ODU TIP DERGİSİ/ODU MEDİCAL JOURNAL (ODU MED J) December 2022;9(3):110-115

CASE REPORT/OLGU SUNUMU

Hydatid Cyst Mimickers and Cases Mimicked by Hydatid Cyst; With Two Cases

Havva Erdem[1](ID), Ülkü Karaman[2](ID)

[1]Department of Pathology, Faculty of Medicine, Ordu University, Ordu, Turkey
[2]Department of Parasitology, Faculty of Medicine, Ordu University, Ordu, Turkey

Received: 07 October 2022, Accepted: 30 November 2022, Published online: 31 December 2022

Abstract

Hydatid cyst is a parasitic disease caused by *Echinococcus granulosus* and is frequently seen in Turkey. Cystic lesions are frequently encountered in routine examinations. These lesions include a wide spectrum from benign to malignant.

Imaging methods are frequently used in the diagnosis, and many cystic hepatic and extrahepatic lesions have different imaging findings. In addition, in some cases, radiological evaluation is not sufficient for a definitive diagnosis. In this case, the diagnosis can be made by evaluating the sample taken from the pathological point of view. Some lesions may also mimic diseases such as hydatid cysts.

In this study, two hepatic cyst cases, which are thought to cause difficulties in diagnosis and may adversely affect the treatment process, are presented because the cyst imitates hydatid disease.

In conclusion, hydatid cysts and hydatid mimics should be kept in mind especially in endemic regions, hepatic and extrahepatic regions.

Key Words: Hydatid cyst, mimics, liver, extrahepatic

Hidatik Kist Taklitçileri ve Hidatik Kisti Taklit Eden Olgular; İki Olgu

Özet

Kist hidatik Echinococcus granulosus'un neden olduğu paraziter bir hastalık olup Türkiye'de sıklıkla görülmektedir. Rutin incelemelerde kistik lezyonlar ile sıklıkla karşılaşılmaktadır. Bu lezyonlar benignden maligniteye kadar geniş bir yelpazeyi içermektedir.

Tanıda sıklıkla kullanılan görüntüleme yöntemleri olup birçok kistik hepatik ve ekstrahepatik lezyonun farklı görüntüleme bulguları vardır. Ayrıca bazı durumlarda kesin tanı için radyolojik değerlendirme de yeterli olmamaktadır. Bu durumda alınan örneğin patolojik açıdan değerlendilerek tanısı konulabilmektedir. Bazı lezyonlar da kist hidatik gibi hastalıları taklit edebilir.

Çalışmada Kist hidatiği taklit etmesi nedeniyle tanıda zorlulara neden olan ve bu doğrultuda tedavi sürecini olumsuz etkileyebileceği düşünülen iki hepatic kist olgusu sunuldu.

Sonuç olarak, özellikle endemik bölgelerde, hepatik ve ekstrahepatik bölgelerde hidatik kistler ve hidatik taklitçileri akılda tutulmalıdır.

Anahtar Kelimeler: kist hidatik, mimik, karaciğer, ekstrahepatik

Suggested Citation: Erdem H, Karaman U. Hydatid cyst mimickers and cases mimicked by hydatid cyst; with two cases. ODU Med J, 2022;9(3): 110-115.

Address for correspondence/reprints:

Havva Erdem

Telephone number: +90 (452) 226 52 14

E-mail: havvaerdem @odu.edu.tr

NOTE: This article was presented as an oral presentation at the 9th National Hydatidology and 2nd International Hydatidology congress.

INTRODUCTION

Hydatid cyst is a parasitic infection usually caused by *Echinococcus granulosus*. The main source of this parasite is carnivors. These are mostly dogs, wolves, foxes. People get these eggs from raw fruits and vegetables that are not well washed and cooked. Contamination is possible from contaminated drinking water. In addition to humans, ruminant animals such as sheep, goats, cattle and buffalo also get sick by ingesting the eggs (1).

