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Case Report

A Case Report of Muscle Hydatidosis from Iran

Zohreh ANDALIB ALIABADY, *Fariba BERENJI, Mahmoud Reza JAMSHIDI

Department of Parasitology and Mycology, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Received 15 Jun 2014
Accepted 11 Sep 2014

Keywords:
Hydatidosis,
Muscle,
Iran

***Correspondence**
Email:
Berenjif@mums.ac.ir

Abstract
Hydatid cyst is an important endemic zoonosis in Iran. It may be seen in various organs of body. Musculoskeletal system is rarely involved by hydatid cyst, the larval form of *Echinococcus granulosus*. On clinical basis, it may resemble any soft tissue tumor. A 70-years old housewife living in Ardoghesh, a village in Neyshabur, northeast Iran, was admitted to general surgery clinic because of a painless mass in the back of her left thigh. This case emphasizes that hydatidosis should be included in differential diagnosis of any soft tissue mass especially in regions where hydatidosis is endemic.

Introduction

Hydatidosis occurs because of infection by the genus of *Echinococcus*. It is a global public health threat (1-3). Six species of *Echinococcus* have been recognized, but four of them are of public health concern (1).

The greatest prevalence of hydatidosis in human and animal hosts is found in sheep-raising countries, including North America and South America, the entire Australia, New Zealand, Europe, central Asia, China, and parts of Africa (1, 2, 4-6).

Because of slow growth, a cyst is rarely diagnosed during childhood or adolescence. Various parts of body may be involved with hydatid cyst but the liver and lungs are the main locations (7). Skeletal muscle infection is rare, and reported 0.5% - 4.7% of all cases of echinococcosis (8).

Patients with hydatid cyst are asymptomatic and present at an advanced stage of hydatidosis, when lesions have become extensive (7). Here we report a case of this rare entity of an isolated hydatid cyst of the muscle of the thigh.

Case report

A 70-years old housewife living in Ardoghesh, a village in Neyshabur, northeast of Iran, was admitted to general surgery clinic in Feb 2014 because of a painless mass in the back of her left thigh. She had a history of removing hydatid cyst surgery in her left thigh from three years ago. She was treated for one month with albendazole. She had a history of taking care of animals such as sheep and dog. She described a progressively growing mass in his thigh musculature. On examination, two round masses was felt in her leg. The preoperative diagnosis was malignant neoplasm. The patient was operated under general anesthesia. During the operation, laminated layers of hydatid cysts were observed and two round masses was successfully removed (Fig. 1). The patient was treated with albendazole postoperatively for 3 months.

Gross pathology showed two soft cystic masses (13×4/5×4/5 cm and other 17×4×4 cm in diameter) that contained gelatinous material and multiple daughter cysts. In histopathologic examination cross section of a hydatid cyst with laminated layer and germinal layer, brood capsules containing multiple protoscolices, hooklets are considered as diagnostic keys (H&E). Pathological examination confirmed diagnosis as hydatid cyst of thigh (Fig. 2, 3).

Fig.1: Hydatid cyst with laminated layer (Original)

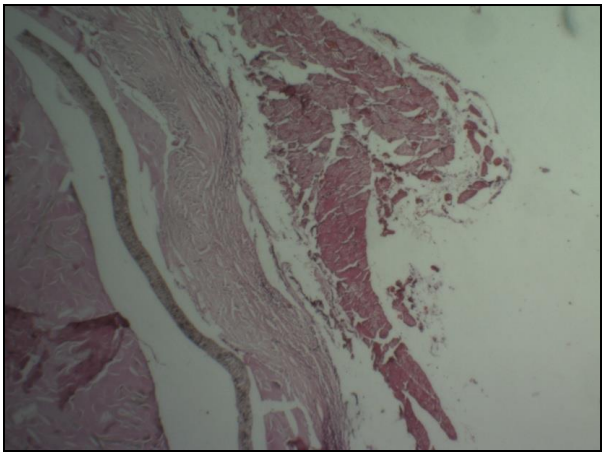

Fig.2: Hydatid cyst in muscle (Original)

