

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 closure¹⁾.

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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