

Tracking Which Symptoms Go Away After Surgery...

When patients consider Chiari surgery, one of their most basic questions is also one of the hardest to answer: Which of my symptoms are actually likely to go away? A new study of 209 adults with Chiari I provides unusually detailed information by tracking individual symptoms at 30 days, 90 days, and long-term follow-up after decompression surgery. The patients had a median age of 36 and were followed for a median of 23 months. Headache was by far the most common symptom, reported by 91% of patients. Only two other symptoms—hand numbness or weakness (58%) and neck/shoulder pain (57%)—were reported by more than half. Dizziness occurred in 35%, while visual symptoms and imbalance each occurred in about 24%. Most of the remaining symptoms affected fewer than one in four patients. This wide range highlights an important aspect of Chiari that can sometimes get lost when symptoms are presented as a single list: the symptom pattern can vary tremendously from one patient to another.

The researchers looked at whether each symptom had completely resolved rather than simply asking whether patients were “better.” At 30 days, several of the less common symptoms had some of the highest resolution rates. Memory problems and sleep apnea had completely resolved in all of the patients with those symptoms at, while nausea/vomiting, fatigue, speech problems, imbalance, tinnitus, and dysphagia (trouble swallowing) also showed relatively high early resolution rates. These percentages need to be viewed cautiously, however, because many of these symptoms occurred in only a small number of patients—for example, just 10 patients reported memory problems and eight had sleep apnea.

By 90 days, many of these symptoms continued to show high rates of resolution. Nystagmus (involuntary eye movements), nausea/vomiting, tinnitus, sleep apnea, dysphagia, and fatigue were among those that appeared most likely to be gone. The classic strain-related, or tussive, headache also did well: 68% had resolved by 90 days. In contrast, the two most common pain symptoms, general headache and neck/shoulder pain, were among the least likely to completely disappear early after surgery. At 30 days, only 36% of headaches and 35% of neck/shoulder pain had resolved.

Long-term results showed an important difference between general headaches and the more Chiari-specific tussive headache. At the final follow-up, only about half of patients with headaches were headache-free, while a strong 83% of tussive headaches had resolved. Dysphagia, hearing loss, and fatigue also showed durable results, with no recurrence documented among patients whose symptoms had improved during the earlier follow-up periods. Hand numbness or weakness was more troublesome: it was the symptom most likely to return after initially disappearing, recurring in 25% of patients by the final follow-up. Meanwhile, general headache recurred in 21% and dizziness in 16%.

This type of reporting is especially useful for patients because many Chiari studies combine “resolved” and “improved” into a single favorable outcome. Those are very different outcomes from a patient’s perspective. Someone whose severe headaches are somewhat better is not in the same situation as someone whose headaches are gone completely. In this study, only 32% of the adults were completely symptom-free at long-term follow-up, even though 47% were classified as having improved overall. Another 32.0% had persistent or worsening symptoms without ever becoming symptom-free, and 21% experienced symptoms that disappeared and later returned.

That 32% long-term symptom-free rate is much different than the often reported 80-90% success rate and provides an important reality check about adult Chiari surgery. Decompression can provide substantial relief—particularly for certain symptoms—but it is far from an ideal treatment in which most patients simply have surgery and become symptom-free. For many adults, some symptoms persist, improve only partially, or recur later. This is more in-line with data from the Chiari1000 which found that 80% of adult females live with moderate or worse neck related disability even after surgery.

The researchers also identified several factors associated with whether a patient became completely symptom-free. Two preoperative symptoms were negative predictors, meaning they were associated with poorer outcomes: patients with hand numbness or weakness had about half the odds of complete symptom resolution, while patients with visual symptoms had about 58% lower odds. On the positive side, greater cerebellar tonsil descent was associated with higher

odds of becoming symptom-free, with the odds increasing about 13% for each additional millimeter of descent. Patients in whom the surgeon encountered and dissected arachnoid adhesions were also more likely to achieve complete resolution, with about 2.8 times the odds.

The study also reported details on surgical complications. Forty of the 209 patients, or 19%, experienced a postoperative complication, and 22 patients—10% of the entire group—required another surgical procedure to manage a complication. Meningitis occurred in 6%, pseudomeningocele—a collection of cerebrospinal fluid near the surgical site—in 6%, and cerebrospinal fluid leakage in 4%. Wound breakdown and hydrocephalus each occurred in less than 2%.

The study's limitations should be noted. This was a retrospective review from a single institution covering surgeries performed over roughly 20 years. Symptoms were taken from clinical notes rather than a standardized symptom questionnaire, and approximately one-quarter of the patients did not have documented 90-day outcomes. Patients also commonly had multiple symptoms, making it difficult to separate the effect of one symptom from the rest of a patient's clinical picture.

Still, the study provides something that patients rarely get from the Chiari literature: the chance that specific symptoms, or symptoms overall, will go away completely and also how they evolve over time. That is much more informative than simply labeling patients as “improved” after surgery.

Source: Akhavan-Sigari A, Park DJ, Kattaa AH, et al. The symptom spectrum: preoperative symptom-related indicators of surgical outcomes for adult type 1 Chiari malformation. *Neurosurg Rev.* 2026;49:562. doi:10.1007/s10143-026-04485-6.

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