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Study Finds Syrinxes Shrink By About 50% After Surgery

In a study of 28 adult, Chiari-related, syringomyelia patients, an international team found that the volume of the syrinxes was reduced by an average of 50% after decompression surgery. Syrinxes are often measured using width across the spinal cord in millimeters, or length along the cord either in millimeters or the number of vertebrae they encompass, but this study used tumor tracking software to measure the 3-dimensional syrinx volume from MRIs.

The researchers found that the average pre-surgical syrinx volume was 9.1 cm^3 and the average post-surgical volume was 4.6 cm^3, but there were large variations across the group. Overall, half of the patients saw a syrinx volume reduction of 25-75%, while a quarter had a reduction of 75% or more, and the final quarter had a reduction of less than 25%. Of note, it appears that most of the syrinx reduction occurs in the first 3 months after surgery, as there was no real difference in the percent reduction between patients whose post-op MRI was less than 3 months after surgery versus those whose MRI was taken more than 3 months post-op.

In an indication of the lower surgical expectations that exist when a syrinx is involved, outcomes were rated as Excellent if neurological signs and symptoms improved; Good if they remained stable; and Poor if they got worse. Overall, 16 of the patients (57%) had an Excellent surgical outcome, while 9 (32%) had a Good outcome, and 3 (11%) had a Poor outcome. Interestingly all 3 patients with a Poor outcome had a syrinx reduction of less than 25%.

Although this is just a preliminary study, the tumor tracking software has been shown to be accurate in non-Chiari studies and appears to be easy to use. It will be interesting to see if this type of post-surgical evaluation gets used further in syringomyelia research or even adopted clinically.

Source: Three-Dimensional Volumetric Magnetic Resonance Imaging Analysis of Syringomyelia Evolution After Posterior Fossa Decompression for Chiari Malformation Type1. Baassiri W, Bani-Sadr A, Capo G, Brinzeu A, Barrey CY. World Neurosurg. 2023 Aug 1:S1878-8750(23)01066-5.

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