Implications of new dry fibrin sealant technology for trauma surgery.

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Abstract:

Trauma patients have been bleeding to death for thousands of years. The methods used to control hemorrhage (tourniquets, pressure, bandages, and ligatures) have not changed for 2000 years. Technology now exists to amplify the normal clotting system with human proteins, thus providing almost instant hemorrhage control in the face of bleeding. The increasing body of clinical and animal research and safety data regarding new fibrin sealant technologies is compelling. When combined with the evolving concepts of extended trauma resuscitation, acceptance of this technology will finally add a new method of rapid, easy hemostasis to the armamentarium of the surgeon faced with an unstable hemorrhaging patient. Several important issues remain unresolved, such as optimal thrombin and fibrinogen content, amount of material required for hemostasis, long-term effects, distribution of breakdown products, and role of recombinant proteins. These issues are under active investigation. Despite these unanswered questions, the field of absorbable, off-the-shelf, rapdly active hemostatic agents that do not require refrigeration is an exciting area that should yield significant improvements in the case of injured patients.