



SPINAL EXTRADURAL ARACHNOID CYST

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ABSTRACT **Background:** Spinal extradural arachnoid cysts are rare cause of compressive myelopathy with various presentations. They account for 1% of spinal tumors

Case: A 21 years female patient presented to us with mild dull aching pain in the intrascapular region. MRI revealed extradural cystic lesion posterior to the thecal sac of size $2.3 \times 1.0 \times 1.9$ at D5-D6 level with mild extension into medial part of right D5-D6 neural foramen. Laminectomy (Partial D5 and complete D6) and complete excision of cyst was done, there was no dural defect.

Conclusion: Surgery is indicated for symptomatic patients. Complete excision of cyst with repair of dural defect remains standard procedure and provides cure.

Conclusion: Extradural arachnoid cysts are primarily treated with total removal of the cyst wall and closure of the dural defect. It's a rare lesion requiring surgery only.

KEYWORDS : Spinal extradural arachnoid cyst, laminectomy, asymptomatic patients

INTRODUCTION

Extradural arachnoid cysts of the spine are a rare cause of spinal cord and nerve root compression, usually in the mid to lower thoracic spine and at the thoraco-lumbar junction in a posterior position accounting for only 1% cases of spinal tumors¹⁻³.

Spinal extradural arachnoid cyst is mostly found in males in their second to fifth decades⁷. Extradural arachnoid cysts results from tiny Dural defect through which out pouching herniation of arachnoid membrane takes place. They may enlarge with time and can exert mass effect over cord and/or root and produce myelopathy and radiculopathy¹⁻⁵. Small, asymptomatic cysts can be observed but symptomatic cysts require surgery. Various surgical techniques have been described but still there is no consensus^{1,2-6}. Here a case report of extradural arachnoid cysts in young female.

CASE REPORT

A 21 years female patient was presented with chief complaints of the abnormal sensations in the intrascapular region for the last one year, with no motor weakness. She was earlier treated at many centers and given symptomatic treatment for the same. She presented to our hospital, MRI was done which revealed a well-defined extradural cystic lesion posterior to the thecal sac of size $2.3 \times 1 \times 1.9$ at D5-D6 level with mild extension into medial part of right D5-D6 neural foramen (Figure 1).

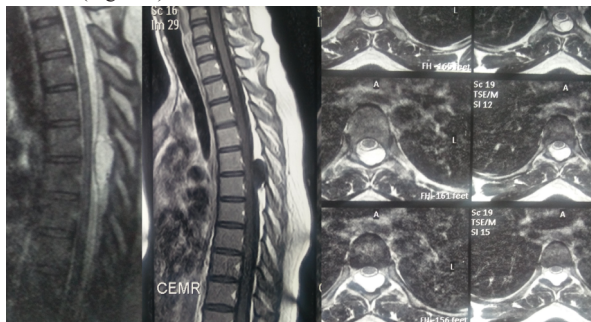


Figure 1 Preoperative MRI shows extradural cystic lesion posterior to the thecal sac of size $2.3 \times 1.0 \times 1.9$ at D5-D6 level.

Patient was operated with laminectomy (partial D5 and complete D6) Cyst wall was opened with care not to injuring the underlying intact dura, around 100-120 ml of clear CSF came (Biochemical analyses revealed CSF). Excision was done completely. (Figure 2).

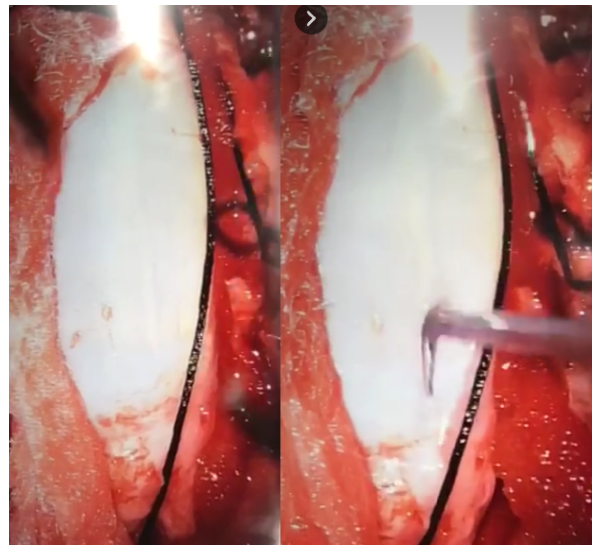


Figure 2. Intraoperative microscopic photography of case on bony exposure, shows thinned, transparent cystic membrane is found extradural arachnoid cyst.

There was no defect in the posterior wall of the dura, examined under microscope. The Wound was closed in layers. Patient did not develop any complication. After surgery, patient showed improvement and was relieved of the paresthesia's. Histopathological findings were consistent with arachnoid cyst.

DISCUSSION

Spinal extradural arachnoid cyst rare disease entity accounting for 1% of all spinal tumors¹. Thoracic spine is most common location²⁻⁴ with male predominance. In regards to age distribution, spinal arachnoid cysts can present at any age; however, thoracic spinal arachnoid cysts predominantly present during adolescence. Spinal extradural arachnoid cyst results from herniation of arachnoid membrane through the tiny dural defect^{2,3}. These cysts communicate with subarachnoid space through which CSF accumulates^{2,7}. Etiology of these dural defects still remains unclear they can be congenital or acquired^{2,3,5}. These herniation's enlarges with Valsalva^{1,6}. Rarely, the cyst does not have any communication with subarachnoid space^{1,8}. Etiology of the Spinal extradural arachnoid cyst is debateable^{8,9}. These defects may act like valve as defects are small and arachnoid herniates beyond their

margins. Rootlets may also get trapped and it again act like a valve³. As enlargement continues, a SEAC can aggravate spinal cord compression or nerve root compression, which leads to myelopathy or radiculopathy^{3,5}. Nabors et al.¹⁰ classified in to 3 categories:

Type 1: Extradural cyst without nerve tissue.

1A- Extradural meningeal cyst,

1B- Sacral meningocele.

Type 2: Extradural cyst containing nerve tissue.

Type 3: Spinal cyst.

In our case, there was extradural cyst without any nerve tissue so it was type 1A. MRI is the most useful tool for diagnosis. Javier Quillo-Olvera et al. did evacuatory puncture of cysts in his study and followed¹¹. In our case, we had small cyst measuring $2.3 \times 1 \times 1.9$ at D5-D6 level with mild extension into medial part of right D5-D6 neural foramen, We did partial D5 and complete D6 laminectomy and removed whole of the extradural cyst. Though Spinal arachnoid cysts, whether intradural or extradural, are an uncommon cause of myelopathy secondary to spinal cord compression.¹²⁻¹⁴ treatment is mandatory.

Conclusion: Extradural arachnoid cysts are primarily treated with total removal of the cyst wall and closure of the defect if present. It's a rare lesion requiring surgery only. The etiology, pathogenesis and treatment of the spinal extradural have yet to be well established. Neurological recovery seems to depend on the size of the cyst and the degree and duration of the spinal cord compression. In cases of spinal arachnoid cyst, particularly in younger age, with associated syndromes and with shorter clinical duration of symptoms tends to have neurological recovery. It's rare to have a extradural cyst at younger age, We performed laminectomy complete excision of cyst wall.

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