

Skull base cerebrospinal fluid leakage control with a fibrin-based composite tissue adhesive.

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Abstract:

Cerebrospinal fluid (CSF) leaks can be responsible for significant patient morbidity and mortality. While the majority of leaks induced after head trauma will seal without intervention, spontaneous or surgically-induced leaks often require operative repair. Many modifications on standard surgical technique are available for repair of CSF fistulae, but none assures adequate closure. We have studied the efficacy of a novel fibrin-based composite tissue adhesive (CTA) for closure of experimentally-induced CSF leaks in rats. Fistulae were created in two groups of animals. Two weeks after creation of the leaks, the animals were sacrificed and analyzed for persistence of leak. A 58% leakage rate was noted in the control group ($n = 12$), and no leaks were noted in the experimental group closed after application of CTA to the surgical defect followed by skin closure ($n = 11$). Comparing the control group to the experimental group, results were statistically significant ($p = 0.015$). These data suggest that CTA may be effective as an adjunct for the closure of CSF fistulae.