UNILOCULAR HYDATID DISEASE OF THE SPLEEN: A CASE REPORT

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ABSTRACT

Hydatid cyst disease is a zoonotic and parasitic disease caused by Echinococci. Although it is more common in regions where stockbreeding is carried out, it exists throughout the world. It frequently appears in the liver and the lungs. Primary involvement of the tissues without a focus in the liver or the lungs is quite rare. The disease, presenting with involvement of the spleen, has been mostly presented in case reports. This case reports a case of unilocular cyst hydatid disease of the spleen.

Key words: Spleen, Cyst Hydatid, Echinococci

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Introduction

Peripheral nerve injury is an important medical Hydatid cyst disease is a zoonotic and parasitic condition mostly caused by echinococci. The most frequently isolated species is Echinococcus granulosus whereas Echinococcus multilocularis is rarely isolated¹². Echinococcosis is endemic to southern Europe, Asia, Mediterranean, Latin America, and Africa. About 2 to 6% of these populations suffer from echinococcosis. Its prevalence tends to increase in populations who raise sheep. Individuals at any age can be affected by hydatid cysts. The incidence rate of these cysts is similar in both sexes. In particular, the risk increases with poor hygiene, low socio-economic status and intimate contact with stray dogs³⁹.

The disease most frequently appears in places where stockbreeding is performed; however, it may be encountered throughout the world. It most frequently involves the liver and lungs. The third most common organ affected by the disease is the spleen. However, isolated spleen involvement with cyst hydatid disease is rare. Primary involvement of the spleen without a focus on the liver and the lungs is quite rare⁴. It has been reported that the incidence of spleen involvement by cyst hydatid disease in endemic regions is only 5%¹⁵. The disease, presenting with involvement of the spleen, has been presented in case reports. Here, we will report a case of isolated spleen involvement by cyst hydatid disease.

Case presentation

A thirty-year-old man presented, complaining of a month-long history of nausea, swelling and pain in the left side of the abdomen reflecting in the left side of the neck. On physical examination, there was tenderness in left quadrants of the abdomen deep palpation, the spleen was palpable and the Traube’s space was closed. Biochemistry
and hemogram showed normal results. Abdominal ultrasonography demonstrated an anechoic giant cystic lesion 137x114x120mm in size and filling the spleen completely. Abdominal computed tomography showed a cystic lesion 13.5x13 cm in size, filling the parenchyma of the spleen and extending from the tail of the pancreas to the stomach and the superio-lateral part of the kidney (type 1 hydatid cyst) (Figure 1).

Imaging of the other organs showed no cystic formations. Blood serum analysis showed that IgE value was 8.62kUA/L (cut off value: <0.35) and cyst hydatid hemagglutination test showed positivity at the titer of 1/640. The patient was diagnosed with primary hydatid cyst of the spleen and was given Albendazol tablets 400mg two times a day for nine days before surgery. The patient was also vaccinated against pneumococci. We planned to carry out splenectomy and made an incision on the left subcostal region. During exploration, an allergic reaction against cystic fluid developed.

Our case was treated with epinephrine and intravenous fluid for the management of anaphylaxis. Anaphylaxis prevention is of utmost importance during the aspiration procedure of the cyst. Hypertonic glucose solutions, alcohol hypertonic NaCl, chlorhexidine can be used to avoid anaphylaxis. Unfortunately, despite the use of hypertonic NaCl, anaphylaxis could not be avoided in our case. Therefore, rapid-acting agents to kill scolices with fewer side effects should be used. After a medical intervention, splenectomy was performed. Histopathological examination of the spleen specimens revealed a cyst wall showing an outer laminar layer and inner germinative layer as well as vesicles within the cyst, inflammatory cell infiltration and parenchymal atrophy of the adjacent tissue (Figure 2).

After surgery, the patient was given Albendazol 2*400 mg, intermittently for three months. Albendazole was used for three weeks with a one-week off to reduce hepatotoxic effects of the agent. Follow-up of the patient did not show any abnormalities.

Figure 1: Image of Abdominal computed tomography.

Figure 2: Splenectomy material.

Conclusion

Hydatid cyst disease shows a wide geographical distribution. In fact, it is encountered in Asia, Mediterranean countries, Europe, Africa and South America. Turkey is considered as an endemic region and the incidence of the disease is reported to be 1/2000. Dogs are considered as primary hosts and animals like sheep, cattle, goats and camels are considered as intermediate hosts. Ingestion of water and food contaminated with parasite ova found in dog feces starts the infection. After intermediate hosts ingest ova, they enter the bloodstream through the portal vein and initiate the infection. Hydatid cyst disease mostly appears in the liver and the lungs. Involvement of the spleen by the infection occurs when the causative agent crosses the arteries of the liver and the lungs. It has also been reported that the causative pathogens pass through the retrograde venous route. Secondary spleen cyst hydatid occurs as result of systemic disease or peritoneal transmission through ruptured liver hydatid cyst.

