Prehospital Battlefield Casualty Intervention Decision Cognitive Study: Cut the Neck!
Deciding When to Perform the Inevitable Battlefield Surgical Airway

Background: Airway compromise is currently the 2nd most common cause of battlefield preventable death. Correction of airway compromise and placement of a definitive airway is widely recognized as a mainstay in preventing hypoxia, a contributor to acidosis in the lethal triad. Placing surgical cric at the end of the other airway maneuvers is akin to previous thought processes about tourniquet use as a last resort only after field and pressure dressings failed. Oxygenation should be viewed in the same light as loss of blood, the sooner that problem can be corrected the better. Significant facial trauma is just one condition that might require prehospital surgical airway management. Tactical Combat Casualty Care Course teaches trauma didactics and specific psychomotor skills training for various life-saving interventions (TQ, airway, needle-D). While the psychomotor is easy to test, the cognitive is much more challenging to evaluate. The goal of this study is to identify prehospital provider’s lifesaving intervention priorities using a combat video of significant facial trauma due to blast. The authors of this study also seek to establish if there remains a cognitive barrier to SC, reasons why barriers may exist, and whether barriers differ based on levels and types of medical training.

Methods: Prehospital providers attending a large EMS Conference (EMS World Expo, Texas EMS Conference) were recruited to participate in an electronic survey. Subjects self-identified his/her level of training, experience with combat care and various lifesaving interventions. They then viewed segments of a combat video of a person immediately after sustaining a blast-injury requiring lifesaving intervention. Participants then answered questions about the procedures they deem necessary and why. Descriptive statistics were used for all demographic information, airway procedures were categorized by airway/non-airway management and Fisher Exact test will be used to compare categorical data.

Results: During the two large EMS conferences, 242 subjects were recruited to and completed the survey. Those self-identifying as Paramedic, AEMT, EMT, Nurse or physician were 57% (n=139), 7% (n=17), 29% (n=69), 4% (n=9), and 3% (n=8), respectively. 19% of the respondents had previously viewed the video footage. Respondents having previously attended TCCC or TECC, 70% would have performed an immediate airway intervention, and 77% without completion of one of these courses 77% would have performed airway intervention (p=0.31). There was no difference between paramedic or EMT as to performance of a basic airway procedure (65% vs 61%, p=0.51), or advanced airway (28% vs 20%, p=0.37). More paramedics indicated the need to perform surgical cricothyrotomy (17% vs 6% p=0.03) than did EMT basics. Nurses and Physicians were equally likely to perform surgical cricothyrotomy as paramedic.

Conclusion: Surgical airway management was only indicated as necessary by a quarter of advanced civilian providers given a scenario of a patient with significant facial trauma secondary to a blast injury. Likelihood of surgical intervention did not change if the provider had attended TCCC or TECC. The military collection arm indicated over 2/3 would perform surgical cric across all skill levels with 40% of respondents completing TCCC/TECC training.