Casualty Care Improvised Direct Pressure Adjunct

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Uncontrolled hemorrhage is the leading cause of preventable death on the battlefield, and the mortality rate for junctional hemorrhage in the field is exceptionally high. Researching this problem has led to the development of an Improvised Direct Pressure Adjunct (IDPA) to be compared to other external pressure devices. Its efficacy was evaluated through measurements captured by a Force Sensitive Resistor (FSR) that read the amount of force delivered to a manikin. Tactile Pressure Sensor Indicating Film was also used to get a clear image of the area the IDPA can target. The IDPA was able to apply sustained significant and sustained pressure to the inguinal area leading to the conclusion that if the IDPA is properly positioned over the severed iliac or femoral artery, it may augment clot formation, significantly reduce blood loss, and allow the medic to perform other life saving interventions. A TOMManikin test and Doppler analysis also confirmed successful occlusion of the femoral artery. Devices currently available to address junctional hemorrhage are large, expensive, and difficult to use. Data gathered from the tests support that the compact design of the IDPA is successful in providing significant pressure to occlude the iliac/femoral artery and control junctional hemorrhage in conjunction with hemostatic battle dressings and proper wound packing protocol.

Awards Won: