Sealing effect of fibrin glue with regard to cerebrospinal fluid leakage from dura mater repaired by expanded polytetrafluoroethylene surgical membrane. [Japanese]

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Abstract:

With the use of an experimental device, we have evaluated the sealing effect of fibrin glue with regard to cerebrospinal fluid (CSF) leakage from dura mater repaired with expanded polytetrafluoroethylene (ePTFE) surgical membrane. Three methods for application of fibrin glue were studied: an external spray method, an internal spray method, and a combination internal-external (sandwich) method. The burst pressure for a one-step increase in pressure was 43.3 cm H<inf>2</inf>O when the external spray method was used, and 61.0 cm H<inf>2</inf>O when the sandwich method was used. The burst pressure for stepwise increases in pressure was 20 cm H<inf>2</inf>O when the external spray method was used, and 30 cm H<inf>2</inf>O when the sandwich method was used. CSF leakage from dura mater repaired with ePTFE surgical membrane is more frequent and the sealing effect of fibrin glue is less effective when compared with cadaveric dural grafts. In conclusion, the sandwich method is effective in preventing CSF leakage under conditions similar to those of an increase in postoperative intracranial pressure.