

Interlayer Dural Split Technique for Chiari I Malformation Treatment in Adult – Technical Note

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Abstract

Objective: To present an alternative surgical technique in treating cases of Chiari I Malformation with mild-to-moderate syringomyelia after decompressive suboccipital craniectomy: incising only the outer layer of the dura mater, then dissecting it from the inner layer without opening the latter. **Methods and Results:** We utilized this technique in a short series of three cases who were admitted in our department for mild symptoms such as intermittent headache and dissociated sensory loss in the upper limbs, caused by a Chiari Malformation Type I. The patients were placed in the sitting position. We performed a reduced median suboccipital craniectomy and resection of the posterior arch of C1 adapted to the level of tonsil descent, from a limited superior half to a complete resection. Afterwards, we incised the outer dural layer, while sparing the inner one. Using a fine dissector, we then split apart the outer and inner layers to the margin of the craniectomy. Through the transparency of the inner layer and the arachnoid, the cerebellum and the medulla were visible and pulsating. An autologous fascia duraplasty was then performed. The postoperative course was favorable in all cases, patients being discharged without any deficits and with complete symptom resolution. **Conclusions:** Interlayer dural split technique can be used effectively in treating symptomatic cases of type I Chiari malformation in adults, with mild-to-moderate syringomyelia. It is less invasive than opening the dura and possibly more effective than decompressive craniectomy and C1 laminectomy alone. This technique must be validated in a larger case-control series.

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