



The Dynamics of Nonoperatively Managed Pediatric Chiari I Anomaly

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Introduction

Pediatric Chiari I anomaly is a common incidental finding. There are reports of tonsillar ectopia resolving, but none which follow tonsillar position over regular follow-up intervals. We prospectively followed children with non-operatively managed Chiari I for up to seven years to elucidate the natural history of the dynamics of this condition.

Methods

All children who presented with Chiari I over twelve years were separated prospectively into operative and non-operative groups. Symptomatic patients and patients with syringomyelia underwent suboccipital decompression. Non-operative patients were followed with annual MRI. At each interval, patients were divided into changed and unchanged groups. An alteration in tonsillar descent 2mm or greater was considered a change.

Results

Fifty-two children with non-operatively managed Chiari I were included. Three patients were excluded because they later underwent surgery based on symptoms. No surgeries were performed for radiographic change. Overall, 50% remained stable, 38% reduced, and 12% increased on



Example of asymptomatic child with Chiari I at presentation. MRI was performed for seizures.



Same child seven years later showing resolution of the Chiari I

Conclusions

Pediatric Chiari I is not a static entity but rather a dynamic one.

Radiographic changes were seen throughout follow-up. Substantially more patients showed reduction in tonsillar descent than increase. Radiographic changes did not correlate with symptom development. Regular imaging of children with Chiari I presenting without a syrinx did not affect any treatment decisions.

Learning Objectives

By the conclusion of this presentation, participants should understand that: 1) pediatric Chiari I anomaly is a dynamic condition, 2) changes in tonsillar ectopia do not correlate with symptoms, and 3) routine follow-up imaging alone does not lead to any clinical interventions.

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