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Cystic Echnococcosis (CE) in Liver of 6-Years Old Girl: A Case Report

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Abstract: Cystic Echinococcosis (CE) is a Zoonosis, caused by the Metacestode form of *Echinococcus granulosus*. CE incidence is very rare case in Peoples younger than 10 years old. A 6-year-old girl suffering from Hydatid disease undergone two operations and were not completely cured. Although, Iran country, specialy Moghan plain remains an endemic area for echinococcosis. This presentation of the disease is rare. Perioperative adjuvant medical therapy with Albendazole was administered. In a 2-year, follow-up no recurrence has occurred.

Key words: Echinococcosis, *Echinococcus granulosus,* zoonosis, albendazole, metacestode, hydatid

INTRODUCTION

Hydatidosis is one of the most prevalent zoonotic diseases worldwide and Cystic Echinococcosis (CE), caused by the Metacestodes of *Echinococcus granulosus*, is medically and economically one of the important parasitic zoonoses in Iran. Cystic hydatidosis is one of the most prevalent zoonotic diseases in the world, causing major economically and healthy problems. The agent of the disease of taeniidae family is *Echinococcus granulosus*, a parasite of cestodes, having its final host as dog and a variety of hosts including human as intermediate hosts (Zhang *et al*., 2003). This parasite is cosmopolitan and posses the second rank in consideration of helminthic diseases significance (Muller, 2002; Torgerson and Budke, 2003).

The highest rate of infection is reported form east and south of Europe, Mediterranean coasts, Middle East, Latin America and Africa, mostly in rural districts (Torgerson and Budke, 2003). Larval cysts or hydatid cysts can be found in many tissues, most often in the liver, lung; mediastinum, peritoneum and nearly every site of the body. Main clinical symptoms in humans include liver dysfunction, lung problems, ascites, abdominal pain, hepatomegaly, splenomegaly, central nervous system disorders (Muller, 2002). Cystic echinococcosis is considered endemic in the entire Mediterranean zone including all countries from the Middle East (Torgerson and Budke, 2003). Both causative agents of the disease are reported in Iran and hydatid disease is responsible for approximately 1% of admission to surgical wards, a figure, which has increased remarkably recently due to increasing number of Afghani refugees residing in Iran (Lotfi, 1992; Hadighi *et al*., 2003). CE in the Islamic Republic of Iran is an important but neglected public health and veterinary problem, especially in rural and nomadic communities (Sabbaghian *et al*., 1975; Nasseh and Khadivi, 1975). Human CE has been reported from different parts of the Islamic Republic of Iran (Sabbaghian *et al*., 1975; Nasseh and Khadivi, 1975; Sharifi, 1997). In Saberi *et al*., reported 13.7% seropositivity in a semi-nomadic community in the coungtry. We have reported 9.2% seropositivity in Moghan Plain in Ardabil province. Echinococcosis mainly affects the liver and the lungs in 70% and 5-20%, respectively however, any organ or site of the human body, such as spleen, gallbladder, pancreas, retroperitoneal space, musculoskeletal system, may be involved. Among the unusual presentations of the echinococcal cyst, the localization in the parotid gland is exceedingly rare. Only few cases, in the literature, concerning involvement of the parotid by hydatid disease, are reported. This study deals with another case, in the literature emphasizing that echinococcal cyst should be included in the differential diagnosis in cases of swollen cystic masses in 6 year old gierl in the endemic areas like Iran.

CASE REPORT

A 6-year-old girl from a rural region of a Moghan plain, presented with a pain in right and upper the body and with a 10 day history of mild diarrhea, fatigue and fever up to 39°C. The C-reactive protein level (161 mg L^{-1}), the erythrocyte sedimentation rate (30 mm h^{-1}). Microbiologic tests were performed, with the following results: stool cultures and blood cultures were negative and a test for antibodies against Entamoeba hystolytica was negative. She reported that this mass had gradually increased during the last 2 years. She denied any other symptom. On physical examination a rather

hard painless mass was palpable in the right and upper the body. All laboratory tests were normal except for slightly increased eosinophils (11%).

Ultrasonography, demonstrated were showed a cyst in the region differentiating the lesion from Liver. Serologic tests detecting echinococcal antibodies were as follows: Enzyme-linked Immunosorbent Assay (ELISA) to a quantity of total immunoglobulin E (IgE) was positive to a titer 1:600 (BioMerieux, normalb1:100). Computed Tomography (CT) confirmed a 3 cm cyst in the intratemporal fossa probably originating from the parotid gland. No cystic lesion was seen in CT of the abdomen. Chest films were also normal. The provisional diagnosis for the patient was hydatid cyst. The diagnosis of echinococcosis is usually delayed, with the cyst being occasionally detected on imaging studies and con-firmed by serologic studies. Serology, is 80-100% sensitive for hepatic disease, 50-56% sensitive for lung disease and less sensitive (25-50%) for other organ involvement. The case we report suggests that the finding of unexplained eosinophilia, particularly in a clinical setting with patients with a possible history of exposure or in cases of lesions of typical organs, should lead clinicians to perform a serologic test for echinococcosis, in order to promptly treat the patient and to prevent cyst formation or evolution.

