Fibrin glue: A review of its preparation, efficacy, and adverse effects as a topical hemostat.

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Abstract:

Fibrin glue is composed of two separate solutions of fibrinogen and thrombin. When mixed together, these agents mimic the last stages of the clotting cascade to form a fibrin clot. Fibrin glue is available in Europe but is not commercially available in the U.S.; therefore, investigators have extemporaneously compounded their own fibrin glue. Fibrinogen can be obtained from pooled, single-donor, and autologous blood donors and is usually isolated by the process of cryoprecipitation. The thrombin component is generally derived from commercial bovine sources. Some investigators have added calcium chloride and/or antifibrinolytics (i.e., aminocaproic acid, aprotinin) to their preparations. Fibrin glue can be applied using a double-barrel syringe or by spray application. Although fibrin glue has been used in a variety of surgical procedures, it has been especially useful in heparinized patients undergoing cardiovascular procedures requiring extracorporeal circulation, as it does not require an intact hemostatic system to be effective. Fibrin glue also has been evaluated in presealing woven or knitted Dacron vascular grafts. The major drawback to its use is the risk of transmitted serological disease from pooled and single-donor blood donors. The safest preparations use the patient's own blood to prepare fibrin glue. Overall, fibrin glue is a useful adjunct to other methods to control bleeding in selected surgical patients.