Mesh-and-glue technique to prevent leakage of cerebrospinal fluid after implantation of expanded polytetrafluoroethylene dura substitute - Technical note.

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Publication Date: 1999

Abstract:

Expanded polytetrafluoroethylene (ePTFE) can be used as a dura substitute but is associated with leakage of cerebrospinal fluid (CSF) through the suture line. Fibrin glue alone may not prevent this problem. This new method for sealing the suture line in ePTFE membrane uses an absorbable polyglycoic acid mesh soaked with fibrinogen fluid placed on the suture line. Thrombin fluid is then slowly applied to the wet mesh, forming a large fibrin membrane reinforced by the mesh over the suture line. Only one of 33 patients in whom this technique was used had CSF leakage, whereas 12 of 59 patients in whom a dural defect was closed with ePTFE alone showed postoperative subcutaneous CSF collection ($p < 0.05$). Our clinical experiences clearly show the efficacy of the mesh-and-glue technique to prevent CSF leakage after artificial dural substitution. Mesh and glue can provide an adequate repair for small dural defect. The mesh-and-glue technique may also be used for arachnoid sealing in spinal surgery.