# Acute thrombogenic effects of fibrin sealant on microvascular anastomoses in a rat model.

Authors: Marek C.A., Amiss Jr. L.R., Morgan R.F., Spotnitz W.D., Drake D.B.

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## Abstract:

Topically applied bioadhesives and hemostatic agents have gained wide acceptance in various surgical endeavors. However, the effect of thrombin- based fibrin sealant (fibrin glue) when applied to microvascular anastomoses has not been evaluated thoroughly. Although fibrin sealant has been used directly on vascular anastomoses in macrovascular surgery, there has been little exploration into the utility and potential complications when used in the microsurgical setting. This study explored the influence of fibrin sealant containing increasing concentrations of bovine thrombin on microvascular anastomoses in a rat epigastric free flap model. The survival of the free flap in this model appeared to be inversely proportional to the concentration of thrombin in the fibrin sealant. When thrombin alone was applied to the anastomoses, the rate of thrombosis was the highest. Venous anastomosis was the most sensitive to the deleterious effects of topically applied thrombin.