

Cerebrospinal fluid leakage occurs in 4% to 32% of cranial surgeries and is associated with significant patient burden and expense. The use of **sealant** as an adjunct to primary **dural closure** is assumed to help prevent CSF **leakage**.

van Doormaal et al., evaluated 9 commonly used dural sealants, including **Tachosil** (Takeda Inc, Osaka, Japan), **Adherus** (Hyperbranch Inc, Durham, North Carolina), **Duraform** (Codman, Raynham, Massachusetts), **Tissudura** (Baxter, Deerfield, Illinois), **Hemopatch** (Baxter), **TissuePatchDural** (TissueMed, Leeds, United Kingdom), **Tisseel** (Baxter), **Duragen** Secure (Integra, Plainsboro, New Jersey), and **Duraseal**, (Integra). Sealants were tested in 2 novel in Vitro setups using fresh porcine dura: the first tested the acute burst pressure of a sealed 3-mm gap, while the second examined resistance to a pressure wave mimicking intracranial pressure for 72 h.

Adherus showed the highest mean burst pressure (87 ± 47 mmHg) followed by Tachosil (71 ± 16 mmHg) and Duraseal (51 ± 42 mmHg); these were the only 3 sealants showing burst pressures above normal physiological intracranial pressure. In the 72-h setup, only Adherus and Duraseal maintained appropriate sealing for the duration of the experiment. Tachosil released from the dura after 1.4 h (95% confidence interval, -1.8-4.7).

Given the high cost of sealants and the results of this study, they advocate a critical attitude toward sealant application as an adjunct to classic **dural closure** ¹⁾.

¹⁾

van Doormaal T, Kinaci A, van Thoor S, Redegeld S, Bergmann W, van der Zwan A. Usefulness of Sealants for Dural Closure: Evaluation in an In Vitro Model. Oper Neurosurg (Hagerstown). 2018 Oct 1;15(4):425-432. doi: 10.1093/ons/opx260. PubMed PMID: 29281065.

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