DISCUSSION

Hydatidosis is one of the most prevalent zoonotic diseases worldwide and Cystic Echinococcosis (CE), caused by the Metacestodes of *Echinococcus granulosus*, is medically and economically one of the important parasitic zoonoses in Iran. Cystic hydatidosis is one of the most prevalent zoonotic diseases in the world, causing major economically and healthy problems. The agent of the disease of taeniidae family is *Echinococcus granulosus*, a parasite of cestodes, having its final host as dog and a variety of hosts including human as intermediate hosts (Zhang *et al*., 2003). The diagnosis of echinococcosis is usually delayed, with the cyst being occasionally detected on imaging studies and confirmed by serologic studies. Serology is 80-100% sensitive for hepatic disease, 50-56% sensitive for lung disease and less sensitive (25-50%) for other organ involvement.

Our diagnosis was confirmed by a second computed tomographic scan, performed 4 months after discharge, which revealed an almost complete resolution of the pulmonary nodules and a decrease in the dimensions of the 2 hilar lymph nodes and by laboratory tests, which showed a normal eosinophil count. A review of the medical literature through Medline disclosed no reports on acute or early-stage human echinococcosis; to our knowledge this is the rare reported case. Xu (1985), Eckert *et al.* (1995) and Schaefer and Khan(1991) reported their experiences with hydatid disease, describing 1,022, 302 and 59 patients, respectively, but among the reports we found no description of acute echinococcosis. Dirofilariasis (especially from Dirofilaria immitis), toxocariasis (visceral larva migrans), paragonimiasis, cysticercosis and anisakiasis can cause eosinophilia and pulmonary nodules, while ascaridiasis, ankylostomiasis, strongyloidiasis, schistosomiasis and human filariasis can cause eosinophilia with pulmonary infiltrates (Loeffler's syndrome, or tropical pulmonary eosinophilia) (Chitkara *et al*., 1997; Roberts, 1988).

CONCLUSION

Our study confirms the high endemicity of human CE in Moghan nomads. Due to the similar living conditions and culture among Iranian nommadic communities and rural areas high CE prevalence is expected to prevail in all such communities also. It is clear, therefore that CE is a major public health problem among Iranian nomadic communities and all famiily members are at the same level of risk of exposure to *E. granulosus* infection. This girl living in Aslandous City.

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REFERENCES

Chitkara, R.K. and P.S. Sarinas, 1997. Dirofilaria, visceral larva migrans and tropical pulmonary eosinophilia. Semin. Respir. Infect., 12: 138-148.

Eckert, J., P. Jacquier, D. Baumann and P.A. Raeber, 1995. Human echinococcosis in Switzerland, 1984-1992. Schweiz. Med. Wochenschr., 125: 1989-1998.

Hadighi, R., F. Mirhadi and M. Rokni, 2003. Evaluation of a dot-ELISA for the serodiagnosis of human hydatid disease. Pak. J. Med. Sci., 19: 268-271.

Lotfi, M., 1992. Diagnosis and treatment of hydatid cyst of the liver: twenty years experience in Iran. Pak. J. Surg., 8: 109-114.

Muller, R., 2002. Worms and Human Diseases, CABI International, Oxon, UK, Wallingord.

Nasseh, G.A. and B. Khadivi, 1975. Epidemiological and clinical aspects of echinococcosis in East Iran. J. Trop. Med. Hyg., 78 (6): 120-122.

Roberts, P.P., 1988. Parasitic infections of the pleural space. Semin. Respir. Infect., 3: 362-382.

Sabbaghian, H., N. Hoghochi and E. Ghadirian, 1975. A survey on the prevalence of echinococc-cosis in Shahre-K ord, Iran. Bulletin de la Soc. de Ptho. Exo., 68 (6): 574-684.

Schaefer, J.W. and M.Y. Khan, 1991. Echinococcosis (hydatid disease): Lessons from experience with 59 patients. Rev. Infect. Dis., 13: 243-247.

Sharifi, I., 1997. Evaluation of a control program on hydatid cyst in the city of Kerman. J. Kerman University of Med. Sci., 3 (4): 168-171.

Torgerson, P.R. and C.M. Budke, 2003. Echinochoccosis-an international public health challenge. Res. Vet. Sci., 74: 191-202.

Xu, M.Q., 1985. Hydatid disease of the lung. Am. J. Surg. 150: 568-573.

Zhang, W., J. Li and D.P. McManus, 2003. Concepts in Immunology and diagnosis of hydatid disease. Clin. Micro. Rev., 16 (1): 18-36.