Tonsil Resection May Be More Effective Than Duraplasty For Syringomyelia

A recent study from China looked at the long-term outcomes of adults with Chiari related syringomyelia and compared the results of two different surgical techniques used in treating them. Specifically, the study compared the effectiveness of decompression with tonsillar resection (meaning reducing the size of the cerebellar tonsils) to the more traditional decompression with duraplasty. In total, 158 patients treated by two surgeons at one hospital were included in the study and were followed for 3 years after surgery. Ninety patients underwent surgery with duraplasty and 68 underwent surgery with tonsillar resection.

For analysis, the researchers grouped the patients' symptoms into seven categories:

- Paresthesia (numbness/tingling)
- Cough/Valsalva related headache
- Non-cough headache and pain
- Limb weakness and muscle atrophy
- Trouble swallowing, hoarseness, etc.
- Trouble walking/ataxia
- Hyperreflexes and bladder/bowel issues

In addition, all the patients had pre- and post-surgical MRI scans including CSF flow studies. To look at outcomes, the researchers used the symptom categories listed above as well as the Chicago Chiari Outcome Scale (CCOS), where they defined a Good outcome as a score of 13+. In addition, using imaging they quantified the amount of CSF space around the tonsils and the size of the syrinx.

Overall, they found that both surgical techniques significantly improved parasthesias, cough-related headaches, limb weakness, trouble swallowing, and bladder/bowel issues. Unfortunately non-cough related pain and trouble walking did not improve significantly with either technique. In addition, both surgical techniques resulted in a significant reduction in the syrinx diameter and volume.

In comparing the two techniques, they found that resecting the tonsils achieved significantly better results in terms of improvement in cough-related headaches, syrinx reduction, and average CCOS score (resection=14, duraplasty=13.1). For overall clinical outcome, 85% of the resection group was considered to have a Good outcome compared to 64% of the duraplasty group. The resection group did have a higher rate of surgical complications, but the rate of additional surgery between the groups was similar.

The researchers also found that older patients and patients with trouble walking before surgery tended to have worse outcomes independent of the surgical technique used.

It should be noted that in a study that compares two treatments, ideally the patients would be randomly assigned to each group at the start of the study. In this case that was not possible first because the study was done after the fact using medical records, and second because the patients took part in deciding which surgical approach would be used. It should also be noted that compared to most US based studies, the patient groups in this study were much older, with an average age of around 47 years.

Source: A long-term follow-up study of adults with Chiari malformation type I combined with syringomyelia.
Hu Y, Zhang M, Duan C, Song D, Wei M, Guo F. Front Neurol. 2023 Dec 1;14:1274971. doi: 10.3389/fneur.2023.1274971. eCollection 2023. PMID: 38107634

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