Analysis of recovered tourniquets from casualties of Operation Enduring Freedom and Operation New Dawn.


BACKGROUND: Tourniquet use recently became common in war, but knowledge gaps remain regarding analysis of recovered devices. The purpose of this study was to analyze tourniquets to identify opportunities for improved training.

METHODS: We analyzed tourniquets recovered from deceased service members serving in support of recent combat operations by a team at Dover Air Force Base from 2010 to 2012. Device makes and models, breakage, deformation, band routing, and windlass turn numbers were counted.

RESULTS: We recovered 824 tourniquets; 390 were used in care and 434 were carried unused. Most tourniquets were recommended by the Committee on Tactical Combat Casualty Care (Combat Application Tourniquet [CAT] or Special Operations Forces Tactical Tourniquet). The band was routed once through the buckle in 37% of used CATs, twice in 62%, and 1% had none. For tourniquets with data, the windlass turn number averaged 3.2 (range, 0-9). The CAT windlass turn number was associated positively with tourniquet deformation as moderate or severe deformation began at 2 turns, increased in likelihood stepwise with each turn, and became omnipresent at 7 or more.

CONCLUSIONS: Tourniquet counts, band routings, windlass turn numbers, and deformation rates are candidate topics for instructors to refine training.