CASE REPORT

# HYDATID DISEASE OF VERTEBRAL COLUMN

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## ABSTRACT

A 30 years old male presented to us with history of back pain and weakness of both lower limbs for the last four months and was diagnosed by local orthopedic surgeon as a case of carries spine. He also used anti tuberculous drugs for two months but there was no improvement in his symptoms. We planned for transpedicular spinal biopsy. Biopsy report came to be non specific chronic inflammation. We reexamined the investigations and we found in Magnetic Resonance Imaging (MRI) soft tissue mass with multiple septaion and cyst formation nearby the vertebra. We did indirect haemagglutination test for Hydatid disease which became positive. MRI and biopsy reports were reevaluated by radiologist histopathologist respectively. Both of them confirmed the diagnosis of Hydatid cyst. In first instance we did decompression and posterior spinal fixation with pedicular screws and rods. In the next stage then we removed the L1 vertebral body and placed cage with bone graft. He was put on Albendazole 400mg twice daily for three months as advised by physician. His weakness was improved dramatically.

**Key words**: Hydatid disease, Cyst, Bone, Vertebra

## INTRODUCTION

Human echinococcosis is a zoonotic infection caused by the tapeworm of the genus Echinococcus.[1] Species of medical importance in humans are Echinococcus granulosus, causing cystic echinococcosis (CE); Echinococcus multilocularis, causing alveolar echinococcosis (AE); and Echinococcus vogeli. E granulosus is the most common of the three.[1,2]

Hydatid disease affects the bones in 0.5-2% of cases of which spine is involved in approximately 45% of cases.[2] In the vertebral column it affects the lumbar, thoracic and cervical region, in decreasing order of frequency.[3]

Hydatid disease of the spine, a primary infestation of the larvae Echinococcus granulosus, is characterized by a multivesicular infiltration of the cancellous bone, involving the vertebral bodies, pedicles and laminae to a varying extent.[4]

## CASE REPORT

A 30 years old male presented to us with history of back pain and weakness of both lower limbs for the last four months. He had been treated with Non Steroidal Anti Inflammatory Drugs for two months and then was diagnosed by local orthopedic surgeon as a case of carries spine. He also used anti tuberculous drugs for two months but there was no improvement in his symptoms. His Erythrocyte Sedimentation Rate was 67 mm/hr; X-Rays dorso-lumbur spine had reported the destruction of the end plates of T12 and L1 vertebra (figure-1 and 2). Initially MRI report showed carries spine of T12 and L1 vertebra. All other investigations were normal. We admitted the patient and planned for transpedicular spinal biopsy. Biopsy report came to be non specific chronic inflammation. But the clinical symptoms were not correlated with biopsy report. We reexamined the MRI and we found a soft tissue mass with multiple septaion and cyst formation nearby the vertebra (Figure - 3). MRI also showed collapse of L1 vertebral body and T12- L1 disc space could not identified (Figure -5 and 6). Spinal canal showed multiseptate lesion [hypointense on T1 and hyperintense on T2 weighted images (Figure - 4, 5 and 6)]. There was involvement of paraspinal muscles in scans. We did indirect haemagglutination test for Hydatid disease which became positive. We sent the MRI to radiologist to review the report and the report came to be Hydatid disease involving the vertebra, the cord and the paraspinal muscles. We also requested the histopathologist to review the result in light of the above investigations and he also confirmed the diagnosis of Hydatid disease. Then we planned two stage procedures to treat him. Firstly we did decompression and posterior spinal fixation with pedicular screws and rods (Figure - 7). Then we removed the diseased L1 vertebral body and placed cage with bone graft (Figure - 8). He was put on Albendazole 400 mg twice daily for three months as advised by physician. His weakness was improved dramatically.

Fig. 1: Anteroposterior view of XRay showing lytic lesion and cortical thinning L1 vertebra

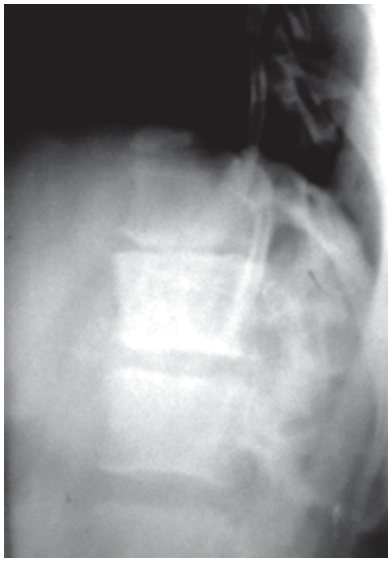

Fig. 2: Lateral view of XRay showing reduced disc space of T12-L1 vertebra.