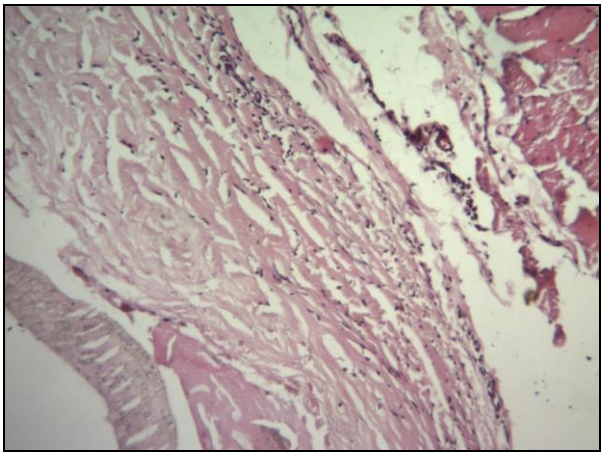

Fig.3: Hydatid cyst in muscle showing germinal layer (Original)

Discussion

Hydatid disease is a very serious problem in sheep-raising countries caused by tapeworms belonging to the class Cestoda, in the family Taeniidae, of the genus *Echinococcus*. *E. granulosus* is responsible of hydatid cyst. They measure 3 mm to 6 mm long when mature and lives in intestine of carnivores, particularly dogs and other canines, as definitive hosts. Many mammals may serve as intermediate hosts, but herbivorous species are most likely to become infected by eating eggs on contaminated herbal material.

Humans are seldom involved as accidental intermediate hosts in these cases and infected by accidentally ingestion of *Echinococcus* spp. eggs, usually because of fondling dogs (6, 9).

Hydatidosis is a serious public health problem in some parts of the world (4, 10). Khorasan Province, located in the northeastern part of Iran had the highest incidence rate for hydatidosis (11). Although the incidence of hydatidosis has decreased because of education and control programs, there are still concerns in some parts of the world (12).

Hydatid cyst is most commonly found in the liver and lung, while they can occur in other organs including muscle, brain, eye, spleen, kidney, orbit, lymphatic glands, myocardium, tonsil, pancreas, skin, ovary, uterus and parotid glands (2, 13-17). Hydatidosis are usually asymptomatic until adolescence due to the slow growing process of the parasite in tissues such as muscle and bone, although it can be acquired at any age (18). Incidence rate of musculoskeletal hydatidosis is not clear. Some reports showed an incidence of musculoskeletal echinococcosis including involvement of subcutaneous tissue as 0.5%–4.7% among all cases of hydatid disease and soft-tissue hydatid cysts occur in 2.3% of cases reported from endemic areas (8, 19). Isolated primary hydatidosis of skeletal muscle is rare. Muscles provide a poor environment for the parasite because of the presence of lactic acid and mechanical factors, such as contractile activity, may make encystment less likely (18-20).

Preoperative diagnosis of muscular hydatidosis- echinococcosis is difficult. It may mimic any soft tissue tumor such as abscess, synovial cyst, and malignant tumor. Before biopsy of cyst, diagnosis of hydatidosis should be confirmed to avoid leakage of cyst contents and the accompanying risks of anaphylaxis (20). Hydatidosis in soft tissues may present with a variety of patterns and recognizing them is necessary in diagnosis (18). In our presented case, preoperative diagnosis was malignant neoplasm and after surgery, hydatidosis was confirmed.

Rokni Yazdi et al. noted left thigh hydatidosis in a 50-years-old housewife living in a village in Zanjan, northwestern Iran (18). Asadi et al. noted left thigh hydatidosis in a 50-year-old woman from rural area around Rasht city with no history of trauma, fever, or weight loss (20).

In conclusion, the hydatid cyst can present in any part of the body and no part is protected. The infestation may resemble a soft tissue tumor in the muscle and therefore in endemic area of hydatidosis, hydatid cyst should be considered as differential diagnosis of any soft tissue mass. In this case, leakage of cyst during surgery caused recurrent hydatidosis of thigh muscle.

Acknowledgements

The authors declare that there is no conflict of interest.

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