

Spinal Subdural Abscess Mimicking An Intradural-Extramedullary Tumor- A Rare Case Scenario

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Submitted: 14 Apr 2020; Accepted: 21 Apr 2020; Published: 30 June 2020

Abstract

Spinal subdural abscesses (SSA) are very rare disease. The etiologies of SSA are hematogenous spread, iatrogenic contamination, and local extension. Elevated WBC counts, ESR, and C-reactive protein are usually found in laboratory tests. But they are not sensitive indicators of SSA, especially chronic abscesses patient tend to have a less specific characteristic. We report the case of a healthy child with subdural abscess referred to our hospital as an intradural–extramedullary (IDEM) tumor.

Keywords: Acute Subdural Abscess, Intradural–Extramedullary Tumor, Spinal Cord Tumor

The patient presented with pain in the back and left leg with radiation and weakness of both the lower limbs, power of 2/5 both lower limbs. In a contrast MRI scan, a rim-enhanced mass-like lesion was seen at the L1/L2 level.

But adjacent ill-defined epidural fat enhancement that are unusual imaging manifestation for IDEM tumors was seen. He had no fever and normal WBC, ESR, and CRP We suspected acute spinal subdural abscess and immediately performed surgical evacuation. In the surgical field, tensed dura was observed and pus was identified after opening the abscess capsule. Because spinal subdural abscesses are difficult to diagnose, we not could differentiate with IDEM tumor exactly and an exact history taking, contrast MRI are required for accurate diagnosis. Patient power improved significantly in the post op period with power to 4/5 and able to walk on the 2 nd post operative day.

Introduction

With the development of treatment technologies in recent years, the mortality rate of spinal cord abscesses has decreased. However, spinal cord abscesses are still rare and difficult to treat. Although most spinal abscesses are extradural, they can also be intradural–extramedullary (IDEM) or intramedullary [1,2]. Abscess in the intradural–extramedullary space are usually called spinal subdural abscesses. The Spinal subdural abscesses (SSA) were first described by Sitting in 1927, and only 69 cases of spinal subdural abscess have

been reported in the literature since then [3-5]. The SSA involves hematogenous spread, iatrogenic contamination, and direct spread [6,7]. Except for two previously reported cases, patients usually have obvious etiology, recent history of infection or procedure, or an anatomical defect [10,12]. We present the case of a healthy man with a SSA without fever, leukocytosis, or meningeal irritation. The patient presented with no infection signs and no history of trauma.

Case Report

A 6 year old child was referred to our hospital from other hospital for an intradural–extramedullary tumor. The patient complained of lower back, left buttock and posterior thigh pain for 5 days with weakness of both lower limbs for past 5 days and not able to stand or walk without support. Patient had underwent MRI Plain and Contrast of the whole spine and it was reported as an Intradural –Extramedullary tumor? Ependymoma? Neurogenic tumor. But adjacent ill-defined epidural fat enhancement that are unusual imaging manifestation for IDEM tumors was seen. Tumor was located in the Conus region at L1 and L2 which itself is rare presentation. He had no fever and normal WBC, ESR, and CRP We suspected acute spinal subdural abscess and immediately performed surgical evacuation. In the surgical field, tensed dura was observed and pus was identified after opening the abscess capsule, abscess capsule was reddish brown .Pus culture was sent and it showed growth of Staphylococcus aureus. Because spinal subdural abscesses are difficult to diagnose, we not could differentiate with IDEM tumor exactly and an exact history taking, contrast MRI are required for accurate diagnosis. Patient power improved significantly in the post op period with power to 4/5 and able to walk on the 2 nd post operative day. After abscess

removal, an appropriate antibiotic, Inj Cefperazone and Inj Amikacin according to the weight of the patient was injected for 4 weeks.

Patient was discharged on the 5th post operative day with antibiotics coverage according to culture sensitivity report. On follow up for 6 months now, patient is stable and no deterioration or recurrence has been noted.

Discussion

Spinal subdural abscess is rare. Although previous literatures were well described, they are not well distinguished spinal subdural abscesses from subdural empyema. Abscesses have a capsule with normal structure that separates pus, while empyema involves the accumulation of pus in a preexisting cavity. Although abscesses and empyema are not the same, they are known to have similar etiology, pathogen, symptoms, progression, and treatment.

In the previous literatures, almost SSA has obvious etiology [10,12]. The etiology of spinal subdural abscess was known to be hematogenous spread, iatrogenic contamination (lumbar puncture, discogram, previous surgical history), and local extension. Predisposing factors are anatomical abnormalities of the spinal cord, congenital dermal sinus, acquired immunodeficiency syndrome, DM, drug abuse, and repetitive meningitis.

The lumbar spine is the most common region for spinal subdural abscesses, and the most common pathogen is staphylococcus aureus [2-4]. The symptoms of SSA are fever, back pain, paralysis, and spinal symptoms such as weakness and voiding dysfunction. According to the report of Bartels et al. (2), Fever was the initial symptom in 56.6 % of 44 patients.

