

## Conservative Management of Pediatric Syringomyelia

For many surgeons, the presence of a syrinx is a strong, if not automatic, indicator that surgery is required. However, a recent report from the University of Ottawa provides data which questions this approach in children. The surgical team's philosophy is more conservative and their surgical decision is based on symptoms, even in the presence of a syrinx or dilated central canal.

To evaluate this approach, they looked back at children with Chiari and syringomyelia (or a dilated central canal) they had treated and had extended medical records for. They divided them into three groups: early surgery (within a year of diagnosis), delayed surgery (more than one year after diagnosis), and no surgery.

Overall, there were 37 children – 21 female and 16 males – with an average age of 8.7 years at first visit. Out of this group, only 14 (38%) had surgery within a year of the initial visit. Out of the other 23, 8 eventually required surgery an average of 2.5 years later and 15 were treated conservatively and followed for an average of more than three years.

In the conservative group, six of the children were asymptomatic when the Chiari and syrinx were discovered and stayed asymptomatic throughout the observation period. Five of the children were initially symptomatic, but their symptoms improved or resolved completely, so no surgery was required. The other four children were also symptomatic initially, but their symptoms remained stable throughout the study period, so again no surgery was required.

The authors looked for factors that would predict which children ended up requiring surgery, but the small number of subjects in each group made drawing statistical conclusions difficult. However, they did note that the position of the obex may play such a role. The obex is the point where the fourth ventricle drains spinal fluid into the spinal cord's central canal. Normally, the obex is located above the foramen magnum (the opening in the bottom of the skull through which the brain and spinal cord meet), but in many Chiari cases it is found to be lower. (Note the obex and central canal naturally close as children become adults.)

In this study, 100% of the children who did not require surgery had an obex position at or above the foramen magnum. Whereas 75% of the children in the delayed surgery group and 57% of the children in the early surgery group had an obex position below the foramen magnum. This finding led the authors to suggest that children, even with syrinxes, who are initially asymptomatic or mildly symptomatic, but whose obex is located above the foramen magnum, may be successfully treated conservatively.

**Source:** Natural history of Chiari I malformation with syrinx and dilatation of the central canal in the pediatric population: the CHEO experience. Esquivel MFD, Gupta N, O'Brien CA, Bijelić V, Barrowman N, Wilson N, Tu A. Childs Nerv Syst. 2024 Jan 12. doi: 10.1007/s00381-023-06273-9. Online ahead of print. PMID: 38214745

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