Superficial Incisions Of The Dura Show Good Results In Children

Not all Chiari decompressions are the same. Perhaps the most significant difference in how surgeons approach the procedure is whether to open the dura – the covering of the brain – or note during the procedure. Large studies have shown that not opening the dura results in much fewer complications but potentially a higher failure and reoperation rate. However, there is also a middle ground as some surgeons prefer to score the dura without fully opening it. This has the goal of providing some expansion without the risk of opening the cerebrospinal fluid space underneath.

Recently, an international group from Israel, Russia, and Switzerland published their results using a similar technique which involved 20 or more superficial incisions of the dura when performing Chiari decompressions on children. The technique itself may not be highly innovative, but the paper continues a positive trend of reporting symptom level improvement rates along with complication and reoperation rates.

Their work involved 91 children with an average age of 10 years. Headache was the most common symptom (55%), while 53% had syringomyelia, 25% had scoliosis, and 13% had trouble swallowing. The average hospital stay was 5 days, and the complication rate was 8%. Notably, there were no incidents of CSF leak, hydrocephalus, or other major complications. The overall reoperation rate was 10%. The reoperations occurred an average of 19 months after the initial surgery.

Headaches improved 90% of the time, while syrinxes shrank 63% of the time and were stable 25% of the time. Unfortunately, the syrinxes got larger 12% of the time and 4 children developed new syrinxes during the follow-up period. Scoliosis either improved or was stable for 74% of the children, while 26% required scoliosis correction surgery. The table below shows the improvement rate for additional symptoms and signs.

Headache	90%
Trouble Swallowing	83%
Snoring	75%
Hoarseness	71%
Ataxia/Balance	57%
Double Vision	50%
Muscle Weakness	60%
Sensory Loss	100%

It is important to keep in mind that fewer than 10 patients experienced some of these symptoms, so strong conclusions about the improvement rate can't be drawn. However, as more and more publications provide symptom level details, parents will have more information to work with and thus make informed decisions.

Source: Sergeenko O, Roth J, Soleman J, et al. Extradural foramen magnum decompression with multiple superficial dural incisions for Chiari I malformation: a multicenter series of 91 pediatric patients. *Childs Nerv Syst*. 2026;42(1):122. Published 2026 Mar 17. doi:10.1007/s00381-026-07217-9

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 in the Conquer Chiari Library.

Conquer Chiari is a 501(c)(3) public charity dedicated to improving the experiences and outcomes of Chiari patients through education, awareness and research.