ADHESIVE SEALANT BIOMATERIALS

Clinical Series

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Use of Pre-soaked TissuePatchDural™ for Dural closure following surgery for Low Grade Glioma

Pre-operative status

A 30-year-old male first presented in late 2014 with a small right posterior temporal suspected low grade glioma. Following careful work-up and discussions with the patient, it was decided to proceed with an awake craniotomy to debulk the tumour. Awake surgery was planned to allow intra-operative visual-field monitoring to be done, particularly at the deep resection margin. In June 2015 he underwent awake craniotomy & resection of this tumour.

Surgical procedure

The patient was positioned supine, with a sandbag under the right shoulder and head turned to the left. Neuro-navigation was set-up. A question-mark right temporo-parietal incision was made, the bone flap elevated & dura exposed. Following dural incision, the patient then was awoken for awake testing of motor and speech functions. With the aid of neuronavigation and intra-operative functional mapping, surgery proceeded with significant debulking (>95%) of the tumour achieved. The intra-operative visual field mapping was successful at maximising the extent of resection and avoiding visual field defect.
Following satisfactory haemostasis, the dura was closed using a continuous suture (figure 1). A 100x50mm sheet of TissuePatchDural™ was pre-soaked and then applied (figure 2). The bone flap was secured with miniplates and the wound closed in standard manner.

Treatment with TissuePatchDural™

A 100×50mm TissuePatchDural™ (TD-03) was used. It was pre-soaked in sterile saline for 1-2 minutes prior to application. Pre-soaking was trialled as a technique to enhance flexibility and avoid damage to TissuePatchDural™ as well as improving its compliance in a limited space of application.

It was then applied as per instructions for use. During placement, the patch rapidly conformed to the contours of the underlying tissues. It provided an immediate and effective seal to CSF leakage as an adjunct to the sutures (figure 2).

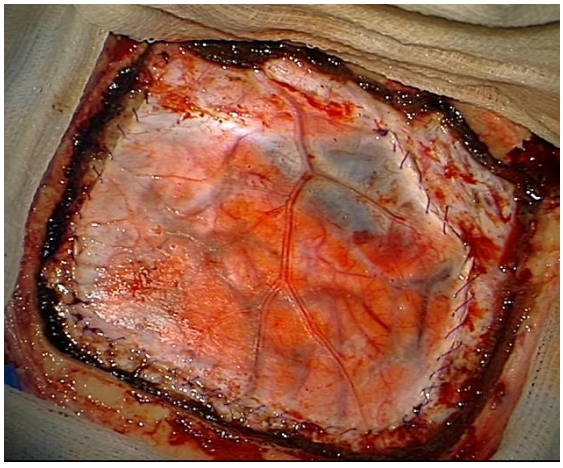

Figure 1 Dura closed with sutures

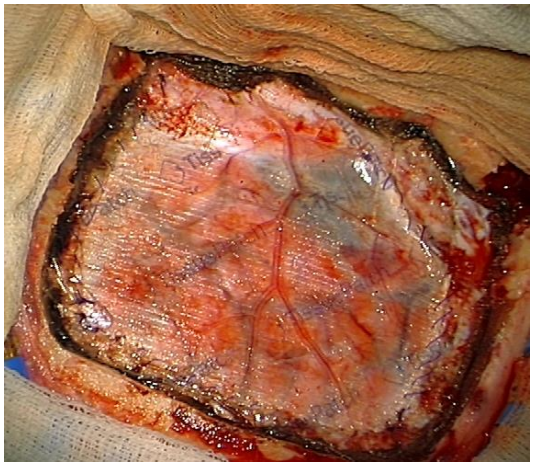

Figure 2 Sutured dura covered with TissuePatchDural™

Summary

The use of TissuePatchDural™ ensured the watertight closure of the dura. Postoperatively the patient recovered well with no CSF leak. He was discharged rapidly following surgery with no complications.

Surgeon opinion of TissuePatchDural™

Since this first trial use, I have pre-soaked TPD in a further 3 cases. I have found that it is most effective to pre-soak for only 1-2 minutes prior to use. The TPD must be kept flat between a moistened swab while soaking and not folded to avoid it adhering to itself. The main benefit of this pre-soaking technique is that it enhances TPD's handling characteristics and compliance, making it easier to insert into confined spaces.