Hydatid Cyst Disease with Extra Hepatic Localizations

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Abstract

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Introduction

Echinococcus granulosus causes the echinococcosis also known as hydatid cyst disease. Hydatid cyst disease is a parasitic infection. This parasite is identified by Basch for the first time and defined as echinococcus granulosus [1]. Hydatid cyst is presently a prevalent health problem in our country. Echinococcus granulosus may indwell all the organs. But liver and lungs are affected usually. Especially, extrahepatic localization is rare. Animals consumed as a nutrient are parasite’s intermediate host. The last host is canine genus. The echinococcus larvae named as hexagons, are taken by gastrointestinal way. The embryos come to liver by the veins and to the other organs by the lenfatic way. In this article, hydatid cyst cases presenting with different clinical features and localized in extrahepatic organs are discussed.

Methods

Patients with hydatid cysts who are operated in our hospital, between 2015 and 2018, were evaluated. 20 patients with hydatid cyst disease who has extra hepatic located cysts were detected. Patients were evaluated in terms of age, sex, location of the cyst, cyst size, diagnostic method, applied surgical method and recurrence. Chest radiography, ultrasonography (USG) and computerized tomography (CT) was performed for all patients before surgery. 1/320 serum titres were accepted as positive for echinococcosis for indirect hemagglutination test (IHA) in our hospital. Liver located cases and echinococcal alveolaris cases were eliminated.

Results

![Gender distribution of the patients](image-url)

Figure 1: Gender distribution of the patients.
15 (75%) patients were female and 5 (25%) patients were male. The mean age among the patients were 34.5 (17y-63y) (Figure 1). 10 cysts were localized in lungs (8 right lobe and 2 left lobe), 5 in spleen, 2 in peritoneal cavity (1 of them was in right inguinal hernia pouch), 1 in thyroid, 1 in left paravertebral muscles and 1 in gall bladder (Figure 2). The mean cyst size was calculated as 8.05 cm (2cm -22cm). Lung located cysts were diagnosed by chest graphy and CT, thyroid located cyst, 3 of spleen located cysts, peritoneal cavity located cysts and gall bladder located cyst were diagnosed by USG. (Figure 3) 2 of spleen located cysts and paravertebral muscle located cyst were diagnosed by CT (Figure 4). Total splenectomy was performed to spleen located cysts. Thyroid cyst was treated by bilateral total thyroidectomy. Lung cysts were treated by cyst wall resection (subtotal cystectomy). Total cystectomy was performed for the peritoneal cavity cysts and paravertebral muscle located cyst. Recurrence occurred in paravertebral muscle cyst and in 1 of lung cysts. And total cystectomy was performed for these cysts. No recurrence occurred again. All the patients were administered post-op 10 mg/kg albendazole. After four weeks of medical treatment, patients undergo USG control. There was no recurrence in this period (Table 1).

Figure 2: Localization of the cysts.

Figure 3: Peroperative photo examples of cysts; Thyroid (A,B)-Inguinal Hernia posh (C,D)-Peritoneal Cavity (E)-Spleen (F)-Gall bladder (G).
Table 1: Demographic data & Localization and the size of the cysts & Diagnostic methods.

| NO | AGE | SEX | LOCALISATION | DIAGNOSTIC METHOD | SIZE OF THE CYST(CM) |
|----|-----|-----|--------------|--------------------|---------------------|
| 1  | 17  | F   | LUNG         | CT & CHEST GRAPHY  | 8                   |
| 2  | 22  | F   | LUNG         | CT & CHEST GRAPHY  | 10                  |
| 3  | 21  | F   | LUNG         | CT & CHEST GRAPHY  | 4                   |
| 4  | 54  | M   | LUNG         | CT & CHEST GRAPHY  | 6                   |
| 5  | 40  | M   | LUNG         | CT & CHEST GRAPHY  | 14                  |
| 6  | 19  | F   | LUNG         | CT & CHEST GRAPHY  | 11                  |
| 7  | 63  | F   | LUNG         | CT & CHEST GRAPHY  | 16                  |
| 8  | 41  | F   | LUNG         | CT & CHEST GRAPHY  | 5                   |
| 9  | 32  | M   | LUNG         | CT & CHEST GRAPHY  | 9                   |
| 10 | 33  | F   | LUNG         | CT & CHEST GRAPHY  | 12                  |
| 11 | 24  | M   | SPLEEN       | USG                | 8                   |
| 12 | 25  | F   | SPLEEN       | USG                | 6                   |
| 13 | 30  | F   | SPLEEN       | CT                 | 4                   |
| 14 | 19  | F   | SPLEEN       | USG                | 3                   |
| 15 | 28  | F   | SPLEEN       | CT                 | 2                   |
| 16 | 59  | F   | PERITON      | USG                | 22                  |
| 17 | 55  | F   | PERITON      | USG                | 5                   |
| 18 | 49  | M   | THYROID      | USG                | 5                   |
| 19 | 47  | F   | MUSCLE       | CT                 | 7                   |
| 20 | 20  | F   | GALL BLADDER | USG                | 4                   |

