Effects of fibrin glue on nasal septal tissues.

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Abstract:

OBJECTIVES: To investigate the changes in adult rabbit nasal septal tissues after application of fibrin glue during septoplasty. STUDY DESIGN: Preclinical animal study. METHODS: Nineteen adult albino Vienna rabbits were included in the study. Rabbits were randomly divided into study (n = 14) and control groups (n = 5). The study group was subsequently divided into two subgroups with seven rabbits in each group to investigate short- and long-term effects of fibrin glue. After raising the mucoperichondrial flap on one side of the septum, fibrin glue was used to fix the mucoperichondrial flap over the septal cartilage. Rabbits were killed 3 weeks and 6 weeks after septoplasty. Samples from the excised nasal septa underwent routine tissue procedure for histopathologic investigation. RESULTS: Both short-term and long-term results were compared with the control group and with each other. There was a significant difference regarding mucosal inflammation and cartilaginous damage between groups. A significant difference was found between groups in terms of loss of cilia, loss of goblet cells, the presence and degree of fibrosis. Loss of cartilage was significantly different between groups. In comparing the thickness of the mucosa, thickness of the perichondrium, and thickness of cartilage, there were significant differences between groups. CONCLUSION: Our results demonstrate that fibrin glue causes distinctive inflammation, creates mucosal damage, increases mucosal thickness, decreases perichondrial thickness and cartilaginous thickness, and causes segmental cartilage loss in rabbits. Further comparative clinical investigations are required to assess the clinical efficacy of fibrin glue in nasal septal surgery in humans.