

Study Describes Over 200 Pediatric Syrx Cases

In the early days of Chiari research, publications were predominantly made up of descriptive reports on either a single or a small number of cases. Over time, published studies became more rigorous and expanded to a wide variety of topics. At the same time, as the number of Chiari patients seen at certain institutions increased, the number of patients included in descriptive reports increased as well. That brings us to today where Texas surgeons have reported on their twenty-year history of treating pediatric Chiari cases with syringomyelia.

During the twenty-year span, the clinic saw 435 young Chiari patients of whom about half (218) had syrxes. In comparing their patients with and without a syrx, they found that the syrx cases were on average 3 years older. In addition, a surprising 18% of the syrx cases were found incidentally – meaning the imaging was done for something not related to Chiari such as a head trauma – compared to only 1% of the non-syrx cases.

Children with a syrx were four times more likely to have scoliosis than those without a syrx, but the rates of hydrocephalus and retroflexed odontoid were similar. Interestingly, the syrx group was 70% less likely to have cough-related headaches and 50% less likely to have cranial nerve issues than the no syrx group.

Within the syrx group, the doctors found that if the syrx shrunk by at least 50% in either width or length after surgery that patients reported significantly more symptom improvement. In addition, hospital readmission rates were dramatically lower (6% vs 25%) as were reoperation rates (.5% vs 36%). For reasons that aren't clear, syrx patients with a wider foramen magnum (the opening at the bottom of the skull) improved more after surgery than those with a narrower opening. It is also not clear why fewer syrx patients had cough headaches and cranial nerve issues, but some researchers have previously speculated that the formation of a syrx is a compensatory mechanism in response to the abnormal spinal fluid dynamics caused by the tonsillar herniation. It is possible (pure speculation) that by allowing spinal fluid into the spinal cord itself the body is able to maintain a more equal pressure environment between the brain and spine which reduces headache frequency.

Source: Predictors of syrx presentation and outcomes in pediatric Chiari malformation type I: a single institution experience of 218 consecutive syrx patients. Montgomery EY, Caruso JP, Price AV, Whittemore BA, Weprin BE, Swift DM, Braga BP. Childs Nerv Syst. 2024 May 22. doi: 10.1007/s00381-024-06403-x. Online ahead of print. PMID: 38777910

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