

## PARAMEDIC TIP SHEET #9: *Chest Wall Escharotomy*

### Indications for Chest Wall Escharotomy

When severe burns to the chest wall (particular circumferential burns) are experienced and accompanied by severe soft-tissue edema, adequate chest wall excursion and ventilatory ability may be seriously impaired. Indications for chest wall escharotomy exist when the significant full (or possibly partial) thickness, circumferential burns to the chest wall are accompanied by significant soft tissue edema resulting in:

- ◆ **Inability to maintain adequate tidal volume even with positive pressure ventilation**
- ◆ **Inability to obtain adequate chest expansion with positive pressure ventilation**

One must rule out the possibility of upper airway obstruction as a possible cause of ventilatory difficulty before proceeding to escharotomy. Upper airway obstruction resulting in laryngeal edema may require intubation or cricothyrotomy.

### Background

As the skin and underlying soft tissue becomes severely burned, fluid is lost. This loss of fluid within the skin and tissue results in decreased elasticity of the skin. The underlying soft tissue becomes edematous resulting in increased pressure beneath the skin. This increased pressure (edema) may impede the expansion ability of the chest wall. It should be understood that severe burns to the chest alone do not necessarily require an escharotomy. Escharotomy of the chest wall is rarely needed. However, this procedure may be life saving in the patient who can not be adequately ventilated due to limited chest wall expansion.

### Methods

*The following chest wall escharotomy method assumes that initial care of the patient has already begun. There are a variety of incision methods for chest wall escharotomy. The following are examples only.*

1. Continue to attempt positive pressure ventilation. Intubate, if this has not already been done.
2. Using a sterile scalpel, perform shallow incisions through the cutaneous layer of the skin only. One vertical incision is made in the anterior axillary line just below the level of the armpit. A second vertical incision is made in the same manner on the opposite side of the anterior chest wall. Once the incision is made, the skin should readily “split open” if the pressure from soft-tissue edema is significant.
3. Many sources also recommend a horizontal incision. One possible location is from the top of one vertical incision to the top of the other incision. Others recommend a horizontal incision across the lower border of the chest (near the diaphragm). The horizontal incision does not have to connect the two vertical incisions.
4. Local practice, training and medical direction should dictate the locations of incisions.
5. Immediately reassess to determine whether ventilatory ability has improved.

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**PARAMEDIC TIP SHEET #9:**  
***Chest Wall Escharotomy (continued)***

6. Cover the chest wall with sterile dressings (Most likely dry dressings since circumferential burns to the chest will likely exceed 10% BSA)
7. Continue with fluid therapy and pain management.
8. If AT ALL POSSIBLE, patients requiring a chest wall escharotomy SHOULD BE TRANSPORTED TO A BURN CENTER or, if unavailable, a major trauma center

**Tips**

- ◆ Obtain medical control authorization before attempting this procedure
- ◆ Consider upper airway obstruction and the need for intubation or cricothyrotomy BEFORE considering chest wall escharotomy.
- ◆ Attempt to keep the areas of incision as clean and sterile as possible.