

# [NM-332] Thoracic Epidural Placement in a Pediatric Patient with a Thoracic Syrinx Undergoing Minimally Invasive Pectus Excavatum Repair

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## Summary

We describe the successful and uncomplicated use of epidural postoperative analgesia for pectus repair in a patient with asymptomatic thoracic syringomyelia (syrinx).

## Case Report

An 11-yr-old male with severe symptomatic pectus excavatum presents for minimally invasive repair. He has Ehlers-Danlos Syndrome prompting cardiac evaluation and MRI that revealed an incidental thoracic spinal cord syrinx at T5–T8 (Figure 1). He was asymptomatic with unremarkable neurologic exam. Pain management options and risks were discussed with patient/parents and they preferred epidural analgesia. Preoperatively, while awake, an epidural catheter was placed at T4/T5 atraumatically. Epidural infusion of ropivacaine 0.2% and clonidine 1 mcg/ml at 6 ml/h was started. Post-op course was uncomplicated with adequate analgesia. Epidural was removed on post-op day 3 and discharged home on post-op day 5 without any neurological consequences.

## Discussion

Syringomyelia is a progressive cavitation of the spinal cord reflecting an embryologic abnormality obstructing CSF outflow causing cyst formation. It is uncommon with a prevalence of 8.4 per 100,000 with 21,000 Americans affected annually. Mean age at onset of symptom is 25-40 years, but with increased use of MRI more cases are detected earlier. The presence of an asymptomatic syrinx can present challenges regarding anesthetic management. A thorough preoperative neurological exam is necessary. Neurological assessment must check for signs of autonomic neuropathy, respiratory dysfunction, and sensory loss. Even asymptomatic patients can have increased ICP. A major goal is to avoid disrupting CSF flow and subsequent increase in ICP. Avoidance of syrinx enlargement is imperative during periods of straining or coughing.

Pain control after pectus repair is challenging. The length of hospital stay is primarily determined by adequate oral pain control. In our institution, our epidural analgesia and regimen provide better pain control with the least opioid adverse effects than any other modality. We proactively minimize the risk of neurologic injury by performing thoracic epidurals preoperatively in awake patients. Asymptomatic thoracic syrinx may not be diagnosed preoperatively as routine thoracic MRI is not a standard practice. Currently there are no literature or case reports of thoracic epidural placement in pediatric patients with a thoracic syrinx, though there are reports of lumbar epidural anesthesia for cesarean delivery in obstetric patients with lumbar syrinx. Successful and uncomplicated thoracic epidural analgesia in our case suggests that expert atraumatic placement and management of thoracic epidurals in pediatric patients with an asymptomatic syrinx is a safe and effective approach.

## References

- (1) Semin Spine Surg 2006 June; 180-4
- (2) Can J Anaesth 2011; 58: 764-8