In MRI scans, increased signal intensity in T2-weighted images, decreased the signal intensity in T1-weighted images, and rim enhancement in contrast enhanced T1-weighted images strongly suggests an abscess [4,6]. Differential diagnosis from an IDEM tumor such as schwannoma or neuroma and an epidural or subdural hematoma is needed [7].

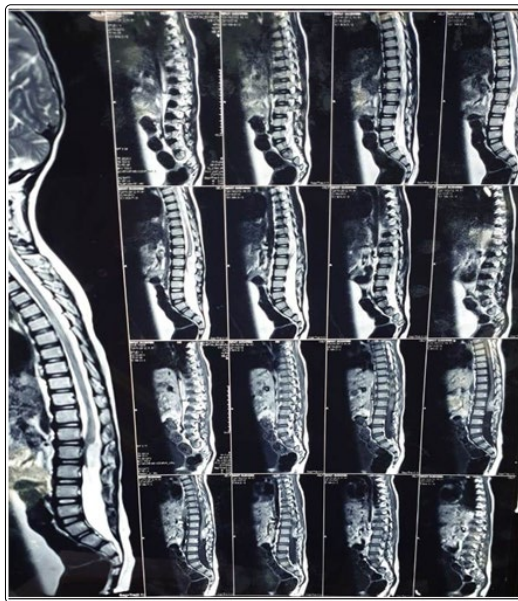


Figure 1: T2 MRI Saggital sections showing hyperintense lesion located in L1 and L2 region intradural-extramedullary lesion

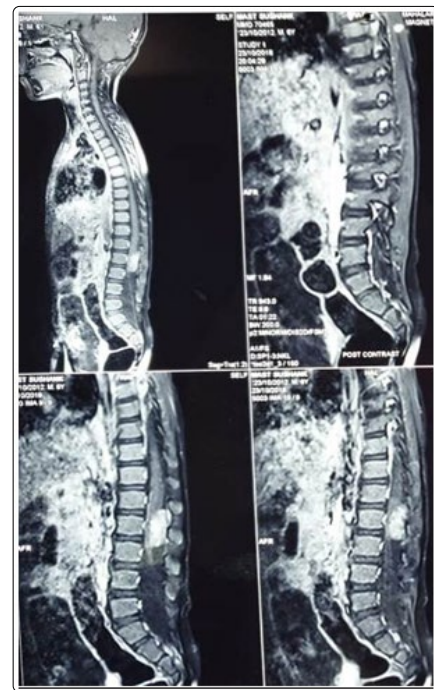


Figure 2: T1 Contrast MRI Saggital sections showing heterogeneously enhancing lesion with ill defined rim located in L1 and L2 region intradural-extramedullary lesion

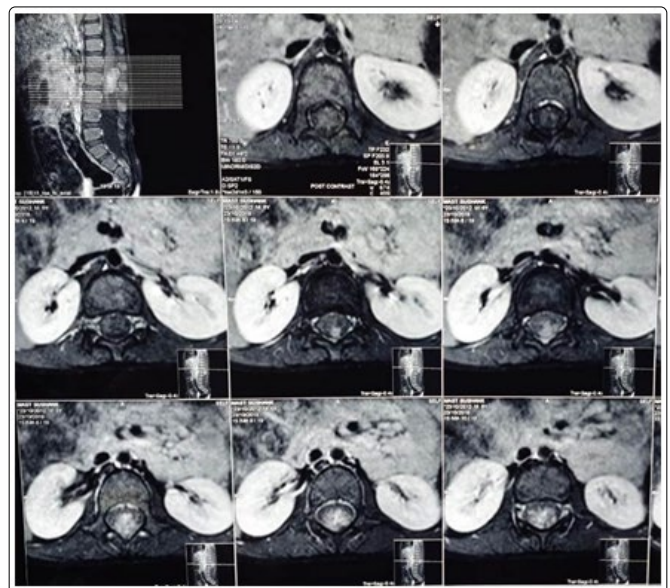


Figure 3: T1 MRI contrast axial sections showing a lesion with heterogenous enhancement involving conus-cauda region IDEM

When a spinal subdural abscess is diagnosed, prompt surgical evacuation and appropriate antibiotic therapy are necessary. To determine the appropriate antibiotics, pus should be tested in aerobic and anaerobic cultures for antibiotics susceptibility.

Peculiarity of this case is that the patient has no obvious evidence of spinal abscess and was misdiagnosed to be IDEM tumor, but abscess could be presented atypically, and there were no obvious risk factors for the occurrence of abscess and age of the child was also a peculiar feature. Hence, we should differentiate spinal abscess and

IDEM tumor in MRI scan and always a thought of spinal subdural abscess to be kept in mind.

Conclusion

In the previous literatures, only three cases had similar clinical and laboratory course [11]. In this case, it would have been difficult to suspect pyogenic spinal cord infection without the contrast-enhanced MRI scan. Because chronic SSAs are difficult to diagnose, we could not differentiate with IDEM tumor exactly and an exact history taking, contrast MRI are required [1-12].

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