



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Facial, Hearing, and Visual Injuries Airway Management in Severe Combat Maxillofacial Trauma

Airway stabilization is critical in combat maxillofacial injury as normal anatomical landmarks can be obscured. The objective of this retrospective database analysis was to characterize the epidemiology of airway management in maxillofacial trauma from military treatment facilities in Iraq and Afghanistan and stateside tertiary care centers. In total, 1,345 military personnel with combat-related maxillofacial injuries sustained March 2004 to August 2010 were identified from the EMED using International Classification of Diseases, 9th Revision, Clinical Modification codes. This tri-Service capability, resident at the NHRC, documents each casualty that occurs in overseas contingency operations within seven days of injury. The injuries contained in the EMED are coded with diagnoses and ISSs by trained nurse coders. A total of 239 severe maxillofacial injuries were identified. The most common mechanism of injury was improvised explosive devices (66 percent), followed by gunshot wounds (8 percent), mortars (5 percent), and landmines (4 percent). Of the subjects, 51.4 percent required intubation on their initial presentation. Of tracheostomies, 30.4 percent were performed on initial presentation. Of those who underwent bronchoscopy, 65.2 percent had airway inhalation injury. There was a significant relationship between the presence of head and neck burn and association with airway inhalation injury. There was also a significant relationship between the severity of facial injury and the need for intubation, as well as the presence of maxillofacial fracture and the need for tracheostomy. This unique study is a collaboration between Medical Modeling, Simulation & Mission Support (Department 161) NHRC and NMCSO. Results from this work highlight the important point that there is a high incidence of airway injury in combat maxillofacial trauma, which may be underestimated. Because of this, it is important for healthcare providers to assess this as part of maxillofacial trauma cases. This indicates that airway management in this population requires a high degree of suspicion and low threshold for airway stabilization.