

Introduction

Multiple modalities have been used in the treatment of syringomyelia, including direct drainage, shunting into peritoneal, pleural and subarachnoid spaces.¹ The authors report their experience of surgical treatment of syringomyelia in a minimally invasive fashion.

Methods

We conducted a single-center retrospective chart review on our syringomyelia cases treated with minimally invasively using Metrx Quadrant retractor system since January 2011. Lateral fluoroscopy was used to guide the placement of the retractor onto the lamina of the corresponding level. This was followed by laminectomy and a small durotomy. Once the syrinx cavity was identified and the proximal end of the tubing was inserted into the syrinx cavity, the tubing was tunneled into the pleural incision subcutaneously. Insertion of the pleural end of the shunt was performed under the microscope, with removal of a small amount of the rib at its upper edge.

Results

Nine procedures were performed in seven patients by the senior author. Etiologies of syringomyelia included Chiari malformation, trauma, diastematomyelia and kyphoscoliosis. All patients improved neurologically, except for one patient who remained neurologically unchanged. No patients had immediate postoperative complications. One patient underwent two revisions of syringopleural shunts due to multilobulated nature of syringomyelia.

Conclusions

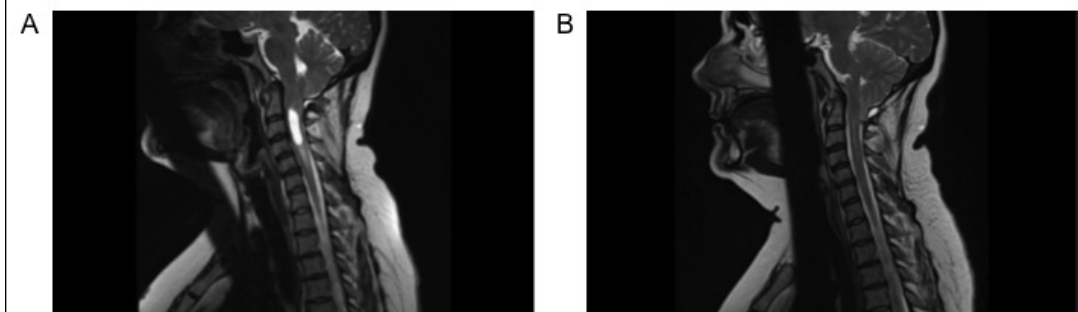
Our case series presents a novel, minimally invasive technique for shunting of syringomyelia with results comparable to open procedures.

Table 1. Patients treated with minimally invasive insertion of syringopleural shunts

Etiology	Location	Presentation	Complication	Postop status	Follow up
Diastematomyelia	L3-4	knee weakness	Nil	Improved	85 m
Idiopathic	T11-12	leg weakness	Nil	Improved	15 m
Idiopathic	T6-8	ataxic gait	Nil	Improved	71 m
Idiopathic (scoliosis)	T9-10	leg weakness	Nil	Improved	68 m
Trauma	T5-6	leg weakness and paresthesia	Nil	Improved	58 m
Chiari Malformation	C2-4	leg pain, ataxic gait	Nil	Improved	19 m
Chiari Malformation	C5	leg weakness	Nil	Unchanged	115 m
		leg weakness	Nil	Unchanged	

Seven patients underwent minimally invasive insertion of syringopleural shunts. One patient had a subsequent revision of syringopleural shunt due to the multilobulated nature of his syringomyelia.

Figure 1. Illustrative case of a 38-year-old female with C2-4 syrinx treated with SP shunt.



(A) A 38-year-old female with previous Chiari decompression presented with left leg pain and gait ataxia. Her MRI showed progression of known C2-4 syringomyelia. (B) Resolution of syringomyelia after insertion of a syringopleural shunt. Her left leg pain and ataxia improved postoperatively.

References

1. Brodbelt, A.R. and M.A. Stoodley, Post-traumatic syringomyelia: a review. *J Clin Neurosci*, 2003. 10(4): p. 401-8.