



Radiographic and Clinical Follow-up of Syringomyelia in Patients Treated for Tethered Cord Syndrome
without Other Radiographic Abnormalities

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Introduction

- The management of patients with symptoms of tethered cord syndrome (TCS) who lack significant radiographic abnormalities is controversial (1,2,3).
- One potential marker for TCS is syringomyelia (4,5).
- However, a syrinx may be a benign and incidental finding (6,7).
- We evaluate a highly selected cohort of patients who had symptoms of TCS with minimal radiographic abnormalities other than syringomyelia.
- We evaluate clinical and radiographic outcomes after tethered cord release (TCR).

Learning Objectives

By the conclusion of this session, participants should be able to

- 1) Recognize that a syrinx is considered a marker for tether, however radiographic resolution of the syrinx is not necessary for clinical improvement
- 2) Identify characteristics suggestive of a good surgical candidate for tethered cord release, and
- 3) Further understand what role syringomyelia plays in the evaluation of possible tethered spinal cord.

Results

- Most common presentation (75%): urinary dysfunction. All improved at 1.4y (avg).
- 7/8 patients (87.5%) with back/leg pain improved.
- 4 had progressive scoliosis. 3/4 (75%) had stabilization of the curve or mild improvement.
- Radiographic follow-up at 1.4y (avg): 12/16 (75%) stable syringomyelia after TCR. 4/12 (25%) showed improvement or resolution.
- 4/10 (40%) of syringes below T5 improved; 0/6 (0%) above T5 improved (p=0.23)
- Thickened filum on MRI more likely to have radiographic improvement (p=0.05).

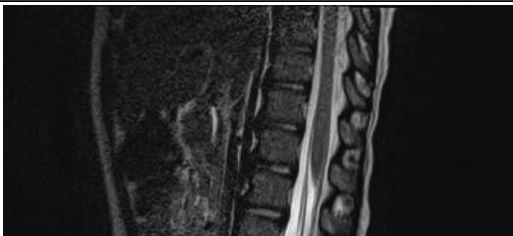
Conclusions

- Highly selected patients with symptoms of TSC do very well clinically.
- Patients with abnormal urodynamic studies, pain, and gait disturbances show a high rate of symptomatic improvement.
- A smaller percentage of patients had radiographic improvement of the syrinx.
- Therefore, we suggest that the decision for TCR and for post-procedural imaging should be based on clinical symptoms in this population.
- Symptomatic improvement is not necessarily related to radiographic resolution of the syrinx.

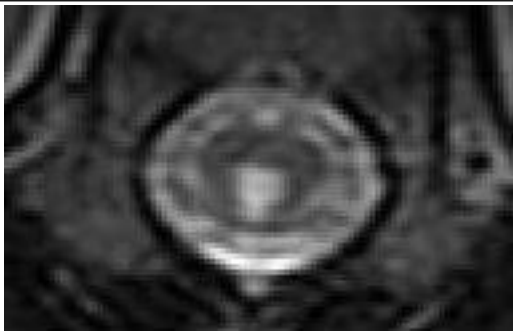
Representative Improved Caudal Syrinx



Pre-op Sagittal T2 MR



Post-op Sagittal T2 MR



Pre-op Axial T2 MR



Post-op Axial T2 MR

Methods

A retrospective review of 16 children meeting inclusion criteria (radiographically occult tether, syrinx, pre- and post-operative imaging). Patients without follow-up imaging or with alternate causes of syrinx such as Chiari, trauma or tumor, were excluded. All patients were surgically treated at the Riley Hospital for Children in Indianapolis, Indiana between 2006 and 2011. All children had clinical symptoms of TCS. Syrinx was defined as central canal dilation greater than 1mm extending at least 2 vertebral levels (8).

References

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