NCTTRAC – Stop the Bleed Coalition Position Statement on "Improvised Tourniquets"

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Background

Uncontrolled bleeding is the most common cause of potentially preventable death in trauma patients. The Stop the Bleed campaign empowers the public as immediate responders to recognize and to stop life-threatening bleeding with compression via direct pressure, wound packing, and/or application of a tourniquet approved by the Committee on Tactical Combat Casualty Care. Improvised tourniquets have long been a mainstay of first aid, trauma care, and other curricula, the American College of Surgeons (ACS) Committee on Trauma, however, advises that current science no longer supports use of such improvised tourniquets[1]. Studies show that they require more time to devise and apply, are less effective than approved tourniquets[2, 3, 4, 5], and can increase bleeding[4, 5].

Consequences

Improvised tourniquets, even those with a windlass rod[6], are often unable to stop venous or arterial flow of blood due, in part, to the insufficient circumferential compression[4, 5] and can lead to a continued blood loss or a paradoxical increase in bleeding[4]. This, in turn, can lead to an increased pressure in the limb, potentially causing compartment syndrome[4, 5]. Such improvised devices may also result in tissue damage[5].

Findings

Studies comparing approved tourniquets and improvised tourniquets, showed improvised tourniquets to be inferior in effectiveness[3, 4], pulse cessation[3], and time of application[3]. For example, a study conducted by Lyles et al. detailed the following results:

Tourniquet Type	Effectiveness	Pulse Cessation	Mean Time of Application
CAT†	100%	100%	25 seconds
Bandage	40%	45%	196 seconds
Bandana	20%	10%	178 seconds

Recommendation

The North Central Texas Trauma Regional Advisory Council – Stop the Bleed Coalition recommends that education on improvised tourniquets be omitted. Bleeding control education must adhere to the ACS evidence-based curriculum, emphasizing the use of direct pressure and wound packing if an approved or appropriately sized tourniquet is not immediately available, regardless of age (adult or pediatric).

†Combat Application Tourniquet (North American Rescue).

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