Burn Care
Carrie Wilson, RN, CPNP-PC, CPNP-AC, WCC
Washington University / St. Louis Children’s Hospital
St. Louis, MO

Disclosure Information

There were no financial interests or relationships or conflicts of interest to disclose for any of the Burn Care roundtable moderators.

Objectives

1) Describe different techniques used to assess burn size and depth of pediatric burn patients after stabilization.

2) Describe appropriate cleansing and debridement techniques of pediatric burn injuries and utilization of ancillary services (i.e. pain control, sedation, child life, therapy) for these procedures

3) Describe current topical treatment/dressings for pediatric burns that offer the best wound coverage and infection control.
**Burn Incidence**

- Burn injuries that require medical treatment annually: 450,000 per year.
- Burn injuries requiring hospitalization total approximately 40,000 per year.
- 60% of these patients are admitted to one of the 128 specialized burn centers in the United States.

**Multidisciplinary Approach**

- 3 Core FT RNs (Increasing)
- PT/OT
- FT Nurse clinician
- Child Life
- FT PNP
- Nutrition
- Cross-trained 10th floor nurses
- Pharmacy
- Program Assistant
- Physicians
- Hospitalist
- CPT
- Cross-trained 10th floor nurses
- Social Work

**Lund/Browder Rule of 9**
Pathophysiology: 3 Zones of Injury

(1) zone of coagulation
(2) zone of stasis
(3) zone of hyperemia

Classification

• Superficial
• Superficial partial thickness
• Deep partial thickness
• Full thickness

Size of the Burn

• Calculating Total Body Surface Area (TBSA)
• Lund Browder calculation performed at Burn dressing change
• Partial to Full thickness burns only
• Pediatrics have disproportioned body type
• Patients Palm + Fingers = 1% TBSA
Depth of the Burn

First Degree Burn

- Superficial
- Painful
- No blistering
- Pink; red
- Mild edema
- Blanches with pressure

Partial Thickness (2nd degree)

- Pink to red
- Moist
- Moderate edema
- Extremely painful
- Vesicles
Partial Thickness

Superficial Partial vs. Deep Partial Thickness Burns
Hand Burn-Deep Partial Thickness

- Waxy-white to black
- Dry leathery
- Thrombosed vessels
- Edema
- Painless
- Doesn’t blanch with pressure

Full Thickness (3rd Degree)

- Waxy-white to black
- Dry leathery
- Thrombosed vessels
- Edema
- Painless
- Doesn’t blanch with pressure

Types of Burn Injury

- Thermal
- Electrical
- Chemical
  - Various treatment modalities for each
Partial vs. Full Thickness

Flame Burn

Debridement

- Manual
- Sharps Debridement
  - Consent
    - Including Iris scissors and/or Curette
Pre-Debridement

Post-Debridement

Calculating TBSA

- Partial to full thickness burns only
- Patients Palm + Fingers = 1%
- Lund-Browder chart
Typical Dressing Change

Make child comfortable (Child Life)
Provide sedation if needed/Administer pain meds according to institution
Transition to treatment room
Rally the troops
Consent, Timeout, Sedate

Radiant warmer on
Remove old dressing (note any cellulitis, foul-smelling drainage, s/s infection)
Assess wound
Debride (manually or with sharps)
Debride blisters over joints
Gentle cleansing (if burn is already post-debridement, with soap and water)
Provide education
Document
Typical Dressing Change

- Measure/estimate burn size using Lund-Browder, document %
- Picture (according to institution policy)
- Range of Motion with PT/OT at bedside with dressings off while sedated (is optimal)
- Implement dressing
- Schedule f/u

Tub Time

PAWS-Experienced Wound Care
Taking the "Ouch" Out

- Nitrous
- Ketamine
- Versed
- Tylenol
- Oxycodone
- Percocet

Most Common Dressings

- Silvadene Cream
  - Antimicrobial Cream
  - Apply 1-2 per day
  - Easy to Apply
  - Leaves a film on wound requiring cleansing
  - Easy to Apply
  - Leaves a film on wound requiring cleansing
Silver Impregnated Foam Dressings

- Foam dressing impregnated with Silver
- Silver helps fight infection
- Easy removal
- Absorbant
- Compresses
- May leave on several days
Foam Dressing

- Foam dressing
- Silicone contact layer
- No pain or trauma upon removal
- Waterproof outer layer

Silver Impregnated Dressing (Aquacel AG)

- Silver impregnated dressing
- Feels like felt
- Absorbs exudate and forms a gel
- Fills the wound and traps the bacteria

Silver Impregnated Dressing
Silver Impregnated Rope Dressing

Antibiotic Ointment

Xeroform

- Petroleum based dressing
- Antimicrobial
- Protective dressing
Ace wrap

Complicated Burns

Escharotomy
Small intestine submucosa (SIS)
Reduces the likelihood of patient rejection due to its natural acellular yet intact extracellular matrix composition.
Muffler Burn

Muffler Burn post debridement

Pre and Post STSG
STSG

Donor Site s/p STSG

Physical and/or Occupational Therapy
When to Refer to a Burn Center

1. Partial thickness burns greater than 10% total body surface area (TBSA).
2. Burns that involve the face, hands, feet, genitalia, perineum, or major joints.
3. Third degree burns in any age group.
4. Electrical burns, including lightning injury.
5. Chemical burns.
6. Inhalation injury.
7. Burn injury in patients with preexisting medical disorders that could complicate management, prolong recovery, or affect mortality.
8. Any patient with burns and concomitant trauma (such as fractures) in which the burn injury poses the greatest risk of morbidity or mortality. In such cases, if the trauma poses the greater immediate risk, the patient may be initially stabilized in a trauma center before being transferred to a burn unit. Physician judgment will be necessary in such situations and should be in concert with the regional medical control plan and triage protocols.
9. Burned children in hospitals without qualified personnel or equipment for the care of children.
10. Burn injury in patients who will require special social, emotional, or rehabilitative intervention.

(ABA, 2018)
References


Thank you!