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Case Report Open Access

# Conus Terminallis Neurocysticercosis: A Rare Cause of Lumbar Radiculopathy

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## Abstract

**Introduction:** Neurocysticercosis (NCC) is a parasitic infection caused by the larvae of Taenia *solium*. Spinal neurocysticercosis presentation is an uncommon clinical condition especially if the only segment involved is cauda equine.

**Case report:** We present a 57 year old woman with a history of a lumbar radiculopathy in which the lumbar MRI showed an expansive lesion at conus terminallis level. The lesion was excised revealing parasitic cisticerci. An albendazol cycle was performed and 1 year after treatment she remains asymptomatic and no more lesions were identified.

**Discussion:** NCC is a rare condition, especially at the sacral region, and the diagnosis is difficult due to the non-specificity of symptoms being this case so relevant to resemble this entity in non-endemic areas like ours.

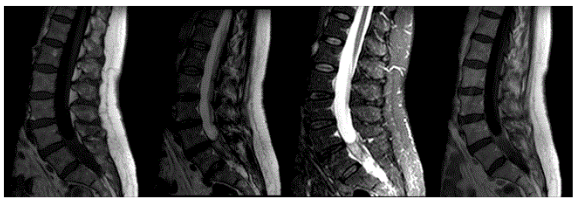
**Keywords:** Conus terminallis; Parasitic cysticerci; Radiculopathy

## Introduction

Neurocysticercosis (NCC) is a parasitic infection caused by the larvae of Taenia *solium* which affects humans mainly by accidental ingestion of eggs containing infective oncosferes. Its frequency in non endemic areas is increasing justified by migratory fluxes. Spinal neurocysticercosis presentation is an uncommon clinical condition, especially if the only segment involved is the *cauda equina* and can lead to irreversible neurological deficits if untreated. We present a case of neurocysticercosis in which the only symptom was a lumbar radiculopathy.

## Case Report

57 year old woman with a history of low back pain evolving for 4 months. She denied urinary and gastrointestinal disturbance, sensory or motor symptoms. She also had no fever or other systemic features. No relevant medical past to highlight. At neurological exam no relevant abnormalities were found including absence of sensory or motor deficits; only a positive left Lasegue sign and a left aquilian reflex diminished, suggesting a possible lumbar radiculopathy. Lower limbs electromyography confirmed a left L5-S1 radiculopathy, showing chronic neurogenic changes in the muscles supplied by these roots (motor unit action potential with a poliphasic pattern, high amplitude and poor recruitment in *anterior tibialis*, *peroneus longus* and *gastrocnemius* muscles; no spontaneous motor activity was found). Lumbar MRI showed an expansive lesion at the caudal end of lumbar canal, iso-intense to CSF in T1 sequences, with an heterogeneous signal intensity in T2 sequences and homogeneous gadolinium enhancement, suggesting ependymoma (Figure 1). Two weeks after the diagnosis a L4-S1 laminectomy was performed to excise the lesion that macroscopically was totally resected. Anatomopathological examination showed parasitic cysticerci with inflammatory infiltrate and necrotic areas (Figure 2). She was treated with albendazol 800mg/day during 30 days. Brain MRI revealed multiple calcifications suggestive of an old process of neurocysticercosis and cervico-dorsal MRI was unremarkable. CSF study performed 5 months after surgery was normal, including negative serology for *T. solium*. One year after surgery she remains asymptomatic and a lumbar MRI performed at that time showed no recrudescent lesions. Non endemic history was found.



A) B) C) D)

**Figure 1:** Lumbar MRI showing a space occupying lesion inside the vertebral canal, beginning at L3-L4 level and extending untill the caudal end of the lumbar sac. A) In the T1 weighted image the lesion is isointense to the cerebrospinal fluid B) C) The lesion has an heterogeneous signal intensity in the T2 weighted image and STIR sequence D) The lesion depicted intense and homogeneous gadolinium enhancement.

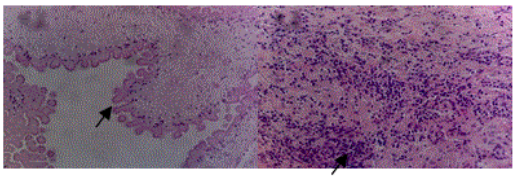



**Figure 2:** Anatomopathological examination of the lesion (hematoxylin eosin staining) A)x 40; cross section of lesion showing parasitic cisticerci (arrow in the membrane of cyst); C)x100; inflammatory cells (arrow)

## Discussion

Although NCC is the most frequent parasitic infection of the central nervous system, tipically affecting brain parenquima, subarachnoid spaces and ventricular system, the spinal involvement is rare [1,2] even in endemic areas, with an estimated prevalence of 0,7 to 5,85% [3]. The cysticerci spreads through arterial blood circulation which explain why in spinal segments the thoracic region is the most frequently affected. These cause inflammatory reaction and mass effect responsible for the symptoms [3]. The most common clinical manifestations are secondary to medullar compression (paraparesis, urinary and bowel dysfunction), being this case an exceptional presentation as an isolated lumbar radiculopathy result of a single lesion in an extreme unusual place as conus terminallis. The majority of reported cases of NCC at medulary level ranged between 20-45 years of age, and symptoms duration varied from one week to 10 years [3]. The diagnosis is suspected by MRI but the lesion has no specific features and the differential diagnosis includes neoplastic, inflammatory, demyelinating, vascular and granulomatous lesions so surgery is necessary to define the etiology. Like in our case surgical resection was mandatory because a tumor was suspected in lumbar MRI. Although primarily surgical, the treatment should be complemented with a regimen of medication because of the difficulty to remove the entire lesion. In our case one year after treatment CSF and lumbar MRI were negative so we consider the disease controlled

In sum, NCC is a rare condition, especially at the sacral region, and the diagnosis is difficult due to the non-specificity of symptoms being this case so relevant to resemble this entity in non-endemic areas like ours.

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