

Duraplasty

A reconstructive operation on the open [dura mater](#) that involves a primary closure or secondary closure with another soft tissue material (muscle, fascia, allograft dura).

Dural substitute

[Dural substitute](#).

It is a common [Neurosurgical technique](#).

The PubMed database was systematically searched by Azzam et al. to identify studies published over the last decade (2007 to 2017) that described duraplasty procedures. Clinical data were disaggregated and analyzed for the comparisons of biological versus synthetic grafts.

A total of 462 cases were included in the quantitative synthesis. Overall, the most common indication for duraplasty was tumor resection (53%). Allografts were more frequently used in decompression for Chiari malformations compared to xenografts and synthetic grafts ($P < 0.001$). Xenografts were more frequently used in decompressive hemicraniectomy procedures for evacuation of acute subdural hematomas over allografts and synthetics ($P < 0.001$). Synthetic grafts were more frequently used in tumor cases than biological grafts ($P = 0.002$). The cumulative complication rate for dural substitutes of all types was 11%. There were no significant differences in complication rates between the three types of dural substitutes.

[Dural substitutes](#) are commonly used to ensure dural closure in a variety of cranial procedures. This study provides greater insight into duraplasty practices and highlights the low complication rate associated with the procedure. Future studies are needed to determine the safety and efficacy of such procedures in larger prospective cohorts ¹⁾.

The [autologous fat](#) has come as alternative to various substitute [materials](#) being used previously.

Bohoun et al., reported their experience and technique for the repair of notable [skull base dural defects](#), using autologous fat as [dural substitute](#).

Over a period of five years, 71 consecutive patients operated for skull base pathologies, with an important intra-operative dural defect, repaired using autologous fat tissue as replacement material were reviewed. The graft, withdrawn from the abdomen or thigh was flattened and applied to the defect. The clinical findings and outcomes were assessed.

Main pathologies included Schwannomas (45%) and meningiomas (35.21%), with no side predilection. Surgical approaches such as transcondylar fossa, suboccipital, fronto-temporal; approaches were used. Dural defects were mainly located in the posterior (73.2%) and; middle cranial fossae (25.4%). No harvesting-site related complication occurred. In seven cases, transitory subcutaneous fluid collection, spontaneously resorbing after 8 days to 2 months was; observed. No external

cerebrospinal fluid leakage, infection or other complication was noted during the following period.

[Dural repair](#) can be effectively and durably achieved using autologous fat graft as [dural substitute](#) during [skull base approaches](#), even in cases of extended defects. The observed characteristics of the [fat graft](#) along with the achieved outcome make it an ideal [dural substitute](#) ²⁾.

Duraplasty for Chiari Malformation

[Duraplasty for Chiari Malformation](#)

¹⁾

Azzam D, Romiyo P, Nguyen T, Sheppard JP, Alkhalid Y, Lagman C, Prashant GN, Yang I. Dural repair in cranial surgery is associated with moderate rates of complications with both autologous and non-autologous dural substitutes. World Neurosurg. 2018 Jan 25. pii: S1878-8750(18)30158-X. doi: 10.1016/j.wneu.2018.01.115. [Epub ahead of print] Review. PubMed PMID: 29374609.

²⁾

Bohoun CA, Goto T, Morisako H, Nagahama A, Tanoue Y, Ohata K. Skull Base Dural Repair Using Autologous Fat As Dural Substitute: An Efficient Technique. World Neurosurg. 2019 Apr 5. pii: S1878-8750(19)30974-X. doi: 10.1016/j.wneu.2019.03.293. [Epub ahead of print] PubMed PMID: 30959259.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

<https://neurosurgerywiki.com/wiki/doku.php?id=duraplasty>

Last update: **2024/06/07 02:50**

