



US DEPARTMENT OF DEFENSE

BLAST INJURY RESEARCH PROGRAM COORDINATING OFFICE

Hemorrhage Control and Resuscitation

Emerging Technologies for Hemorrhage Control Using a Porcine Model of Combined Pelvic and Vascular Injury

Non-compressible truncal hemorrhage (NCTH) accounts for approximately 24 percent of potentially survivable battlefield hemorrhage mortality cases. One of the major contributors to NCTH is major pelvic fracture with concomitant pelvic vascular injury. Currently, there is no universally accepted means of controlling hemorrhage associated with pelvic vascular injuries and pelvic fractures. Several emerging technologies (e.g., a laparoscopic balloon dissector and self-expanding foam) are showing promise as are recent evaluation of more traditional methods of hemorrhage control.

Researchers at Madigan Army Medical Center (Tacoma, WA) are conducting a study to develop a pig model of combined pelvic and vascular injury and then test the ability of these interventions to arrest pelvic bleeding and stabilize hemodynamics. The study was recently presented at several conferences discussing potential minimally invasive treatment options, such as preperitoneal balloon tamponades and an abdominal aortic junctional tourniquet for pelvic fracture-associated hemorrhage in disaster scenarios.

The use of a laparoscopic balloon dissector (e.g., REBOA) and/or injectable self-expanding foam will allow forward surgical units to better and more safely stabilize casualties with life-threatening pelvic hemorrhage.

This effort was managed by CDMRP with support and program oversight by CCCR/JPC-6.

