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Technical Note

Isolated thoracic intradural extramedullary epidermoid cyst: A technical note

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ABSTRACT

Background: Congenital, acquired, and iatrogenic spinal epidermoid cysts (EC) are very rare.

Methods: A 62-year-old female patient presented with a 5-month history of progressive paraparesis leading to paraplegia secondary to a posterior compressive intradural extramedullary lesion at the T7 level. The patient underwent a laminectomy/durotomy for gross total tumor excision.

Results: Histopathology confirmed the lesion was an epidermoid cyst. Although her spasticity improved within 5 weeks, she only regained partial lower extremity motion (i.e., 3/5 motor function).

Conclusion: Patients presenting with the acute/subacute onset of paraparesis secondary to spinal EC should undergo timely gross total cyst resections to optimize neurological outcomes.

Keywords: Epidermoid cyst, Extramedullary, Intradural, Spinal, Thoracic

INTRODUCTION

Spinal epidermoid cysts (ECs) are benign tumors that are typically intradural and extramedullary in location. These lesions are often congenital, typically occurring in infants, and commonly associated with cutaneous and/or osseous malformations. Alternatively, they may be acquired/iatrogenic, developing secondary to trauma, surgery, or invasive spinal procedures (i.e., lumbar puncture and/or anesthesia). Here, we describe a 62-year-old female who presented with a progressive paraparesis, leading to paraplegia over a 5-month duration attributed to an intradural extramedullary dorsal T7 EC.

CASE REPORT

A 62-year-old female presented with the progressive onset of paraparesis leading to paraplegia over a 5-month duration, with no history of trauma, lumbar puncture, or anesthesia. The thoracic magnetic resonance imaging showed a posteriorly compressive intradural extramedullary mass at the T7 level. It was hypointense in T1-weighted sequences [Figure 1a], with annular enhancement on fat saturation (FAT SAT) sequence [Figure 1b], and hyperintense on T2 sequences [Figures 1c-d]. The patient underwent a fluoroscopically guided T7

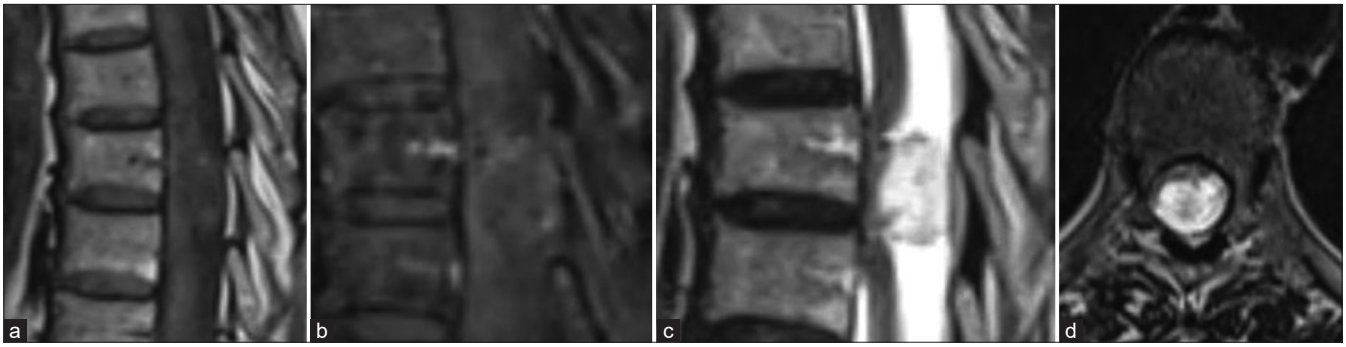


Figure 1: Posterior compressive intradural extramedullary mass at T7, (a) slightly hypointense in T1-weighted sequences, (b) with a discrete annular peripheric enhancement in T1 injected fat saturation (FAT SAT) sequences, (c and d) and hyperintense in T2-weighted sequences.