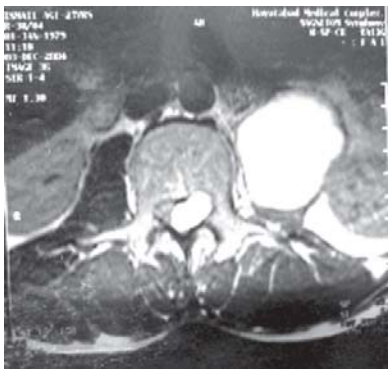

Fig. 3: MRI scan showing paraspinal mass with multiple cysts

Fig. 4: MRI scan showing hyperintense multiple cyst involving vertebral body, pedicle and spinal cord.

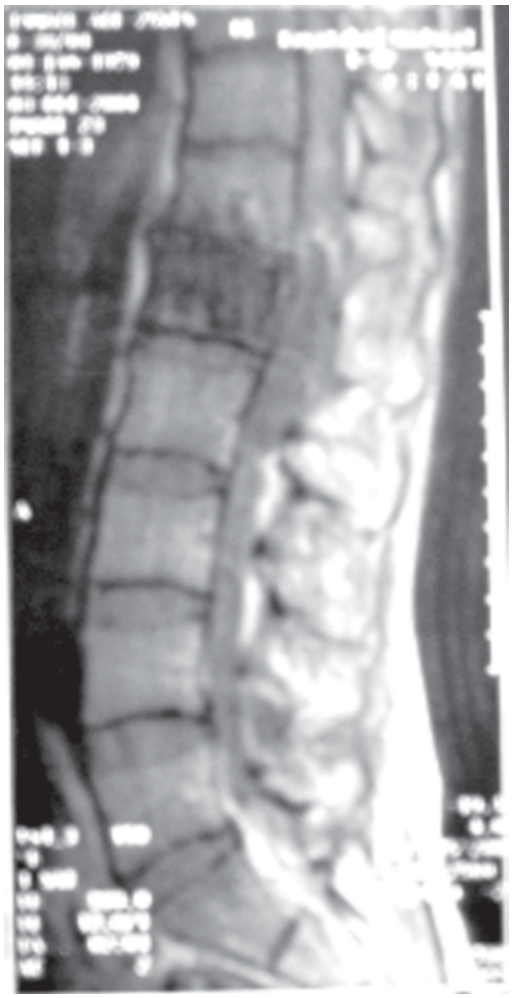

Fig. 5: Lesion in L1 Vertebra and Cord (hypo intense on T1 weighted images)

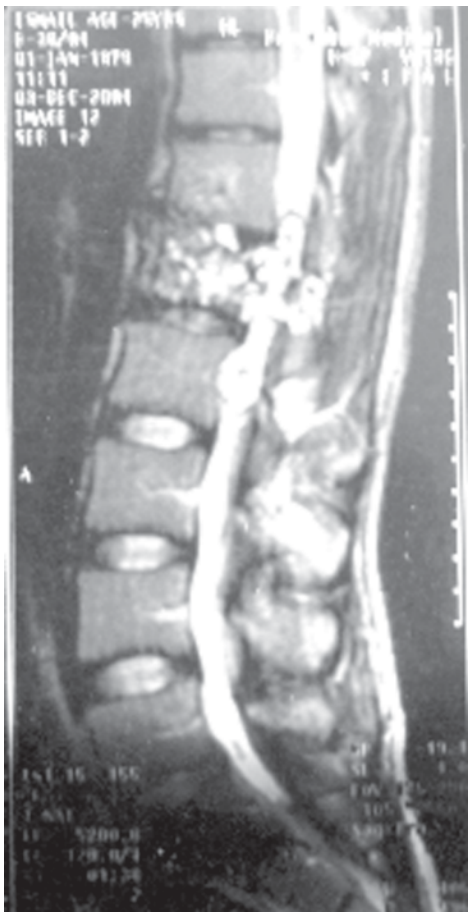

Fig. 6: Multiseptate lesion in L1 Vertebra and Cord (hyper intense on T2 weighted images)

