Evaluation of the use of BioGlue in neurosurgical procedures.

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Abstract:

OBJECTIVE: Post-operative cerebrospinal fluid (CSF) fistula following neurosurgery is associated with increased morbidity and mortality. This prospective study evaluates the efficacy of a new bioadhesive--BioGlue, as a dural sealant in preventing CSF fistula. The complications associated with its use are investigated and the literature regarding dural closure reviewed.

METHODS: BioGlue was applied to the dura mater as a sealant in 210 patients undergoing 216 neurosurgical procedures over a period of 22 months at the Royal Melbourne Hospital. It was used where watertight closure of the dura mater could not be ensured by primary suture alone and for reconstruction of the sellar floor following transsphenoidal adenohypophysectomy. It was used in 114 supratentorial (52.7%), 53 infratentorial (24.5%) craniotomies, 41 (18.9%) transsphenoidal adenohypophysectomies and 8 spinal (3.7%) procedures. The incidence of CSF fistula as a complication of surgery with intradural exposure was analysed.

RESULTS: The incidence of CSF fistula post-operatively was significantly low. Two patients (0.93%), both having undergone posterior fossa craniotomy--for evacuation of a cerebellar haematoma and redo excision of a metastasis respectively and both complicated by hydrocephalus, developed CSF fistula. There were no complications associated with the use of BioGlue.

CONCLUSION: BioGlue reduced the incidence of complications associated with neurosurgery. It is an effective adjunct in dural closure to prevent CSF fistula with enhanced bonding properties and is

simple to use. In this study there were no complications associated with its use.