EB MEDICINE: RISK MANAGEMENT PITFALLS

The Management of Pediatric Patients with Burns

Risk Management Pitfalls

EB MEDICINE

www.ebmedicine.net

ebm@ebmedicine.net

1.800.249.5770

Scroll for your free pitfalls



1. "I saw a patient who was in a house fire, and he was breathing fine when I first examined him. I don't know why he suddenly got worse."

Patients presenting from fires that have occurred in closed spaces are at higher risk for inhalation injury. Early normal voice and oxygen saturation levels may not adequately predict a patient's true airway status. In fact, oxygen saturation may be spuriously high from concomitant carbon monoxide poisoning. While there is currently a move toward avoidance of unnecessary pediatric intubations, any suspicion of airway involvement should prompt careful evaluation. Clinicians should look for carbonaceous sputum, soot in the nares, or damage to the oropharynx. Patients with signs of inhalation injury should be considered for early intubation due to potential respiratory failure from airway edema and obstruction.

2. "I gave the patient silver sulfadiazine for postburn care because I didn't know that some topical burn treatments can't be used on the face. I had no idea that it could cause permanent pigment changes to the skin."

Facial burns, particularly in patients with darker skin tones, should not be treated with silver sulfadiazine cream due to the bleaching effect that this compound can have on the skin. For facial burns, bacitracin or other nonsilver occlusive dressings may be applied to achieve the best cosmetic outcome.

3. "The burn was really small, and I didn't know that patients with genitourinary burns needed to be referred to a burn center."

Most small, superficial, or partial-thickness burns do not require referral to a burn center. However, wounds to select anatomical regions are at increased risk for complications, and they are independent criteria for possible referral to a verified burn center. These areas include the hands, feet, face, genitals, perineum, and major joints.

4. "It seemed strange that the burn was on the child's back and a spilling mechanism of injury didn't seem to make sense, since the child is developmentally delayed and in a wheelchair. It also seemed odd that his mother waited a day to come to the ED for treatment. Even so, the burn was minor, and the child was current on his tetanus immunization, so I performed local wound care and sent the patient home."

This child is at high risk for nonaccidental trauma, and child protective services should be notified. The child cannot be discharged home until a safe environment can be verified. Risk factors for nonaccidental trauma include male sex, developmental delay, wound site inconsistent with the history given, and delayed presentation for care.







5. "I thought that every burn needed oral antibiotic prophylaxis, especially burns on the hands and feet, but my patient had a bad reaction to the antibiotics and now my colleagues say that I should never have given her antibiotics in the first place!"

In burns, prophylactic systemic antibiotics are not indicated. Topical antibiotics are useful, but oral or IV antibiotics are only indicated if the patient has signs of bacterial super-infection.

6. "I have a severely burned patient who is in shock, and I gave her fluids at 3 mL/kg/%TBSA, but she is still hypotensive. Now the intensivist is saying that the patient needed fluid much faster and possibly a blood transfusion."

The ATLS® recommendations and other formulas calculate 24-hour fluid needs in burn victims, but patients presenting in shock require trauma management, including fluid boluses up to 60 mL/kg (in 20-mL/kg aliquots), consideration of blood transfusion, and consideration of vasopressor support for fluid-resistant shock. Using the ATLS® or other formulas for hourly fluid calculation for a patient in shock will typically not provide adequate fluid resuscitation.

7. "My patient had a small, partial-thickness burn to the arm, and was able to be discharged safely. She returned to the ED a week later, and had not been using the mafenide acetate or the hydrocolloid dressing."

There is a large discrepancy in cost when it comes to topical and dressing care. Bacitracin and silver sulfadiazine are both low-cost options, and dressings can be as simple as nonstick gauze. Always be attuned to the patient's financial and social concerns regarding ability to follow up and manage burn care. Partial-thickness and full-thickness burns can require long-term care, and patients without insurance or means may need to be referred to a social worker to accommodate the cost of care.

8. "The patient took 4 hours to get transferred to me, and I calculated the fluid requirement, but now the burn intensive care unit team is saying that I didn't give the patient fluids fast enough."

When using the various formulas to calculate the amount of fluid resuscitation required, a 24-hour fluid requirement is determined. The first half of the fluids should be given in the first 8 hours from the time of injury. If there is delay in initiating fluid resuscitation, then this must be taken into account.







9. "I saw a 3-month-old patient with a burn. I didn't know that the patient needed tetanus immune globulin."

Burns are deemed to be unclean wounds, and thereby require tetanus prophylaxis, if the patient has not had a tetanus vaccine in the last 5 years. Special consideration must be given to children aged < 6 months, as these patients will not have had their 3 total tetanus toxoid-containing vaccines yet, if they are following the immunization schedule recommended by the United States Centers for Disease Control and Prevention. Any patient who has not had the base level of 3 tetanus toxoid vaccines requires acute treatment with both the vaccine and tetanus immune globulin.

10. "I have a patient who has 10% TBSA superficial burns, 7% TBSA partialthickness burns, and 4% TBSA full-thickness burns, totaling 21% TBSA burned. I called the burn center to transfer the patient, and I calculated the fluids for resuscitation. They accepted the transfer, but told me to recalculate the TBSA affected."

Superficial burns are not included in calculation of the percentage of TBSA affected by burns; only partial-thickness and full-thickness burns are included. This estimate should be calculated as accurately as possible, as it will determine fluid volume for resuscitation and will help determine a patient's appropriate disposition for definitive care.





