Significantly reduced inflammation and oedema with a fibrin glue application on artificial bladder incisions in rats.

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Abstract:

Introduction & Objectives: We analyzed the safety and effectiveness of fibrin glue for the closure of bladder incisions in rats. Material & Methods: Each of the 30 Wistar-Albino rats was assigned one of three equal groups. A 5 mm long bladder incision was performed on all of the animals. In Group I, the incision was closed by 5/0 dexon. In Group II, after approximation by 2 - 3 transient sutures, fibrin glue was applied to the edges for five minutes. Then, the transient sutures were removed. For Group III, after the application of fibrin glue to the edges, the incision was approximated by 5/0 dexon stay sutures. The presence of extravasations was sought by cystography. And post-mortem histological examinations for fibrosis, oedema, inflammation and bleeding were recorded. Results: Oedema and inflammation were significantly different among the three groups of animals ($P = 0.001$). Oedema was significantly higher in Group I than in Group II and Group III ($P < 0.001$, $P = 0,017$). Inflammation was significantly more prominent in Group I than in Group II and Group III ($P = 0.001$, $P = 0,046$). Fibrosis and bleeding were not significantly different. Cystography examination revealed minor changes. Conclusions: Our findings confirmed that the fibrin glue application significantly reduces oedema and inflammation at the healing site of the bladder incision. Despite the 2.22 times increased relative risk of death with fibrin glue only repair, the application of fibrin glue together with suturing may be useful for better healing and preventing urinoma formation.