

Primary Dorsal Spine Hydatid Cyst

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Primary dorsal hydatid cyst is rare and one of the important health conditions to be addressed in endemic countries and nations where the affected individuals may migrate.

A twenty-seven years old female presented with gradual onset of mid-back pain and progressive numbness and weakness of both legs. MRI dorsal spine images showed multiple peripherally enhancing cystic lesions located in the posterior mediastinum with extension to adjacent vertebrae D4-5 causing destruction with kyphotic deformity and extension to posterior element. A small cystic lesion is extending to right aspect intra-spinal canal causing displacement and compression of spinal cord at D4-5 level. The clinical presentation, diagnosis and treatment of this case are discussed and review of the literatures is presented.

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Hydatid disease is a significant clinical problem in endemic regions; humans are an incidental intermediate hosts¹. The disease is caused by the cystic (larval) stage of the tapeworm *Echinococcus granulosus*². The highest incidence of the disease was reported in countries where sheep are raised with the help of dogs³. These countries include the Middle East, Australia, New Zealand and South Africa⁴. Most commonly, the disease affects the liver and lungs⁵. The disease occurs as direct extension from pulmonary, abdominal, liver or pelvic infestation and mostly affects the dorsal region or in rare cases, it involves the skeletal system, 0.5-2% of all cases^{6,7}.

It may begin primarily in the vertebral body as in the case of dorsal spine hydatid cysts leading to different neurological complications. In endemic countries, prevention and health education are the best measures to get rid of the disease.

The aim of presenting this case report is to keep other practitioners aware of the presentations, diagnosis and initial treatments of primary dorsal hydatid cyst.

THE CASE

A twenty-seven years old Syrian female first presented in 2010 with history of gradual onset of mid-back pain, progressive numbness and weakness of both lower extremities, more on the right than left. There was no history of trauma, fever or contact with tuberculous patients but positive history of contact with animals.

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Physical examination showed that bowel and bladder functions were normal. Neurological examination was suggestive of upper motor neuron type of paraparesis. Modalities of sensation were impaired. Laboratory analyses were performed. Total blood cell counts and erythrocyte sedimentation rate (ESR) were within normal ranges while biochemical serums (C- protein) were weakly positive.

CT of the dorsal spine showed localized kyphosis at the level of D4-5 with erosions at the vertebral end plates and sizable paravertebral multi loculated cystic collections with widening of spinal canal and compression of dorsal spinal cord, see figure 1.



Figure 1: CT Dorsal Spine Image Showing D4-5 Localized Kyphosis, Paravertebral Multi-Loculated Cystic Collections and Compression of Dorsal Spinal Cord

MRI of the dorsal spine was performed revealing multiple peripherally enhancing cystic lesions located at the posterior mediastinum with extension to the adjacent vertebrae of D4-5 causing destruction with kyphotic deformity and extension to posterior element. A small cystic lesion is also seen extending to the right aspect of intra-spinal canal causing displacement and compression of spinal cord at D4 level, see figure 2.

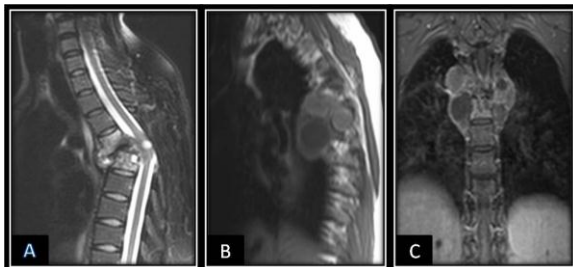


Figure 2: MRI Dorsal Spine (t1, t2 & t1 Post Contrast) Images Showing D4-5 Multiple Peripherally Enhancing Cystic Lesions with Small Cystic Lesion Causing Displacement of Spinal Cord

Serological tests revealed positive for *Echinococcus granulosus*. Image guidance fine needle aspiration cytology confirmed the diagnosis of dorsal spine hydatid cyst and no malignant cell found. Surgical treatment was discussed with the patient as the first option but the patient refused because of the risk and opted for medical therapy. The patient received Praziquantel (2400 mg PO three times per week) plus Albendazole (400 mg PO twice a day) and Cortisone (5 mg PO daily). The patient has improved; the improvement was in the reduction of the back pain, numbness and the weakness (both the sensory and motor function). She was followed for two weeks then every three months. Surgical intervention is an option if clinically indicated.

DISCUSSION

Hydatid disease is a health problem in endemic countries like Syria and the other Middle East countries. Spinal hydatid disease is usually situated in the dorsal region and generates medullary or radical symptoms according to location. The effects on the spinal cord are usually secondary to the vertebral involvement. Vertebral involvement is common as a result of provertebral shunts and the tendency of the parasite to grow easily in cancellous bone⁸. Symptoms that accompany the disease are due to the compression effect of the cysts. The most common manifestations of the disease are paresthesia, paraparesis, paraplegia and sometimes sphincter dysfunction.

Hydatid cyst can be diagnosed by means of the medical case history if the patient originates from an endemic region, by serological tests or radiological examinations⁹. MRI has so far been identified as the most valuable method in the diagnosis of spinal hydatid cysts. It reveals precise anatomic localization and extension of the spinal hydatid disease. It is superior to CT. On the other hand, CT scanning may be more convenient and beneficial in follow-up of bone lesion associated with the disease. However, surgical exploration or histopathological examinations are confirmatory.

Medical antihelminthic agents (Mebendazole or Albendazole) have proven significant effects in the treatment of uncomplicated and uninfected hydatidosis. In the report of Golematis et al it was shown that Albendazole decreased the size of large cysts and in some cases cured the smaller ones¹⁰. The role of combination therapy with Praziquantel is controversial¹⁰. Our case has responded favorably to medical treatment.

The effectiveness of medical treatment can be evaluated with follow-up CT scan and MRI which may show either the gradual shrinkage or calcifications of cysts, the size may remain the same. The major factor for surgical indication is the degree of spinal canal involvement.

Recurrence in about 30-100% of cases remains a major problem in spinal hydatid disease¹¹. It could cause persistent pain and significant neurologic deficits. In such cases, a high morbidity and poor prognosis could be predictable. Despite treatment, the disease frequently relapses with progressive destruction of the vertebral column and neurological deterioration. Patients without any symptoms should be followed for long-term; serological tests and radiographs should be used periodically to ensure that the disease has not recurred.

CONCLUSION

Patients presenting with low back pain and/or radicular pain or monoparesis/ paraparesis should be evaluated for medical or surgical causes. Besides tumoral lesions, infectious lesions should also be kept in mind. The mass, its localization (intradural, extradural, intramedullary and extramedullary) and clearly defined cystic lesions should alarm the physician regarding infection. Therapeutic management is challenging because of a high recurrence rate. Results are seldom satisfactory and prognosis is usually poor.

Potential conflicts of interest: None

Competing interest: None **Sponsorship:** None

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