

Tonsillar herniation

Cerebellar tonsils “cone” through the [foramen magnum](#), compressing [medulla](#) → [respiratory arrest](#). Usually rapidly fatal.

This occurs with either supra- or infratentorial masses or with elevated ICP. May be precipitated by [LP](#). In many cases, there may simply be pressure on the brainstem without actual herniation. There are also cases with significant [cerebellar herniation](#) through the [foramen magnum](#) with the patient remaining alert.

It has been well documented that, along with tonsillar herniation, [Chiari Malformation Type I](#) (CMI) is associated with smaller [posterior cranial fossa](#) (PCF) and altered [cerebrospinal fluid](#) (CSF) flow and tissue motion in the [craniocervical junction](#).

CM-I in children is not a radiologically static entity but rather is a dynamic one. Radiological changes were seen throughout the 7 years of follow-up. A reduction in [tonsillar herniation](#) was substantially more common than an increase. Radiological changes did not correlate with neurological examination finding changes, symptom development, or the need for future surgery. Follow-up imaging of asymptomatic children with CM-I did not alter treatment for any patient. It would be reasonable to follow these children with clinical examinations but without regular surveillance MRI ¹⁾.

As [subdural empyema](#) SDE along the tentorial surface may remain undetected in [axial](#) sections of CT scans, a [lumbar puncture](#) may precipitate fatal [tonsillar herniation](#)

¹⁾

Whitson WJ, Lane JR, Bauer DF, Durham SR. A prospective natural history study of nonoperatively managed Chiari I malformation: does follow-up MRI surveillance alter surgical decision making? J Neurosurg Pediatr. 2015 Aug;16(2):159-66. doi: 10.3171/2014.12.PEDS14301. Epub 2015 May 1. PubMed PMID: 25932776.

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