Discussion

Hydatid cyst disease is most commonly seen in the liver (67%). But all organs and systems may be affected. This parasite may settle in lung, muscle, bone, kidney, brain, heart, prostate, pancreas, thyroid and spleen [2]. Isolated extrahepatic replacements are very rare [3]. In the literature it has been reported that isolated hydatid cyst disease may settle in spleen 2.2%, in pancreas 1.1%, in periton or pelvic area and mesocolon 2.2%, in gall bladder 0.6%, in surrenal gland 0.6% and rarer in other organs [4]. The results of our study is in accordance with the literature about the frequency. This disease has a lot of clinical symptoms according to the size, age and the replacement of the cysts. Abdominal pain and tenderness, hepatomegaly and abdominal palpable mass, hydatid trill may be seen [5]. Eosinophilia is found in 25% of patients and Weinberg complement fixation test (CFT) may be positive and diagnostic with clinical findings [6]. Also, indirect hemagglutination test (IHA) is used. In 1994; Lucahandri et al. operated 1275 patients for the hydatid cyst. They reported that 96-75 rate of this cysts may exhibit in extraordinary organs [7].
Gassias et al. reported that extrahaepatic localized hydatid cyst's rate is %10 diagnosed by USG, CT and MRI [8]. Bartın et al. demonstrated that the imaging methods are more sensitive than serological tests especially in unusual cyst location and identification of germative membranes or germinal vesicles while serological tests are negative should be assessed in favour of echinococcosis [9]. In our study most of the cases diagnosed by imaging techniques. Surgical treatment is the first and most important method for the hydatid cyst disease even with anthelmintics [10-12]. In surgical treatment; the affected organ can be removed totally or partially with the cysts. Parenchymal resection and simple cystectomy are the other applied surgical treatment method. The most common used surgical technique is total or subtotal pericystectomy [13,14]. In our study; total organ resections (splenectomy, total thyroidectomy, cholecystectomy) applied for the cysts located in spleen, thyroid and gall bladder. Subtotal cyst resections (pericystectomy) are made for the lung cysts. And total cystectomy applied for the cysts in peritoneal cavity and muscle localized cyst.

Antihelminthics are an alternative treatment method for small and asymptomatic cysts [15]. Albendazole is an antihelminthic which is used frequently with the dose of 10 mg / kg / day [16]. In the studies of Horton and El-Mufti; the improvement rate is nearly %50 and %60 of recurrent cysts are in advanced stage and reported to be susceptible to albendazole treatment [17,18]. In our study one of the recurrent cysts is the old and big cyst (16 cm) in lung and the other recurrent cyst is paravertebral muscle localized cyst which is also old age. So, it is compatible with the literature that the size and age of the cyst affect recurrence ratio [19]. The recurrent ratio in our study is 2 (%10) and in literature the recurrent ratio changes between %8-26 [20]. After concomitant administration of surgical and medical treatment; it is reported that recurrence rate decreases [14]. In our study all patients have surgical and medical treatment together.

Conclusion

The diagnosis of extrahepatic located hydatid cyst disease may be difficult. Serological tests may be misleading and imaging methods are more valuable for these cysts. The first treatment step is surgery, but also medical treatment should be added. It is important not to forget that the cyst size and the age of the cyst is important for the recurrence.

Informed Consent

Written informed consent was obtained from patient who participated in this study.

Peer Review

Externally peer-reviewed.

Conflict of Interest

No conflict of interest was declared by the author.

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