



# A Vertebral Cysthidatic Case with Pleural and Spinal Involvement

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## Abstract

Vertebral cysthidatic phenomenon is a very rare disease. Spinal involvement is usually seen with pulmonary, abdominal and pelvic involvement spreading in the thoracic region. A 35-year-old female patient presented with right-sided backpain and increased muscle weakness and loss of sensation for the last 6 months. By performing thoracotomy after MRI and CT evaluations; the cystic lesion involving vertebra, spinal canal and pleura was excised. There were no complications in the early postoperative period. The patient was administered albendazole 2 mg × 400 mg for three months and physical therapy. At the end of the first post operative year, it was observed that there was almost complete recovery.

**Keywords:** Vertebral cysthidatic; Thoracotomy; *Echinococcus granulosus*; Pleural cysthidatic

## Introduction

Cysthidatic which caused by echinococcal parasites in humans most commonly seen in liver and lungs and least commonly in bone tissue. The hydatidcyst; with portovertebral venous shunt within the bone tissue is most commonly located in the vertebrae and the spinal canal is affected in half of the cases [1]. Pleural or chest wall involvement was reported in 0.9% to 7.4% of all cysthidatic cases [2]. Due to its rarity we report a case of complicated primary vertebral cysthidatic with spinal canal and pleural involvement.

## Case Presentation

A 35-year-old female patient presented with complaints of backpain and increasing muscle weakness and loss of sensation on the right side for the last 6 months. On physical examination, vital signs and respiratory system examinations were normal. In the neurological examination, muscle strength was normal in the upper extremity, sensation of touch on the right was significantly reduced, pain sensation was present on both sides, muscle strength on the lower extremity was 3 on the left, 4 on the right, touch sensation was absent on the right side and decreased on the left side. No pathological findings were found in biochemical tests. On the X-ray paravertebral opacity was detected, T4-5 vertebra corpus T2W hyper intense, 3 cm mass lesion extending to the right corpus and right loculated pleural effusion (Figure 1) were detected on Magnetic Resonance Imaging (MRI). Computed Tomography (CT) revealed a 5 cm × 4 cm solid mass lesion with lobulated contours causing a lytic destructive change in the 4<sup>th</sup> and 5<sup>th</sup> ribs with T5 vertebra corpus right half and T6 right transverse process (Figure 2,3). The patient required immediate decompression due to hemiparesis and increasing muscle strength loss. It was decided that the approach with right thoracotomy would provide much better exploration and total excision would be possible. The patient was deeply sedated and neuromonitored in the left decubitus position. Signal recordings were taken, and right posterolateral thoracotomy through the 5<sup>th</sup> inter costal space was performed under general anesthesia. Complete exploration was achieved after partial decortication. An intra thoracic extraparenchymal 4 cm × 5 cm sized soft tissue lesion that destroyed the 5<sup>th</sup> vertebra and caused lysis of the right 4<sup>th</sup> and 5<sup>th</sup> Costovertebral junction and involving the right posterior and mediastinal pleura was reached from the antevertebral area. Pleural part of the lesion was punctured and clear liquid was aspirated. 3% NaCl-impregnated sponges were placed around the intrathoracic area and operation site considering it may be cysthidatic. The cavity was opened with sharp dissections and the fluid inside it was aspirated. Numerous cystic lesions with an extradural localization extending from the paravertebral area to the pleura, the smallest 0.5 cm and the largest 3 cm in diameter, were removed. No other pathological findings were found in the intrathoracic area.

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Figure 1: Preoperative MRI view.



Figure 2: Preoperative CT view.



Figure 3: Preoperative CT view.

The patient who did not require vertebral cage; significant increase in neuro monitorization in the right lower extremity after stopping muscle relaxant was reported. Albendazole treatment was started post operatively 2 mg/3 × 400 mg/3 months with no early complication was seen. Physical therapy was started on the second post operative day. In the second post operative month, the right lower extremity muscle strength was 4 and the decrease in tactile sensation continued and other neurological findings were normalized.

## Discussion

Cysthidatic is most commonly located in the liver (60% to 70%), lung (20% to 30%) and bone (0.5% to 4%), most common bone tissue in the vertebra (30% to 50%) and pelvis (10% to 15%) [3]. As a result of portovertebral venous shunt, the corpus body of the vertebra is primarily affected and other cancellous bones such as lamina and



Figure 4: Right thoracotomy exploration view.

pedicle are affected. Spinal involvement is present in approximately 50% of patients with bone involvement [1]. Spinal involvement is most commonly seen in the thoracic region. Invertebral cysthidatics, a real cyst cannot be formed because the fibrous adventitial layer does not form and its borders cannot be clearly selected. Polycystic and diffuse cysthidatism are seen in the bone. Our case is a polycystic cysthidatic case with spinal involvement and pleural involvement located in the thoracic vertebrae [4]. Although the symptoms vary according to the location of the cysthidatic involvement, it is often asymptomatic. Vertebral involvement is associated with pain; secondary infection, collapse fracture and spinal canal compression, and pleural involvement involve trachea, esophagus, heart, and large vessel compression. Our patient presented with complaints of back pain, numbness in the right arm, weakness in the right lower extremity and numbness. In addition to serological tests, radiological radiographs can be used to detect rare cases. Peripheral tissue involvement can be detected by Ultrasonography (USG) and bone and lung involvement can be detected by CT. T1a hypointense and T2a hyperintense are seen on MRI, and extradural intradural distinction is made with this method [5]. In the pre-diagnosis of our patient, serological test was not performed because it was evaluated as a mass. Direct X-ray, CT and MRI were taken and evaluated as a mass. Mass, tuberculosis, abscess, spondylodiscitis are considered in the differential diagnosis, but cysthidatic should be considered. The incidence of recurrence in patients who underwent surgical treatment alone was reported to be more frequent compared to the combination of surgery and medical treatment. Medical treatment alone is not recommended as anti parasitic drugs are switched to bone tissue and have little efficacy [6]. In our patient, the lesion was totally removed by right thoracotomy and post-op albendazole treatment was applied.

## Conclusion

Surgical approach with thoracotomy should be considered in lesions affecting the thoracic vertebra. It makes exploration of the thorax and vertebra very easy for the surgeon. In case of intrathoracic complications, it provides a chance for simultaneous intervention and reduces the risk of complications.

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