

Spinal synovial cyst presenting with radiculopathy

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Abstract

Synovial cyst (SC) is one of the relatively rarer spinal pathology which can lead to radicular feature. The most common differential diagnosis is herniation of intervertebral disc (HID).

A 34 year-old male patient presented to orthopedic surgeon with the history of right thigh pain on and off. The case was then referred to us. On examination, he had mild hypoesthesia over fronto lateral aspect of right thigh and knee jerk was slightly diminished. Repeat magnetic resonance imaging (MRI) of lumbosacral spine was done as previous image quality was poor.

New MRI suggested cystic lesion at L2-3 on right side suggesting most likely synovial cyst.

With midline incision, right hemilaminotomy was done and thecal sac and nerve root was exposed. When thecal sac and nerve root was retracted, cystic lesion was very clearly seen arising from facet joint. Complete excision was done and sent for histological evaluation which showed features of synovial cyst.

Post operatively, thigh pain disappeared and patient went back to normal work after 1 month of surgery.

The main purpose of this article is to emphasize that synovial cyst is one of the possible, though rare, etiology of radiculopathy. Though it occurs in older age group it can be found in younger people also as in our case. Surgical exploration and radical resection is the way to cure it.

Key words: synovial cyst, lumbar spine, radiculopathy, surgical resection

Introduction

Cystic lesions are rare but possible spinal lesions. Synovial cyst (SC) is a relatively rare spinal pathology presenting with radiculopathy. Herniation of intervertebral disc (HID) is the most common differential diagnosis of this condition. It usually develops due to degenerative changes or trauma.¹ It occurs in elder age group, usually beyond 6th decade of life and is rarer in < 40 years of age.^{2,3} It can present with other variety of symptoms like spinal canal stenosis, claudication, neurological deficits etc. Infection of SC presenting with acute neurological problem has also been reported.⁴

It is most commonly found in lower lumbar region. However, rarely it can also develop at unusual location like high cervical spine and can present with lower cranial symptoms as was reported earlier.⁵ Extraforaminal SC is another unusual location.⁶

Case Report

A 34 years old male patient presented to orthopedic surgeon with the history of right thigh pain on and off. His MRI seemed to be grossly normal except for doubtful mild disc herniation at L2-3 level. Conservative treatment was continued but no improvement was observed.

The case was then referred to us. On examination, he had mild hypoesthesia over fronto lateral aspect of right thigh and knee jerk was slightly diminished. Repeat MRI of lumbosacral spine was done as previous image quality was poor.

New MRI T1W image showed hypointense lesion at L2-3 on right side suggesting disc herniation. However T2W image showed hyperintense lesion at the same site suggesting more of a cystic lesion, most likely synovial cyst.



Fig. 1: MRI T1W image, sagittal section of lumbar spine showing a mass isointense to disc tissue at L2-3 disc space.



Fig. 2: MRI T2W image, sagittal section of lumbar spine showing hyperintense lesion suggesting a cyst at L 2-3 disc space.

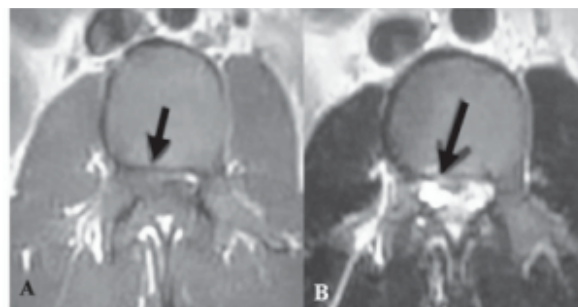


Fig. 3: MRI axial sections of lumbar spine at L2-3 level, A) T1W image, B) T2W image showing the lesion

With midline incision, right hemilaminotomy was done and thecal sac and nerve root was exposed. When thecal sac and nerve root was retracted, cystic lesion was very clearly seen arising from facet joint.

