

TOURNIQUETS:

A paramedic's tale of two treatment modalities

Like many whose career track and passion are in emergency medicine, the seasoned paramedic in this story leads a double life. As a Tactical Medic serving in the Special Operations Division of his State Police Department, he is no stranger to strategies that increase survivability in the tactical arena. However, his dual role as an Aeromedic often commandeers his skills into more mainstream civilian EMS scenarios. Who could have foreseen the impact this duality would have had on a near-fatal car crash one October night in 2006.

Our story begins as this 25-year veteran paramedic serving in the role of Aeromedical provider was dispatched to a motor vehicle collision involving an entrapment that lasted in excess of 30 minutes. The victim was a 52-year old male who had collided with a large truck and a street sign. The sign had sliced through the passenger compartment causing a near amputation of the patient's left leg just distal to the knee. Serious chest injuries and major arterial bleeding from the entrapped leg became increasingly more life-threatening. As Aeromedical arrived on scene he joined his partners on the ground only to find repeated attempts to control the bleeding via dressings, direct pressure and even a makeshift tourniquet fashioned from a BP cuff to be unsuccessful.

With critical time ticking away, the Aeromedic quickly shifted to his experience as a tactical medic. The parallels were really quite remarkable: penetrating trauma with exsanguinating hemorrhage, delayed evacuation time, low light conditions and limited operational space. Along with his regular EMS kit, he instinctively carried a C-A-T® tourniquet, standard issue from his tactical medical gear. Despite the entrapment of the victim's leg and no access to the foot, he was able to quickly apply the C-A-T® and effectively control the bleeding. Soon afterward he was able to focus his efforts on treating the chest injuries and assisting in the delayed extrication. The C-A-T® was left in place until the victim reached the O.R. at the attending Trauma Center.

In spite of differing opinions in many EMS circles, tourniquet use is re-emerging as an optimal and legitimate procedure in pre-hospital emergency trauma care. Since 1996, statistics on battlefield wounding patterns have driven medical training and equipment developed in the military arena. These protocols address the leading causes of preventable death in combat, 60% of which is identified as uncontrolled extremity hemorrhage. Likewise, tactical law enforcement has begun to recognize the same realities as they pertain to their own operational arena.

Real-time data streaming from the Global War on Terror (GWOT) continues to prove that the windlass tourniquet is responsible for saving more lives of today's service members than any other piece of medical equipment. This conclusion is recognized by the U.S. Army in the issuance of the C-A-T® tourniquet to every active soldier, medical and non-medical alike.

As evidenced by this paramedic's tale of two treatment modalities, the same austere conditions and the necessity of tourniquet use may likely be encountered in a trauma scenario near you. Consider the lessons learned. Connect the dots... and realize that the next life you need to save may depend on it.

The US Army Institute of Surgical Research (USAISR) conducted several evaluations of commercial tourniquet devices. The final evaluation identified three devices that were 100% effective. From this evaluation, the US Army selected the C-A-T® as the primary pre-hospital tourniquet. Numerous studies and combat after action reports from the current war theaters validate that organizational decision.

The committee also listed an additional **Five Desirable Features** in Tourniquet design:



- 1. Wider is Better**
Not less than 1 inch wide
- 2. Self Application**
One-handed self-application to an upper extremity
- 3. Open-ended Design**
Capability of being applied to entrapped limbs
- 4. Torque Control**
Protection from over-tightening
- 5. Low Cost**
Large-Scale production cost of \$25

WOUNDSTAT™ (HEMOSTATIC AGENT)

- Recently found to be the most effective hemostatic product available according to a recent study conducted by the US Army Institute of Surgical Research
- Novel mineral-based, granular formulation that allows the user to "mold" it to conform to the wound
- Contents: 5.5 ozs.

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