

**District III EMS  
Quality & Improvement  
“Case of the Month - December 2004”**

*This month’s case involves a severely burned patient at a structure fire. The case is presented to emphasize the importance of early notification to the Emergency Department when caring for critically injured patients, and the evaluation of the burn victim. If you have any questions or comments, please feel free to contact me at [Daniel.Wolfson@vtmednet.org](mailto:Daniel.Wolfson@vtmednet.org)*

**Chief Complaint: Burns**

**Pre-hospital course:**

2245 Hours: A BLS crew arrives on scene of a structure fire and is immediately notified by bystanders that there is a badly burned victim out front. The crew finds a middle-aged man CAOX3 who had been burned on his face and right side of his body. The crew notes that the patient was ambulatory, with visible burns to his forehead and right hand and arm, with skin peeling off. Oxygen was administered by NRB at 15 l/m, and the pt was transported to the FAHC ED.

2252 Hours: Crew departs scene, and notifies FAHC Emergency Department that they are bringing in a burn victim with approximately 18% body surface area burns to the face, hair (head), and arms with peeling skin, 2nd degree.

2253: Crew arrives at ED. (Note the one minute advance notice)

**Emergency Department Course:**

Upon arrival in the Emergency Department the patient was immediately noted to have severe 3rd degree full thickness burns to the face and head, including burns about his mouth and nose and singed nasal hairs. A trauma alert was called. IV access was established and the patient was prophylactically intubated. During the intubation the patient was noted to have mild laryngeal swelling and carbonaceous sputum within the airway. LR fluid bolus was administered along with pain medication and tetanus vaccine and care of the patient was assumed by the trauma service.

**Quality Improvement:**

Burn victims often have associated inhalation injuries from breathing the super-heated air of a contained fire environment. These individuals need immediate intubation, before laryngeal swelling makes this task impossible. The patient in this case arrived without any obvious respiratory distress, however he had numerous signs indicating the potential for a severe inhalation injury including facial burns, singed nasal hairs, carbonaceous sputum, and burns occurring in a closed space fire environment. Although no adverse outcome occurred, the intubation of this patient was delayed as the trauma alert was not paged until the patient's arrival in the ED. Had the alert been called from the field, the trauma team could have been assembled and the patient could have been intubated immediately upon arrival. It would have been appropriate to notify the ED at the time of the initial patient encounter that a severely injured burn victim was en-route with probable inhalation injury.

It can be difficult to assess the degree of burns a victim has sustained. Burns are classified as superficial partial-thickness, deep partial-thickness or full thickness. In superficial partial-thickness burns there is blistering of the skin and the exposed dermis is red and moist at the blister's base. These burns are very painful to touch. In deep partial-thickness burns the skin may be blistered and the exposed dermis is pale white to yellow in color. The burned area does not blanch; it has absent capillary refill and absent pain sensation. Deep partial-thickness burns may be difficult to distinguish from full-thickness burns. Full-thickness burns involve the entire thickness of the skin. All epidermal and dermal structures are destroyed. The skin is charred, pale, painless, and leathery. These injuries will not heal spontaneously and surgical repair and grafting are necessary.

**Take Home Message:** Notify the Emergency Department as early as possible when transporting a severely injured patient, so that the receiving team can be ready upon the patient's arrival. In the burn victim, look for signs of inhalation injury: Facial burns, carbonaceous sputum, pharyngeal injection, wheezing, hoarseness, or singed nasal hairs. These patients will need early intubation before airway obstruction occurs.