

Less Than 10% of Syrinxes Require Additional Shunting After Decompression

When Chiari is accompanied by a syrinx, a fluid-filled cavity inside the spinal cord, decompression surgery aims to restore normal cerebrospinal fluid flow so the syrinx will shrink. If a syrinx does not shrink, or continues to grow, shunts are often used as a follow-on treatment. In a new study, 271 of 3,112 patients with both Chiari I and a syrinx received a shunt after decompression. That is 8.7%, or fewer than 1 in 10.

To determine this, researchers examined electronic health records from a large network of health care organizations. The patients had surgery between 2010 and 2020 and at least two years of follow-up; the median follow-up was 5.1 years. Their median age was 28.4, and 1,938 (62%) were female and 1,174 (38%) were male.

The study also compared patients who later received a shunt with those who did not. The clearest difference involved a recorded diagnosis of adolescent idiopathic scoliosis. Of 435 patients with that diagnosis, 95 (22%) required a shunt in addition to decompression surgery. Among the other 2,677 patients, only 176 (6.6%) eventually required a shunt. The time from Chiari and syrinx diagnosis to decompression surgery also differed: a median of 14.5 months in the shunt group versus 3.8 months in the no-shunt group. Based on the statistical model, the authors found that each additional month before surgery raised the chance of a later shunt by close to 1 percentage point.

It is important to note that these are statistical associations and are not proof that there is a causal relationship between these factors and eventual shunting. However, it is interesting that other studies have found a relationship between delays in diagnosis after symptom onset and worse outcomes overall.

It is also important to note that the study focused on shunt procedures, rather than every case of persistent syringomyelia. Whether to shunt when decompression surgery fails to reduce the size of a syrinx can be a complicated decision and involving the patient's wishes and the judgment of the surgeon. So while the overall number of shunt procedures is an accurate reflection of real world data, the individual factors involved are more difficult to identify.

Source: Abo Kasem R, Dietz N, Abecassis JJ, et al. Predicting the need for syrinx shunting after posterior fossa decompression in Chiari I malformation: a real-world machine learning analysis. J Neurosurg Spine. Published online September 4, 2026. doi:10.3171/2026.6.SPINE26351

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