

Mediastinal fibrin glue: Hemostatic effect and tissue response in calves.

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Abstract:

There is continued controversy regarding the effectiveness and potential adverse effects of fibrin glue. Thus, we chose to evaluate it in a model of experimental calf aortic valve replacement that has been previously well established. Concentrated fibrinogen and topical thrombin were sprayed to form a thin layer of fibrin glue over the mediastinal tissues of 20 consecutive calves undergoing aortic valve replacement. Chest tube outputs of these animals were compared with those of the preceding 20 consecutive calves undergoing aortic valve replacement without fibrin glue. All procedures were performed by the same surgeon, and no other technical changes were made between the two series. Total postoperative chest tube output (mean \pm standard error) was 553 \pm 50 mL for the calves treated with fibrin glue and 1,155 \pm 103 mL for the control calves ($p < 0.001$). On histological examination of mediastinal tissues from 5 treated calves killed 6 weeks after operation, there was no evidence of inflammation, fibrosis, or residual fibrin. To our knowledge, this is the first controlled laboratory study to show that fibrin glue spray is an effective hemostatic agent and that it produces no long-term tissue reaction.