
DURAL RECONSTRUCTION IN SURGERY OF THE POSTERIOR CRANIAL FOSSA

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A post-surgical cerebrospinal fluid leak is still a significant cause of morbidity in posterior fossa surgery. This work seeks to evaluate the efficacy of the dural closure in the prevention of such a problem.

Our experiment makes reference to a varied group of disorders: intra-axial and extra-axial tumours, neurovascular conflicts, dysembryogenetic lesions and malformation pathology.

The surgical approach is specific for the site, size and relations of the lesion (retromastoid, medial suboccipital, etc., craniectomy). The patient-position we used is that of semi-sitting. The reconstruction of the dural layer is done predominantly using a continuous suture, reinforced with a heterologous (fibrin glue) and autologous (small patch of the muscle fascia, fragments of muscle taken in the opening phase) material. In surgery for Chiari malformations (decompression in the posterior cranial fossa in general), packing of the duraplasty is done with an autologous material (fascia lata). Particular attention is paid in multi-layered closure (muscular, subcutaneous, skin) which, in our opinion, contributes significantly in the closing of the cerebrospinal fluid leak. We also used compression bandages for paramedian or lateral approaches (retromastoid craniectomy) up to the fifth post-operative day. The removal of the sutures generally occurs on the seventh post-operative day. Assessment of the possible appearance of a cerebrospinal fluid leak is done either clinically (checking the surgical wound, leakage, fever) or by X-ray (CAT scan within 72 hours of the operation and/or brain MRI). Among post-operative complications a cerebrospinal fluid leak, whether or not it is related to a pseudomeningocele, is still significant. It may involve longer hospitalisation and the need for repeat surgery with related added costs. Consequently we have recently sought to improve the dural reconstruction phase. The treatment of individual complications at times was sometimes possible conservatively, sometimes surgically.

Within the period between June and August 2010, at the Department of Neurosurgery of Verona, we tested the use of the TissuePatchDural as an added heterologous component in the reconstruction of the dural layer following operations on the posterior cranial fossa. We recruited 10 patients. In the current case study, we found the appearance of one pseudomeningocele in the perioperative phase, treated conservatively (compression bandage) with complete resolution. None of the patients needed to have the fluid taken out or undergo surgery to check the wound.

In view of our experience, we maintain that the use of TissuePatchDural can constitute a valid aid, among the heterologous components used in the reconstruction of the dural layer. It is capable of preventing the appearance of a cerebrospinal fluid leak, without sacrificing the accuracy of the reconstruction of the planes.

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