

THE TREATMENT OF VERTEBRAL HYDATID DISEASE WITH ALBENDAZOLE AND MODERATE DOSE LOCAL IRRADIATION

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Musculoskeletal hydatid disease is seldom located in the spinal tissues. When it involved the bone adjacent to the spinal cord, the achievement of radical surgical margin is very difficult. We introduced the combination of Albendazole and moderate dose (3600cGy) irradiation therapy in a patient with the hydatid disease of L2-L3 vertebral bodies and pedicles that caused cord compression. The patient was 52 years old, male caucasian with a history of intralesional insufficient excision of paraspinal hydatid cyst 6 months prior to admission to our institution. The patient was observed for 18 months after the completion of treatment model. He is free of pain and hypoesthesia and the osseous lesions were satisfactorily calcified. No similar treatment report was found in the literature according to our survey.

INTRODUCTION

Musculoskeletal hydatid disease is relatively rare when compared with its visceral involvements, but creates a very serious problem especially in the countries which have epidemic hydatid disease. The inexistence of a very effective chemotherapeutical agent yet, limits the surgical treatment of skeletal localized hydatid disease in inextinguishable bones such as vertebra.

Vertebral and paravertebral localisation of musculoskeletal hydatid disease is also rare. Obtaining a radical surgical margin is extremely difficult in the cases with invasion of the vertebral bone adjacent to the spinal cord (2, 5, 6).

Because of the progressive infectious nature of the disease, chemotherapeutical agents should be added even in radical surgical interventions. Some new chemotherapeutical agents such as Albendazole are shown to be effective in prevention of the systemic dissemination of the disease (5, 7, 8, 9).

We are going to report the result of the treatment of spinal hydatid disease by using local moderate dose irradiation therapy and per oral systemic chemotherapy with Albendazole in a patients.

THE PATIENT and THE METHOD:

52 years old, male caucasian applied to our clinic with low back pain and with a history of intralesional inadequate excision of paraspinal soft tissue hydatid cyst mass 6 months ago. He had not received any systemic therapy afterwards. The clinical examination revealed sensory loss of T9-L4 dermatoms and a positive Laseque's test on the left leg. Casoni skin sensation test was positive, Weinberg serologic test was negative. The other laboratory investigations were normal. Conventional X-ray, abdominal USG, CT-scan and MRI investigations showed no lesions of the liver and the lungs, but loss of height of the L2 vertebral body and extradural space occupying multiple cystic masses that caused compression of conus medullaris and destruction of the L3 pedicle.

We applied a dorsolombar polyethylene TLSO orthosis. Examinations revealed that obtaining a radical surgical margin with no residual microcysts was impossible by resecting the L2 body and L3 pedicle. After a thorough consultation with Neurosurgeon, Radiation Oncologist and Internal Medicine Specialist, a new unique treatment model was chosen as being an appropriate treatment for this individual case. The probability of occurrence of radiation induced sarcoma 2-5 % in 10 years was explained to the patient and his consent was obtained for 12 times 300cGy RXT and 10 mg/kg/day Albendazole in two divided per oral doses for 3 months.

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This treatment model was offered instead of an inadequate surgical treatment and Albendazole application with a very high risk of recurrence. It was thought that radiation therapy would relieve the progressive spinal compression by destroying the multiple cysts. The patient is followed-up for 18 months after the completion of the treatment model. The signs and symptoms of pain and hypoesthesia have disappeared, lytic osseous lesions have become calcified, the loss of height of L2 body has not progressed and the reconstruction of waist movements has returned to normal.

TLSO orthosis was retained until the radiological observation of sufficient calcification of the lesions, which took place at 6 months after the initiation of the therapy.

5 patients with musculoskeletal hydatid disease have been treated in our clinic in last 20 years. The treatment models of these patients were amputation only in 2 patients with femoral involvement due to secondary infection and uncontrollable discharge, 1 patient with a lesion in the soft tissue of adductor region of the thigh by exteriorisation of the cysts plus Albendazole, and 1 patient with vertebral involvement, who was presented in this paper, 1 patient with tibial hydatid disease is under treatment of Albendazole and is going to be treated with total resection of tibia and replacement with a custom-made prosthesis.

DISCUSSION:

The treatment of musculoskeletal hydatid disease is still controversial. Curettage, the application of phenol like corrosive substances generally resulted with secondary infection occurrence and uncontrollable invasion of the surgical wound site by the echinococci due to decreasing introsseous pressure and fistula formation which leads to amputations. Especially in the pelvic and vertebral sites which are not appropriate for a radical bone resection the local treatment is extremely difficult. The decompression can be temporarily obtained in the cases with spinal cord compression by laminectomy, but because of the progressive nature of the disease can not be controlled, the pathology recurs (2, 5, 6, 7).

In spite of the presence of some reports in the literature, advocating the surgical excision and antihelminthic agent combination for the vertebral hydatidosis with cord compression, the long term follow-up showed marked recurrence and high frequency of complications including paraplegia and death (7, 8, 9). Therefore we proposed to achieve local sterilisation in our

L2-L3 localized case by combining the local Radiation Therapy and per oral Albendazole, instead of an inadequate surgical intervention and Albendazole application.

Sufficient calcification of the lesion and regression of neurologic symptoms were obtained within one year. No recurrence has observed yet. The satisfactory result of the applied treatment model in our patient justifies us to keep this protocol in our armamentarium for the treatment of vertebral hydatid disease that caused cord compression.

REFERENCES:

1. Branscheid F., Über die Behandlung des Echinococcus cysticus mit Röntgenstrahlen, Röntgenpraxis, 1937, 9:552-5.
2. Cardona J.M., Gine J., Flores X., Algara C., Ballester J., 2 cases of vertebral hydatidosis treated by the association of surgery and mebendazole, Rev.Chir.Orthop., 1983, 89(51), p:69-74.
3. Charbonnel, Un cas d'echinococcose généralisée datant de six ans, traité par radiothérapie pénétrante et opéré quatre fois, Bull.Soc.Nat.Chir.Par., 1926, 52:1178-83.
4. Dévé F., Kyste hydatique et radiothérapie, Presse méd., 1927, 35:193-5.
5. Kaoutzanis M., Anagnostopoulos D., Apostolou A., Hydatid disease affecting the vertebrae, Acta Neurochir. (Wien)(Austria), 1989, 98 51-2), p:60-5.
6. Karray S., Zlitni M., Fowles J.V., Zouari O., Slimane N., Kassab M.T., Rosset P., Vertebral hydatidosis and paraplegia, J.Bone Joint Surg. (Br)(England), Jan. 1990, 72 (1), p:84-8.
7. Ranganadham P., Dinakar I., Sundaram C., Ratnakar K.S., Vivekananda T., Posterior mediastinal paravertebral hydatid cyst presenting as spinal compression. A case report, Clin. Neurol. Neurosurg. (Italy), 1990, 92(2) p:149-51.
8. Taylor D.H. and Morris D.L., Combination chemotherapy is more effective in postspillage prophylaxis for hydatid disease than either albendazole or praziquantel alone, Br.J.Surg., 1989, vol.76, September, 954.
9. Todorov T., Vutova K., Mechkov G., Petkov D., Nedelkov G. and Tonchev Z., Evaluation of response to chemotherapy of human cystic echinococcosis, The British Journal of Radiology, 1990, 63, 523-531.