preferred techniques of our physicians. She has attended specialty seminars and shares that information with the staff. She works in tandem with the nurses on the Burn Unit to ensure continuity of care. Trudy, in conjunction with the other nursing members of our surgical team, exemplifies the qualities we embrace as an organization to care for our patients.