Dural substitute with polyglycolic acid mesh and fibrin glue for dural repair: Technical note and preliminary results.

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Abstract:

Background. An ideal dural substitute that enables watertight closure, has sufficient strength, and can be absorbed without remnant materials that induce inflammation, adhesion, and infection is not available. The purpose of this study was to evaluate the efficacy of a bioabsorbable polyglycolic acid (PGA) mesh and fibrin glue as a substitute for dural repair. Methods. Altogether, 10 patients with noted dural tears during extradural spinal surgery and 20 patients who underwent durotomy for intradural spinal surgery were included in this study. In a series of 20 consecutive cases, dural closure was performed by suture and fibrin glue. In the subsequent 10 consecutive patients, dural closure was performed by suture and fibrin glue with the use of absorbable PGA mesh. The medical records and magnetic resonance imaging (MRI) of the surgical site were retrospectively reviewed to evaluate the presence of a cerebrospinal fluid (CSF) fistula or leakage after the surgery. Results. A CSF fistula occurred in five patients who underwent dural repair with fibrin glue alone, and postoperative MRI showed CSF leakage in two patients with incidental dural tears after laminectomy for ossification of ligamentum flavum. No CSF fistula was present in patients who underwent dural repair using PGA mesh and fibrin glue, and no adverse effects or complications were encountered postoperatively. Follow-up MRI revealed no evidence of CSF leakage around the reconstructed dura mater. Conclusions. The use of PGA mesh and fibrin glue for the repair of dura mater is a useful method of preventing CSF leakage in spinal surgery.