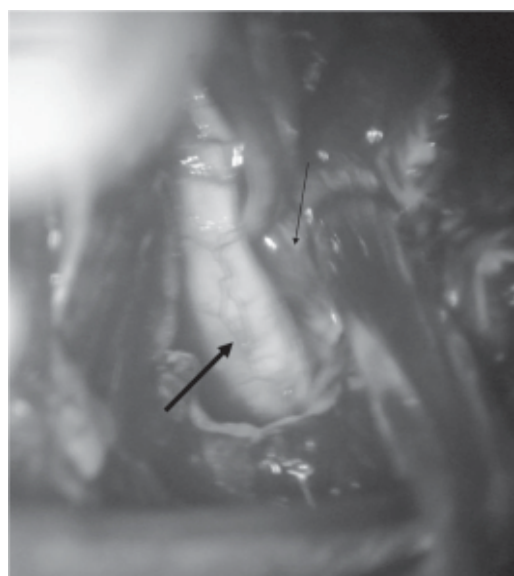


Fig. 4: Intraoperative picture showing the cystic lesion (thin arrow) on the side of nerve (thick arrow)

While manipulating the cyst, it ruptured and clear fluid came out of it. Never was completely freed from it and complete excision was done. Bed of the cyst from where it arose was completely coagulated with bipolar cautery.

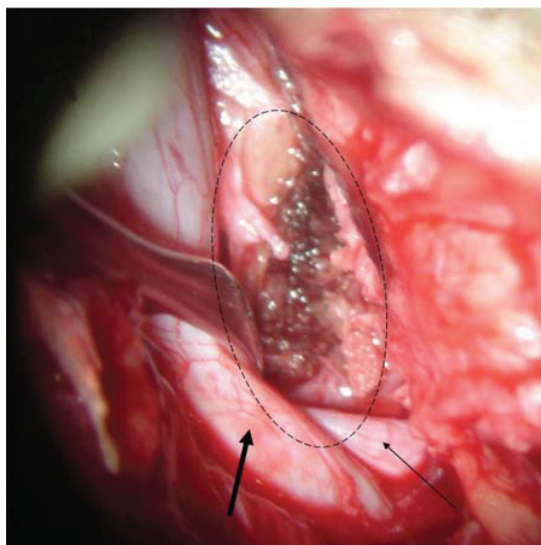


Fig. 5: Intraoperative picture showing complete excision and coagulation of the cyst bed

Specimen was sent for histological evaluation which showed evidence of synovial cyst.

Post operatively, thigh pain disappeared and patient went back to normal work after 1 month of surgery.

Discussion

Different types of cystic lesions in spine are SC cyst, ganglion, cyst of posterior longitudinal ligament, cyst of ligamentum flavum etc. Among them SC is relatively more common.

SC is more common in older people due to degeneration of facet joints and its ligaments. It is said to be unusual below forty of age. However, our patient was a 34 year-old young man. Literature has shown that it has been found in even younger age group and teenagers as well.³ Moreover, these cysts are said to be caused and aggravated by trauma which was not present in our case.

MRI is the investigation of choice for any spinal lesion which usually clearly shows the cystic lesion.⁷ In our case though T2W image showed cystic nature of lesion, T1W image showed lesion isointense to disc tissue. Therefore, there was diagnostic and thus therapeutic dilemma at first. Surgery was the only option and thus performed for exploration purpose.

SC is more commonly found in lumbar region, more commonly lower part of lumbar spine, probably due to the fact that this is a very mobile and weight bearing part of

spine, more prone to degeneration. The lesion was in upper lumbar region in our case. Thoracic synovial cyst has also been reported in literature.⁸

Intraoperatively, with partial hemilaminectomy of L2 right lamina, well encapsulated cystic lesion was found at L2-3 disc space level arising from the facet joint. While dissecting the cyst, it ruptured and clear cystic fluid came out. Total resection was done and its base well coagulated with bipolar cautery. Histopathological evaluation revealed features of SC.

SC has a single layer of epithelial cells in the inner layer of the cyst with continuity with the facet joint. However other types of cyst don't have continuity with the facet joint and this intraoperative finding is vital to differentiate SC from others.⁹

Few complications associated with SC are infection, spontaneous hemorrhage, recurrence after surgery.^{4,2,9,10} It has been found that back pain and radiculopathy has recurred within first 2 years.¹¹

In conclusion, synovial cyst is one of the possible, though rare, etiologies of radiculopathy. Though it occurs in older age group it can be found in younger people also as in our case. Surgical exploration and radical resection is the way to cure it.

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