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Spinal intramedullary cysticercosis mimicking spinal tumour

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ABSTRACT

Neurocysticercosis is a relatively uncommon entity with even more rare spinal intramedullary variety. We present a case of cervico- dorsal intramedullary NCC mimicking spinal tumour with per operative finding mimicking abscess.

Keywords
neurocysticercosis,
intramedullary,
spinal tumour

INTRODUCTION

Cysticercosis is caused by larval stage of tape worm Taenia Solium and is the single most common parasitic cause of epilepsy in resourse-poor endemic region.

Prevalence of NCC may reach up to 4% in endemic population with about 1.5-3% prevalence of all NCC as spinal cysticercosis.

Most common site for NCC as described is subarachnoidal space with intramedullary involment, and extremely rare in spinal NCC scenario.

CASE REPORT

A 17years old female presented with lower back ache for last 8 months with bilateral lower limb weakness for last 1 months which was gradual in onset and progressive with bowel disturbance and urinary complaints.

On neurological examination, there was motor weakness with 0/5 power in bilateral lower limb with exaggerated deep tendon reflexes in lower limbs.

The MRI reveled a solitory focal well defined rounded intramedullary mass lesion at C7-D1 level. The lesion showed T2 hyperintens rim with central T2 hyperintesity and was isointense on T1 images (Figure 1). Mild perifocal hyperintensity suggestive of edema but no other focal lesion observed.

She underwent C7 to D1 laminectomy with mid-line myelotomy with drainage of yellow coloured pus material with biopsy of contained margins (Figure 2). Afterwards irrigation was done and dura was repaired.

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Neuropathological examination revealed examined biopsy specimen with invaginated scolex of cysticercosis with hooklets and surrounding tissue with fibrocollagenous wall with an area of inflammatory reactions comprising of modified histiocytes, few plasma cells and neutrophils.

In early post-operative analysis, no foci of other sources of cysticercosis were found. Her neurological status remained stable and no additional deficits occurred.

Patient was discharged with relief in pain symptoms with bilateral lower limb power improvement to 1/5 with elevation of bladder and bowel symptoms. At two months follow up, the patient developed power of 4/5 in bilateral lower limbs.

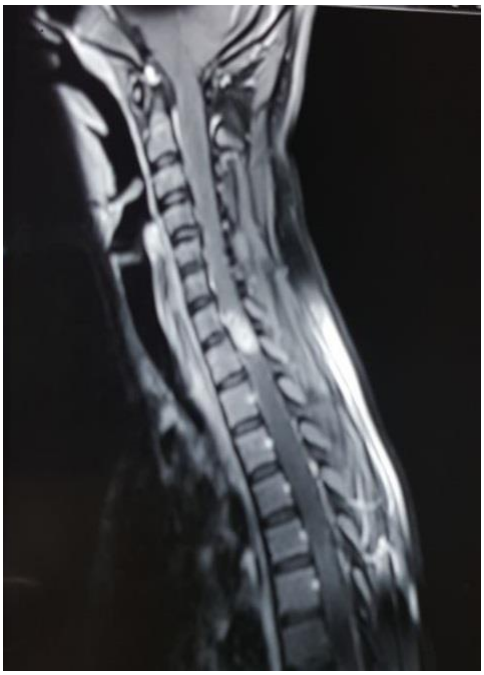
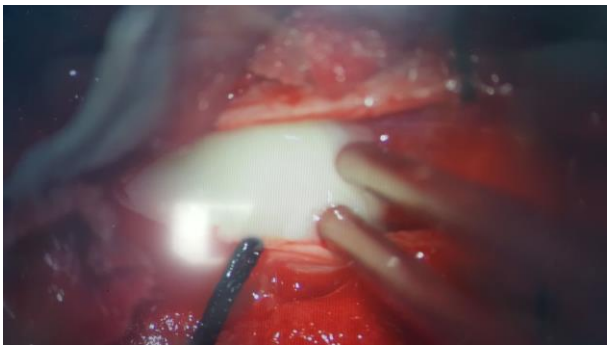


Figure 1. MRI T1 WI showing hyperintense lesion at C7-D1 level.

Figure 2. Yellowish coloured fluid draining out of the intramedullary component of the lesion.



Discussion

Worldwide, cysticercosis is the most common parasitic infection affecting the CNS. NCC typically involves the brain parenchyma, intracranial subarachnoid space, or ventricular system and is often self-limited unless hydrocephalus requires surgical intervention. Spinal NCC is rare even in endemic regions, and may require more aggressive management because of the natural confines of the spinal canal. The location and the size of the lesion, and the inflammatory response generated by cyst breakdown are the important factors in the management of spinal NCC.

Spinal cysticercosis can be leptomeningeal, intramedullary or epidural. Leptomeningeal is the most frequent, intramedullary is quite rare and epidural is an extremely rare form. Spinal involvement is quite rare and the migration of the cysticercus through the ventriculo-ependymal pathway and hematogenous dissemination has been hypothesized to be the possible mechanism. However, Queiroz *et al.* did not find any evidence for ependymal route of spread of intramedullary cysticercosis. Rokitansky, in 1856, firstly described intramedullary cysticercosis. Because of limited space in the spinal canal, mass effect of these lesions is poorly tolerated necessitating for aggressive management.

Blood flow to the brain is approximately 100-fold greater than that of the spine explaining the lower incidence of spinal cysticercosis. In the spine, thoracic cord has higher incidence due to high blood flow in this segment. Queiroz et al. estimated the location of cysticerci in spine as: cervical-34%, thoracic- 44.5%, lumbar-15.5% and sacral-6% .

MRI is the investigation of choice. Mathuriya et al. described MRI findings for various stages of intramedullary cysticercosis. Usually, MRI is described as hypointense rim with hyperintense core on T2WI and hypointense or isointense lesion on T1WI as is our case. However, these are not specific and the same changes can also be present in neoplastic, inflammatory, demyelinating, vascular, and granulomatous diseases. The entire neuraxis should be evaluated to find additional lesions.

In the present case, an isolated intramedullary cystic lesion was demonstrated at C7-D1 with absence of cranial cysticercosis.This is in contrast with the previous hypothesis that concomitant intracranial lesions are present in all patients with

spinal cysticercosis. Our finding is supported by Parmar et al. who found only 2 patients with brain neurocysticercosis among 6 patients with intramedullary cysticercosis. Perifocal edema was present in all of their 6 patients as in ours.

Surgical treatment is indicated in spinal NCC in which patients had severe and progressive neurological dysfunction regardless of whether medical therapy has been attempted. The inflammatory process may be so severe that some cysts cannot be readily or completely resected. Excision of intramedullary NCC lesions has been described as being possible after myelotomy or requiring microsurgical dissection from the parenchyma prior to removal. We performed a 3-level laminectomy plus midline myelotomy to reach the lesion and removed it subtotally in order to preserve the neural tissue.

Albendazole or praziquantel, with or without steroids are used. Albendazole is preferred because its blood levels are improved by corticosteroids, whereas those of praziquantel are diminished.

Finally, we conclude that spinal intramedullary cysticercosis represents a diagnostic challenge and surgery is required to decompress the cord, confirm the diagnosis and provide a route for definitive therapy. Patient recovery may be variable. Despite promising reports, the safety and efficacy of medical treatment remains unproved.

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