Fibrin sealant augmentation with autologous pericranium for duraplasty after suboccipital decompression in Chiari 1 patients: A case series.

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Abstract:

Background: The Chiari 1 malformation (CM1) involves decent of the tonsils of the cerebellum through the foramen magnum. Symptomatic disease requires a posterior fossa decompression with or without an expansile duraplasty. To date, the optimal surgical treatment for CM1 has not been delineated. The extent of bony removal, size of the dural opening, necessity for expansion of the dural space, choice of materials for the duraplasty, and possible need for augmentation with dural sealant are all factors that continue to be debated amongst neurological surgeons worldwide. We herein evaluate the use of fibrin sealant augmentation in combination with locally harvested autologous pericranium for duraplasty in adult CM1 decompression. Methods: Retrospective data collected from January 2006 to December 2011. Data were reviewed for surgical site infection or meningitis, cerebrospinal fluid leak, symptomatic pseudomeningocele, radiographic improvement of hindbrain compression, and postoperative recurrence of symptoms at a minimum of 1 year of follow-up. Outcomes were studied clinically, radiographically, as well as by using a patient-specific questionnaire. Results: Twenty-two consecutive patients were included. One patient required a revision for a delayed graft dehiscence in the setting of a rare form of aseptic meningitis with cerebrospinal fluid (CSF) pleocytosis due to a nonsteroidal anti-inflammatory drug (NSAID) allergy. All remaining patients had successful decompressions with full resolution of their symptoms except for one patient who had persistent headaches. Conclusion: Autologous pericranium with dural sealant augmentation is an effective technique for expansile duraplasty in CM1 decompressions.