

Study Reviews Different Graft Materials

Researchers at Washington University in St. Louis have published the results of a meta-analysis they performed on the types of graft materials used in Chiari surgery. A meta-analysis is a study that combines the results of other studies to try to make a definitive statement on a subject. For this study, they identified 27 previously published papers that included 1461 adult and pediatric patients and reported on the type of graft material used and complication rates. Unfortunately, the overall quality of evidence from these studies was low, but regardless they identified five types of grafts and how often each was used:

1. Autograft (taken from the patient) – 27.6%
2. Collagen – 27.2%
3. Synthetic – 18.6%
4. Allograft (cadaver) – 14.2%
5. Bovine pericardium – 12.4%

The overall surgical complication rate was 16.1% and while there was no significant difference between the graft materials in terms of the overall complication rate, they did find that autografts were associated with a reduced risk for pseudomeningocele compared to collagen and allografts. Specifically, for pseudomeningocele the rate for autografts was only .4%, compared to 11.6% for collagen and 10% for allograft. There was no significant difference between the materials for CSF leaks, meningitis, wound infections or the need for reoperation. While autografts appear to somewhat reduce complication risks, they do involve more healing for the patient. For now, it is likely that surgeons will continue to follow personal preference in deciding what graft material to use.

Source: Outcomes for various dural graft materials after posterior fossa decompression with duraplasty for Chiari malformation type I: a systematic review and meta-analysis. Yahanda AT, Simon LE, Limbrick DD. J Neurosurg. 2021 Apr 9:1-14.

Conquer Chiari's research updates highlight and summarize interesting publications from the medical literature while providing background and context. The summaries do contain some medical terminology and assume a general understanding of Chiari. Introductory information and many more research articles can be found www.conquerchiari.org