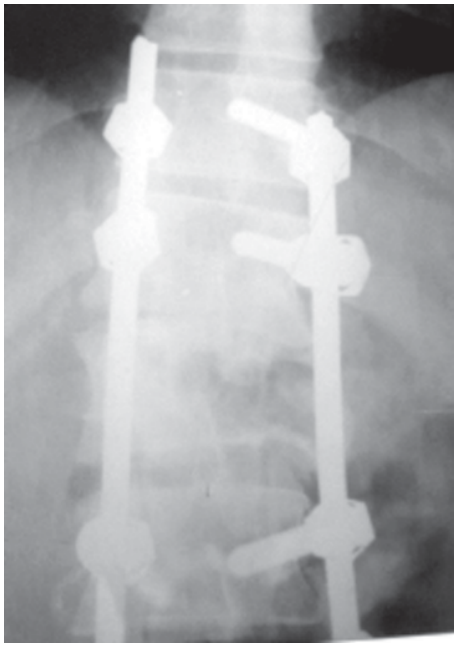

Fig. 7: Posterior Spinal Fixation with Pedicular Screw and Rods

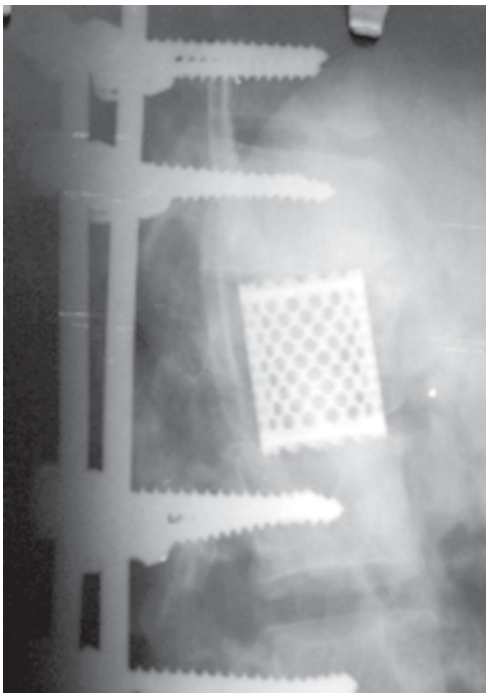

Fig. 8: Cage with Bone Graft after Removal of Disease L1 Vertebra

## DISCUSSION

Skeletal Hydatid disease occurs in the more highly vascularized areas of the bones.[1,4] The vertebrae, long bone epiphyses, iliac bone, skull, and ribs are most frequently affected.[5] The Hydatid cysts may lie dormant in the bone for as long as 40 years and most cases of skeletal hydatid cyst have been noted in adults.[4,5] Skeletal cystic echinococcosis lesion may be single or multiple.[5] As hydatid disease of bone remains asymptomatic over a long period, it is usually detected after a pathological fracture or secondary infection or following the onset of comperessive myelopathy in case of vertebral lesions.[5] The most common radiological manifestation of skeletal hydatid disease is a lucent expansile lesion with cortical thining.[6]

The differential diagnosis of skeletal cystic echinococcosis includes tuberculosis, fibrous dysplasia, simple bone cyst, aneurismal bone cyst, plasmocytoma, osteosarcoma, chondorsarcoma, chondromyxoid fibroma, lymphoma, giant cell tumors, brown tumor, and metastases.[6] The diagnosis is difficult since the more easily recognized involvement of other organs is rare.[6]

Daughter cysts, calcification, and germinal membrane detachment; the typical manifestations of cystic echinococcosis in parenchyma organs, are not usually observed in skeletal hydatid cysts.[6,7]

The preoperative diagnosis is difficult and usually is determined only after operation or by biopsy; because there are no specific disease characteristics to distinguish it from the other commoner causes of bone lesions.[7]

Hydatid bone disease is often asymptomatic, and is therefore usually diagnosed at an advanced stage when lesions have become extensive as in this case. Diagnosis is primarily based on findings of X-ray and Computerized Tomography or MRI scans.[8]

The best diagnostic tool seems to be MRI, because it can give the full image in the vertical axis of the spinal canal and thus reveals the full spinal extent of the disease.[8] The definitive diagnosis can usually be made by histopathological examination but it should be avoided as there are chance of spread of disease.[1,3,7]

## CONCLUSION

Haydatid disease should be included in the preoperative differential diagnosis of skeletal cystic lesions, since the diagnosis may easily be missed unless be kept in mind. This will not only avoid misdiagnosis but will also reduce complications of biopsy which spreads the disease.

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