ADHESIVE SEALANT BIOMATERIALS

Clinical Series

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Clinical and radiological follow up after use of TissuePatchDural™ for closure of the Dura following resection of cavernous haemangioma of the brainstem

Pre-operative status

A 44 year old male patient presented with an acute palsy of the left abducent nerve. MRI diagnostics revealed a haemorrhagic transformation of the dorsal pons resulting from a cavernous malformation of 1.5 cm maximum diameter. A typical haemosiderotic rim was observed. Surgery was undertaken to remove the cavernous malformation.

Surgical procedure

The patient was operated in the sitting position and a median suboccipital craniotomy was carried out for an approach through the vermis targeting the dorsal brainstem. Intraoperative electrophysiological monitoring was used to assist the resection of the cavernoma. Following suturing of the Dura, multiple small cerebrospinal fluid (CSF) leaks persisted along the suture line.

Treatment with TissuePatchDural

A 50 x 50 mm TissuePatchDural (TD–02) was cut to shape and was applied per instructions for use. The operation site was dried. During the placement of the material, the patch easily conformed to the contours of the underlying soft dural structures. The TissuePatchDural film provided a fast and effective seal.

Postoperative course

The patient recovered well without any postoperative complications and was discharged on day 6. The wound healing was fast and uncomplicated. No subcutaneous CSF collection was detected. He was examined three months later as an outpatient: Diplopia was improving, as was minimal hypaesthesia of the left face and mild vertigo. He displayed no other or new clinical symptoms. MRI revealed a narrow residual haemosiderotic area and a hypertrophic contralateral upper olivary nucleus. Concerning the biocompatibility of the TissuePatchDural, the brain and its surrounding structures displayed no irregularities.

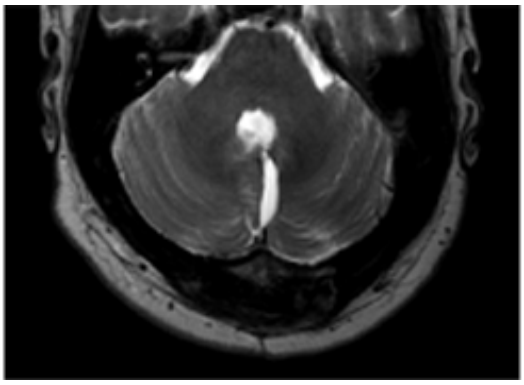

Figure 1: postoperative MRI

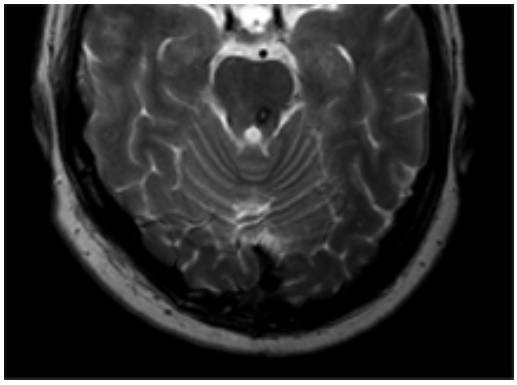

Figure 2 postoperative axial MRI

Summary

The use of the TissuePatchDural sealant film ensured water-tight closure of the Dura. Postoperatively, clinically and radiologically, the material displayed a good biocompatibility

Surgeon opinion of TissuePatchDural

TissuePatchDural is a convenient material providing easy, safe and fast water-tight closure of small CSF-leaks. Postoperatively, the material does not seem to cause any foreign body reactions and wound healing is not disturbed. Reassuringly TissuePatchDural appears to offer good biocompatibility.