

Report on 510 Pediatric Surgical Patients Provides Valuable Data for Parents

A recent report from Children's Hospital of Pittsburgh on over 500 surgical, pediatric Chiari patients provides a wealth of information for parents to consider. The report covers patients treated by nine different neurosurgeons at the hospital over a 30-year period (1992-2021).

The average age of the patients was 10 years but the distribution was fairly even across 5-year increments. Twenty-one percent were less than 5 years old, 27% were between 5-10 years old, 28% were between 10-15 years old, and 24% were between 15-21 years old. A little more than half were female (57%) and 8% had at least one immediate family member who also had Chiari.

Validating the varied nature of how Chiari affects people, only 3 symptoms or clinical signs were found in more than 10% of the patients. Sixty-five percent suffered from the classic Chiari exertion related headache; 55% had syringomyelia, and 18% had scoliosis. Interestingly, 93% of the patients with scoliosis also had a syrinx. About 5% of the group had hydrocephalus before the Chiari diagnosis, and the same percentage suffered from seizures.

On imaging, the average herniation was 14mm in size, but there was no significant difference in herniation size between children with and without syrinxes. Roughly one-third of the group had kinking of the brainstem indicative of what is sometimes called 'complex Chiari'.

The vast majority underwent decompression with opening of the dura (97%), while the rest had bone only decompressions. Eighty-nine percent of the surgical laminectomies were limited to C1 only and 86% of the patients had their cerebellar tonsils manipulated and reduced in size in some fashion. The average hospital stay was 3 days for children who had their duras opened and 2 days for those with the bone only procedures. Five percent of the patients stayed in the hospital for more than 5 days. The overall complication rate was 12%, which is in line with other large surgical reports. Cerebrospinal fluid leak and aseptic meningitis were the most common complications. The 30 day hospital readmission rate was 11.4%.

This same group will report on outcomes in a separate paper. In terms of this paper, it would have been interesting to see how these statistics changed over time. With a 30 year database, the authors could have looked by decade to identify interesting trends.

Source: Nturibi EM, Piazza MG, Kim SL, et al. A retrospective single-center series on the surgical management and postoperative outcomes of pediatric Chiari malformation type I. Part 1: presentation, operative management, and complications. *J Neurosurg Pediatr*. Published online January 16, 2026. doi:10.3171/2025.6.PEDS22191

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