Recurrent Chest Wall Hydatid Disease with Spinal Involvement: A Case Report

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Abstract
The dorsal spinal column is rarely affected by hydatid disease whereas recurrence of chest wall hydatid disease associated with spinal involvement is extremely rare. Here we present a 33 year old patient living on a farm with a history of operation for hydatid disease of chest wall previously. He admitted in hospital with upper back pain, left leg pain and walking difficulty. Radiological evaluation revealed multiple lesions on the chest wall and dorsal vertebrae. Surgery was performed and anti-helmintic treatment was administered following surgery. The clinical presentation and treatment of this rare case is discussed in this article.

Keywords: Hydatid disease; Chest wall; Anti-helmintic treatment

Introduction
Hydatid disease is a zoonotic Echinococcus (E.) infection that is endemic in eastern Turkey where sheep and cattle farming are common. There are two main types of pathogens that cause hydatid disease. E. granulosus is the most common type, but E. multilocularis is the invasive type and it can also mimic malignant tumors [1]. Cystic lesions are mainly found in the liver (75%), lungs (15%), brain (2–4%) and within the spinal canal (1%) [2]. Braithwaite and Lees divide spinal hydatid cyst in to five groups, namely; 1) Intramedullary 2) Intradural extramedullary 3) Extradural 4) Cyst from vertebrae and 5) Paravertebral [3]. According to this classification, type 3 and type 5 cysts are presented in this case due to a recurrent chest wall hydatid cyst involving dorsal vertebrae and the spinal canal.

Case Report
A 33-year-old male patient living in a farm presented to outpatient clinic with a history of pain in the upper back and left leg, and walking difficulty. He had undergone lung surgery 12 years ago for a hydatid cyst (The radiological imaging and details of previous treatment is absent due to personal archive issue). Physical examination revealed no abnormalities other than remnant surgical scar tissue. Neurological examination revealed bilateral (more prominent on the left side) hypoesthesia below T4 dermatome, hyperactive deep tendon reflexes on the left side and bilateral lower extremity muscle strength of 4/5 on Medical Research Council (MRC) Scale. A Magnetic Resonance Imaging (MRI) revealed four lesions: two at T4-T5 and a further two from T9 to T11 levels (Figure 1). The first lesion was 16 × 37 mm in dimension, originated from the right posterior pulmonary wall, invaded the T4 vertebral body and showed linear contrast enhancement. The second and third cystic lesions, which were anteriorly located on T10 level, showed compression on the spinal cord. The fourth lesion, 56 × 67 × 75 mm

Figure 1: T2-Weighted preoperative sagittal (A), axial T4 Level (B), and axial T10 Level (C) MRIs.

Figure 2: T2-Weighted postoperative MRI two years after surgery, sagittal (A), axial T4 Level (B), and axial T10 Level (C).
in dimension, was located between the thoracic wall and the costae from T9 to T11 and partially infiltrated the transverse process and the vertebral bodies of T9 and T10.

A posterior approach with double incisions was chosen to perform the surgery. The first midline vertical incision from T10 to T12 allowed total removal of the first two lesions. The second midline vertical incision at the T4 level allowed removal of the last two lesions near totally via a costotransversectomy approach (Figure 2, 3). Histopathological examination revealed acellular eosinophilic lamellar layers, germinative membrane, and simple epithelial cyst wall (Figure 4). Due to these histopathological findings, the lesions were accepted as hydatid cysts. After the surgery, the complaints of the patient resolved and he was administered albendazol 400 mg daily for 6 months. Follow-up two years after surgery, the patient is well and free of symptoms.

**Discussion**

Intrathoracic extrapulmonary involvement of hydatid disease represents 7.4% of all hydatid diseases. Of these, localization in the chest wall involves 14% [4]. The most frequent localization of spinal involvement in hydatid disease is the dorsal vertebrae (49.9%) [5]. In recurrent cases, simultaneous chest wall and spinal localizations are extremely rare [6].

In this case the disease infestedate the vertebrae, the posterior chest wall, the paraspinal area and the spinal canal. The periosteal barrier is believed to prevent intervertebral disc invasion [7].

In recurrent cases when the cysts involve epidural space [13]. Back pain is the most common complaint. Neurological deficit occurs in 25–84% of cases when the cysts involve epidural space [13].

Surgery accompanied by the administering of anti-helminthic medication is the treatment of choice for patients with neurologic deficit. Laminctomy followed by total excision of the lesions is the main goal for a successful surgery. Cysts can rupture spontaneously or during surgery therefore spinal hydatid disease has high recurrence rates (30–40%) [14]. Irrigation of surgical space with hypertonic saline solution can help preventing recurrence [14]. In the early postoperative stage, anti-helminthc adjuvant therapy should be given.

**Conclusion**

Spinal hydatid disease is an uncommon condition and recurrence of the chest wall hydatid disease associated with spinal involvement is extremely rare. Surgery is the treatment of choice for patients with spinal cysts causing neurological deficit. Although surgery is the best option for these patients, adjuvant medical therapy is needed since the recurrence rates are still high. Prevention measures such as enhancing sanitary conditions of farms in regions where the disease is common and building control strategies are the best solution for hydatid disease.

**References**


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