Primary Spinal Extradural Hydatid Cyst Causing Spinal Cord Compression: A Case Report

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Abstract

Background: Hydatid disease of the spine is caused by the parasite Echinococcus granulosus, a helminth belonging to the cestode group. Usually located in lungs or liver, hydatidosis of the bone occurs in only 0.5-4% of all hydatid locations, and half of these cases are located in the spine. We report a case of a spinal primary location of a hydatid cyst operated at our department.

Case presentation: The patient is a 52-year-old lady who was presenting a year before she consulted dorsalgia followed by a weakness of the lower limbs and urinary retention, spine MRI performed objectified an epidural cystic formation. The patient was operated and the lesion was removed without complications. The pathology study revealed the hydatid nature of the cyst.

Conclusion: The spinal hydatid cyst is a rare condition leading to major complications once there is spinal cord compression; early management and total removal of the cyst without rupture are the factors with the best clinical outcome and less recurrence.

Keywords: Hydatid disease; Spinal cord compression; Intraspinal cyst

Introduction

The spinal hydatid disease is a rare parasitic affection, causing in most cases a spinal cord compression and present a threat for the neurologic status, this affection put the surgeon face to many challenges in diagnosis (nonspecific symptoms or images), and in the management (poor response to medical treatment, per operative cysts spillage). We report a case of a primary location of a spinal hydatid cyst.

Case Presentation

The patient is a 52-years-old lady without past medical history who presented 40 days before she consults a back pain which evolved rapidly to weakness of the lower limbs. The clinical exam at the admission found a patient with paraplegia, abolishing of the knee and achilles reflex, a bilateral Babinski sign, and a left hypoesthesia at the tenth thoracic vertebra (Th10). Laboratory examinations found a Hyperleukocytosis to 16 × 10^3 U/L with 73% of granulocytes.

Initially a spine computer tomography (CT) was performed objectifying an osteolytic process of Th10, Th11 and Th12 involving the posterior arches (Figure 1). The spine MRI objectified a cystic formation of 30 × 17 mm with low intensity in T1 weighted images, high intensity T2 weighted images, and an enhancement after injection of gadolinium of the cyst’s wall as well the posterior arches of the osteolytic vertebrae which delimitate a necrotic area (Figure 2). Chest X-rays and abdominal ultrasound then a thoracoabdominal CT were performed without hydatidosis signs. The patient underwent surgery; the total removal of the cyst and its capsule was achieved through the laminectomy of Th10, Th11 and Th12. Pathologist study confirmed the hydatid nature of the cyst.

In post operative the patient presented a relief of her back pain but without improvement of the motor deficit so she was oriented to

Figure 1: Pre-operative CT showing osteolysis on the Th 10 vertebrae (the arrows).

Figure 2: Pre-operative T1 weighted imaging spinal MRI. A: coronal slide B: sagittal slide and C: axial slide; showing the cyst exerting a major spinal cord compression at the level of Th 10 vertebrae (the arrows).
Discussion

Hydatid disease is caused by a parasite Echinococcus granulosus, a helminth belonging to the cestode group, humans are accidental intermediate hosts [1-6]. According to WHO cystic echinococcosis is globally distributed in most pastoral and rangeland areas of the world, with highly endemic areas in the eastern part of the Mediterranean region, northern Africa, southern and eastern Europe, at the southern tip of South America, in Central Asia, Siberia and western China.

The symptoms are not specific, medullary or radicular symptoms are present, the signs are closely depending on the cyst localization, the back pain is present in 85% of cases [7], and paraplegia in 25-50% of cases [8], a cauda equina syndrome has been described in some cases [9]. The most common sites of occurrence of hydatid cysts are the liver in 60% of cases and lungs with 20-30% of all cases [10]. Bone affection is rare (0.5-4%) of which spine involvement is seen in half of the cases [1-9]. It involves most likely the dorsal spine [2-8] which is the case of our patient. In a Review of the Literature by Neumayr and al they found that only 17.9% (120 cases) of all reviewed spinal hydatidosis cases had a history of extraspinal hydatid disease or were found to have concomitant newly diagnosed extraspinal hydatidosis [2]. The primary location in the spine can be explained by the presence of the portal vertebral shunt theory [5-9].

Brathwaite and Lees classified spinal hydatid cysts into five radiological types: I: intramedullary, II: extra medullary intradural, III: extra dural but intra spinal, IV: vertebral, and V: para vertebral [4]. The three first types are extremely rare [6-9]. Laboratory tests are less helpful for the diagnosis than the liver location: the most common findings include hypereosinophilia, serologic tests are positive in only 40% of the cases, the three first types are extremely rare [6-9]. Laboratory tests are less helpful for the diagnosis than the liver location: the most common findings include hypereosinophilia, serologic tests are positive in only 40% of the cases. Bone affection is rare (0.5-4%) of which spine involvement is seen in half of the cases [1-9]. It involves most likely the dorsal spine [2-8] which is the case of our patient. In a Review of the Literature by Neumayr and al they found that only 17.9% (120 cases) of all reviewed spinal hydatidosis cases had a history of extraspinal hydatid disease or were found to have concomitant newly diagnosed extraspinal hydatidosis [2]. The primary location in the spine can be explained by the presence of the portal vertebral shunt theory [5-9].

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The spinal hydatid disease is rare, and the intra spinal location is the less seen, the spinal location is independent to other locations, the clinical exam is not specific nether the imaging and the laboratory tests are not reliable, reporting such cases will help the surgeon to raise the diagnosis of the hydatid cyst and then deal carefully with its capsule to prevent the rupture which is the major incident.

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