The use of fibrin glue for the repair of experimental CSF rhinorrhea.

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Abstract:

Surgical repair of cerebrospinal fluid rhinorrhea requires the production of a seal able to resist cerebrospinal fluid pressure during the period of healing. Direct suturing, packing with muscle and fat grafts, and coverage with mucosal or muscle flaps have been effective in repairing most CSF leaks. Fibrin glue may enhance the results of a CSF leak repair by providing better adhesion of the graft and improving the initial seal during healing. A study was performed on 36 rats to assess the effectiveness of fibrin glue in repairing experimentally produced CSF leaks. CSF rhinorrhea was produced by creating a defect in the anterior cranila fossa through the region of the cribiform plate. There were four treatment groups: 1. no treatment control; 2. fibrin adhesive alone; 3. muscle packing alone; and 4. fibrin glue with muscle packing. The CSF leaks were evaluated 3 weeks after operation. Persistent CSF leakage was noted in 89% of group 1, 55% of group 2, 33% of group 3, and 22% of group 4. The reduced CSF leakage in the muscle plus fibrin glue group suggests that fibrin glue, by its adhesive sealing properties, enhances the results of muscle packing alone for the treatment of cerebrospinal fluid rhinorrhea.