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 HYDATID DISEASE OF THE SPINE: CASE REPORT

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## HYDATID DISEASE OF THE SPINE: CASE REPORT

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### SUMMARY

**A rare case of spinal hydatid disease presenting with paraparesis and sensory loss is reported. The patient was treated with albendazole resulting in significant improvement within eight weeks. Investigations and treatment modalities are discussed**

### INTRODUCTION

Turkana District in north western Kenya probably has the highest incidence of hydatid disease in the world. Although hydatid disease may involve bone including the spine in one to two per cent of cases, diagnosis of spinal hydatid disease should be considered in any patient coming from an endemic area who presents with symptoms of spinal cord compression with typical radiological findings.

### CASE REPORT

A 23-year old African male patient was referred to Moi Teaching and Referral Hospital from Turkana District in North Western Kenya with a history of loss of sensation and power in the lower limbs and back pain over a period of 10 months. The sensory loss had been gradual starting from the feet and ascending to the level of the umbilicus. A month prior to admission, he became incontinent of both urine and stool.

Weakness in the lower limbs was also gradual and progressive in ascending fashion. It started with inability to dorsiflex the feet then ascended to involve all muscle groups of both lower limbs. He was unable to walk by the time of admission. The low back pain was continuous and progressive in intensity and was not relieved by mild analgesics.

Significant findings in the nervous system included: normal muscle bulk with increased tone in the lower limbs; brisk reflexes with ankle clonus and a positive Babinski's signs; muscle power of grade 1 in the right leg and grade 2 in the left leg and; sensory level and pain at T<sub>10</sub> dermatome.

Plain X-ray of thoracic spine showed destruction of T<sub>9</sub>. This was followed by a computerised tomography myelogram which showed: a lobulated left paravertebral mass extending from T<sub>8</sub> to T<sub>10</sub> with destruction of T<sub>9</sub> and a complete extrinsic obstruction at T<sub>10</sub>.

A presumptive diagnosis of hydatid cyst of the thoracic spine was made, based on the radiological findings and because the patient came from a highly endemic area for hydatid disease. Thoracoscopy was done through the left pleural cavity showing a multi-loculated paravertebral cystic mass. The patient was started on albendazole at a dose of 15mg/kg orally divided into two daily doses. The treatment was administered over a period of eight weeks. Within this period, there was progressive improvement in the muscle power and return of sensation.

Passive exercises were introduced and he was mobilised on crutches. By the end of eight weeks he was able to walk. He returned to Turkana to continue on albendazole therapy with a planned evaluation for surgery after another eight weeks. The patient was however lost to follow up.

### DISCUSSION

Hydatid disease is a zoonosis. It is prevalent in parts of the world where humans live in close contact with dogs and sheep or cattle. Humans are infected by ingesting the eggs of the tapeworm (*Echinococcus granulosus*), which in the small intestine produce larvae. These larvae penetrate the intestinal mucosa and are carried by the portal circulation to the liver, where each larva usually forms a single cyst, which can slowly grow to very large size, and may cause symptoms(1).

Although the liver is the most common location (65%) for a hydatid cyst, they are also found in the lung (25%), kidney (4%), spleen (3%), as well as subcutaneous tissue, intramuscular, urinary bladder, pleura, breast, brain and other structures including bone(1). Only about one to two per cent of all cases of hydatid disease involve bone, and about 50% of these involve the spine. Although rare, spinal involvement usually presents with dramatic symptoms such as paraparesis or paralysis(2).

Spinal hydatid disease is a destructive lesion, damaging the bony vertebral elements as well as the intervertebral discs(3,4). Most patients have intra-spinal, extramural hydatid cysts, which cause compression of the spinal cord as they enlarge. The thoracic spine is more commonly affected than other spinal levels. In a review of 27 cases, Apt *et al*(5) found that the principal neurological symptoms were paraesthesia, sphincter disturbances and paraplegia. Turgut(6) reviewed 28 cases of spinal hydatid disease and noted that 50% had additional infestation of the lung or some other organ.

Spinal hydatid disease should be considered in the differential diagnosis of every patient coming from an endemic area and having a destructive lesion of the spine. During the past decades, many patients with spinal hydatid

disease have been misdiagnosed as having tuberculosis of the spine, or even tumours and subsequently received treatment inappropriate for hydatid disease(6,7). Recognition of hydatid disease in plain spine x-rays can be difficult and begins with the knowledge that the patient lives in an endemic area(6). The typical bone lesion associated with *Echinococcus granulosus* is radiolucent and associated with expansion of the bone and thinning of the cortex. The main cyst has discrete and rounded borders, and may have internal septations, representing the walls of daughter cysts. The cyst wall may be calcified. Computerised Tomography (CT) and Magnetic Resonance Imaging (MRI) have proved effective and sensitive means in diagnosing hydatid disease involving bone(8). Immunologic tests (Casoni test, Immuno-electrophoresis arc 5) of varying sensitivity and specificity are available to help confirm the diagnosis of cystic hydatid disease(9). In our case, these tests were not done due to unavailability.

Surgical excision has historically been the treatment of choice for hydatid cyst(10). However, dissemination of the cysts due to spillage of cyst contents and recurrence of the hydatid disease was common until the introduction of adjuvant antihelminthic therapy beginning in the 1970's(10). Drugs shown to be effective against *Echinococcus granulosus* include albendazole, mebendazole and praziquantel.

Currently, a combined medical and surgical approach is recommended whether the hydatid disease is involving the spine or any other part of the body(10). It is generally accepted that one or more scolical anthelmintics be given pre-operatively for a period of approximately one month followed by cyst excision. These pre-operative antihelminthics decrease the risk of dissemination of hydatid disease in case of spillage of cyst contents. An additional benefit of pre-operative antihelminthics is that dramatic improvement in patient symptoms can occur with a decrease in volume, thereby diminishing pressure effects.

Every attempt should be made intra-operatively to prevent spillage of cyst contents which can cause serious anaphylactic reactions or dissemination of the hydatid disease(1). Peri-operative corticosteroid therapy is indicated to reduce the risk of anaphylaxis in case spillage occurs. Prior to any manipulation of the cyst a scolical agent such as hypertonic saline, two per cent formalin povidone-iodine solution among others should be instilled into the cyst to kill any parasite surviving the pre-operative medical treatment, further decreasing the risk of dissemination and recurrence.

The prognosis for any given patient with spinal hydatid disease will depend on various factors, such as the duration of cord compression, the timely addition of pre- and post-

operative anthelmintics and the quality of the surgical intervention(11). In the best situation, return of neurological function may be complete, in other cases, neurologic recovery may be partial or minimal and perhaps the disease may recur.

In the case we have presented, the patient's neurological symptoms greatly improved under medical treatment, and he was discharged to continue with medication as an outpatient. It was recommended that he returns for elective surgical removal of the remnant paravertebral hydatid cyst. He did not come back for the operation. It is likely that he recovered sufficiently to fit into the pastoralist community life hence did not need the operation. In cases where surgery cannot be attempted, the combination of albendazole and praziquantel therapy has been shown to be effective(12). This may also be recommended if the patient refuses surgery.

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