Meningocerebral adhesions

One significant drawback during a cranial reoperation is the presence of meningocerebral adhesions. The appearance of connective tissue bridges between the inner surface of the dura and the pia-arachnoid is mostly related to dural closure and the condition in which the surgical field is left in the previous surgery.

From September 2005 through May 2012, 902 craniotomies were done for various lesions by the senior author (UT). Beginning with February 2009 they began placing gelatin sponge underlying the dural flap with the aim of isolating the dural healing process from the cortical surface. To compare the degree of meningocerebral adhesions statistically, reoperation cases between February 2009 and May 2012 were divided into two groups as Group G (Gelatin) and Group C (Control) in which the dural closure was made with and without subdural application of the gelatin sponge respectively.

In all patients of group G (n=15), a neomembrane was found when the dura was opened. This layer was easily dissected and showed no or minimal attachment to the underlying cerebral cortex. However in group C (n=14) meningocerebral adhesions in various degrees were detected. Adhesion scores were significantly higher in group C than in group G ($p<0.001$).

This study proves that during the dural closure placing a thin layer of gelatin sponge in the subdural space is a safe and effective method for preventing meningocerebral adhesions [1].

1)
Gonzalez-Lopez P, Harput VM, Türe H, Atalay B, Türe U. Efficacy of Placing A Thin Layer of Gelatin Sponge Over The Subdural Space During Dural Closure in Preventing Meningo-Cerebral Adhesion. World Neurosurg. 2014 Feb 19. pii: S1878-8750(14)00163-6. doi: 10.1016/j.wneu.2014.02.032. [Epub ahead of print] Review. PubMed PMID: 24560706.

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