It has been reported that 50-70% of the cases of hydatid cyst had liver involvement, 20-30% had lung involvement and fewer than 10% had involvement of the other organs. Spleen involvement usually accompanies involvement of the other organs, and its isolated involvement is quite rare. It is usually asymptomatic. Patients with isolated spleen involvement present to hospitals with other conditions and are accidentally diagnosed. If it is symptomatic, the most frequent symptoms are abdominal pain, fever and a painful mass in the left upper quadrant of abdomen. Physical examination may show splenomegaly. It may have such complications as signs of compression, secondary infec-
tion, intraabdominal rupture, anaphylaxis, diffusion to other organs and fistulization into the colon and thorax\(^{(12-14)}\).

The case reported here presented with pain in the left side of the abdomen reflecting in left side of the neck, nausea and swelling. Physical examination revealed tenderness in the left upper quadrants of the abdomen, the spleen was palpable under the ribs and the Traube’s space was closed. Echinococcus is diagnosed with history, physical examination, radiological imaging techniques and serological tests. In cases of advanced stages of the cysts, plain X-rays of the abdomen may show calcification in the abdominal wall. However, the most sensitive radiological methods are ultrasonography and computed tomography\(^{(12,15,16)}\). Serological diagnosis of the disease can be made with indirect cyst hydatid hemagglutination, indirect immunofluorescence, latex agglutination and ELISA tests.

The sensitivity and specificity of serology tests for hepatic hydatid cysts are 80 to 100% and 88 to 96%, respectively. The sensitivity of serology tests for lung hydatid cysts is 50 to 60%, while it ranges from 25 to 56% in other organ involvements. With the introduction of recombinant techniques, the rate of diagnosis has been increasing\(^{(3)}\). Titrations over 1/360 are considered as significant in indirect cyst hydatid hemagglutination tests. Since isolated spleen involvement is very rare, systemic examinations should be made and involvements of other organs should be investigated\(^{(4,15-17)}\).

In the case presented here, isolated spleen involvement was diagnosed with physical examination and radiological imaging techniques. Systemic examination was made with ultrasonography and computed tomography. Although marked signs of the disease were detected on ultrasonography and computed tomography, the diagnosis was confirmed with cyst hydatid hemagglutination test.

It has been reported in the literature that percutaneous aspiration, partial cystectomy-omentum-plasty, laparoscopic splenectomy and partial splenectomy are performed for the treatment of hydatid cyst of the spleen to protect the spleen, especially in children and young people\(^{(12,18,19)}\). Aspiration is contraindicated, in that it causes dissemination of the disease, and/or may create a risk for an anaphylactic reaction\(^{(12,18,19)}\).

In recent years, the cyst has been evacuated through a percutaneous route percutaneous route under ultrasonography or computed tomography; the cavity has been irrigated with scolicidal agents and successful results have been obtained \(^{(20)}\). Since the patient had pain in the left upper quadrant, the spleen was completely involved and the patient did not describe any signs of compression, we did not plan surgery sparing the spleen and we performed standard transabdominal splenectomy. Hydatid cyst is primarily treated with surgery \(^{(14,18)}\). When surgery cannot be performed; the patient declines surgery; the disease recurs after surgery; the surgical field has been contaminated with cystic fluid and it is difficult to perform surgery due to the high number of cysts; Albendazol can be used as a secondary treatment agent\(^{(20)}\).

The case presented here was initiated Albendazol 10mg/day ten days before surgery and the treatment was continued for three months after surgery. It has been reported that cyst hydatid recurs in 10% of the cases due to surgical contamination. However, it has been shown that Albendazol initiated before surgery and continued for at least one month following surgery reduces the rate of recurrences and combination with surgery is recommended\(^{(21)}\). Since Albendazol is metabolized in the liver and excreted through the kidneys, care should be taken with its use in patients with impaired liver and renal functions and these patients should be followed closely before and during treatment\(^{(21,22)}\). In the case reported here, liver function tests and hemogram were performed two times in the first month of the treatment and monthly for two months thereafter.

Hydatid cyst disease presenting with isolated spleen involvement is quite rare. The fact that the disease has non-specific symptoms or is asymptomatic delays its diagnosis. In regions where cyst hydatid is endemic like Turkey, differential diagnosis should include intraabdominal hydatid cyst in patients presenting with non-specific symptoms and the role of imaging techniques in its diagnosis should be kept in mind. The primary treatment is surgery and it should be accompanied by treatment with Albendazol. Laparoscopic splenectomy and spleen sparing surgery can be performed in eligible patients. Standard transabdominal splenectomy is still preferable, since it has lower rates of morbidity and mortality.
References


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