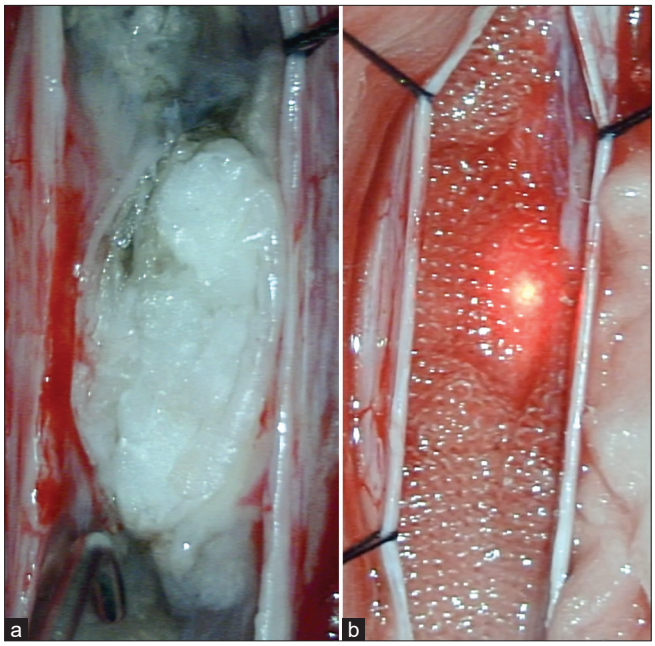


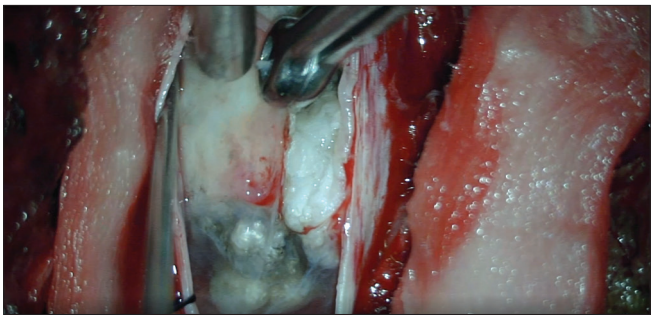
Figure 2: Intraoperative picture of the epidermoid cysts (a) before and (b) after gross total resection.

laminectomy. On completing the posterior durotomy, an intra-arachnoidal spinal cord lesion was compressing the cord to the right. The lesion appeared avascular, firm, and pearly white with gray areas [Figure 2a]. Following careful dissection of the roots away from the lesion, a gross total resection (GTR) was achieved [Figure 2b and Video 1]. The histological examination confirmed that the lesion was an EC. Immediately postoperatively, the patient clinically improved, with resolution of spasticity within 5 weeks but leaving residual 3/5 paraparesis.

DISCUSSION

Two different types of EC

Two different types of intradural/extramedullary EC have been described. Congenital lesions with associated cutaneous and/or osseous malformations versus acquired/iatrogenic tumors attributed to invasive spinal procedures or trauma.[2,4,6,8,11] Thoracic EC accounts for <1% of all spinal EC, while the majority occur in the lumbar spine.[9] Our review of the literature revealed 11 cases of thoracic intradural/extramedullary EC; four cases were isolated, one being reported in an elderly patient [Table 1].[1,3,7,10]



Video 1: Intraoperative video of gross total resection. Following durotomy, careful dissection of the roots away from the lesion is performed. Gross total tumor resection is then achieved.

Surgery for EC

GTR of EC is the gold standard and includes resection of all involved membranes. Barbagallo *et al.* underlined the importance of microsurgical resection of intradural/extramedullary EC respecting the anatomy of the subarachnoid compartment to avoid recurrence.[1] Suppose monobloc resection is not possible with large tumors. In that case, the mass should be debulked, and one should avoid the spreading of cyst contents into the surrounding subarachnoid space to prevent chemical arachnoiditis and/or meningitis.

CONCLUSION

The optical treatment for EC is gross total tumor resection to maximize the quality of outcomes and avoid recurrence, chemical arachnoiditis, and aseptic meningitis.

Table 1: Illustration of some cases of thoracic intradural extramedullary epidermoid cysts upon literature review.

Authors	Year	Age	Gender	Level	Cause	Clinical signs	Recurrence
Deogaonkar *et al.*	1995	32	Female	T7, anterior	Not known	Spinal cord compression with paraplegia	Three months follow-up
Chang *et al.*	1996	9	Female	NM	Congenital	Spinal cord compression with spasticity	–
Scarrow *et al.*	2001	37	Female	T4–T5	Isolated	Spinal cord compression with spasticity	One month follow-up
Celik *et al.*	2016	38	Female	T5–T6, posterior	Isolated	Weakness of lower limbs	–
Barbagallo *et al.*	2017	40	Female	T3–T4	Isolated	Spinal cord compression with paraplegia	No (4-year follow-up)
Maeda *et al.*	2019	78	Female	T1–T2	Isolated	Spinal cord compression with paraplegia	Four months follow-up

Ethical approval

The Institutional Review Board approval is not required.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-Assisted Technology for Manuscript Preparation

The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript, and no images were manipulated using AI.

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