Hydatid Cysts are mostly localized in the liver (70%) and lung (25%) (2). Primary isolated extrahepatic hydatid cyst is most common in the abdomen, with a rate of 6-11% (2). Although some patients may be asymptomatic, the clinical presentation is mostly abdominal pain or symptoms that may vary according to the localization of the cyst. Swelling in soft tissue, spleen, pancreas, kidney, retroperitoneum, bladder, ovaries, bone, heart, chest wall, spine, thyroid gland, brain and muscles can give symptoms according to their location. They may not show symptoms at first (2).

These cases can mimic many benign or malignant cystic and solid lesions, depending on their location. Many lesions also mimic hydatid cyst and give clinical presentation. In this article, it is aimed to examine the lesions that mimic hydatid cyst and cases mimicked by cyst hydatid through two cases.

CASE REPORTS

Two cases are presented. Necessary information has been provided for the cases.

Case-1: A 71-year-old male patient was brought to the general surgery emergency department with acute abdomen after a traffic accident. During the examination a cystic mass in the liver was detected incidentally. After the patient was stabilized, surgical treatment was applied to this cystic mass and the removed material was sent to pathology for diagnosis. In the examinations, a large number of small and medium-sized vascular structures and hyalinized stroma, filled with erythrocytes, were observed in a focal area, adjacent to the normal liver tissue, in the observed areas. In the immunohistochemical study, a diffuse and strong reaction with CD31 and CD34 was observed in these areas. For differential diagnosis, HepPar1, Alpha fetoprotein (AFP), desmin, monoclonal carcinoembryogenic antigen (mCEA) were added to the panel. Nuclear staining (in the most intense area) was observed at a rate of 1-2% with Ki-67. The case was reported as epithelioid hemangioendothelioma (Figures -1,2).

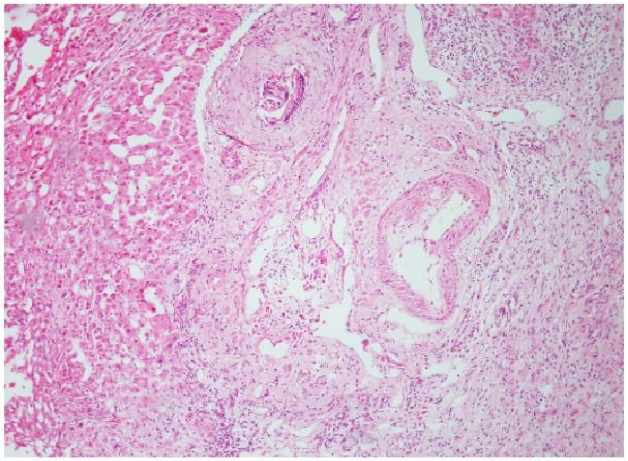

Figure 1: The area where vascular structures are observed in the vicinity of the liver tissue (H&EX200)

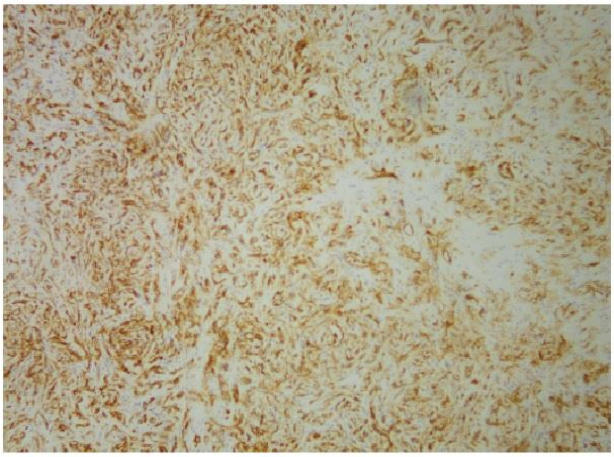

Figure 2: Positive staining with CD31 was observed in vascular structures (CD31X200)

Case-2: A 69-year-old female patient was resected with a preliminary diagnosis of hydatid cyst, simple cyst, upon detection of a cystic lesion in the liver. The material was sent to pathology. No cuticle or membranous structure was found in the examinations. Necrosis was not present. In the microscopic examination, there was proliferation and cystic enlargement in the biliary glands. As a result of microscopic examination, it was found to be compatible with peribiliary cyst (Figure -3).

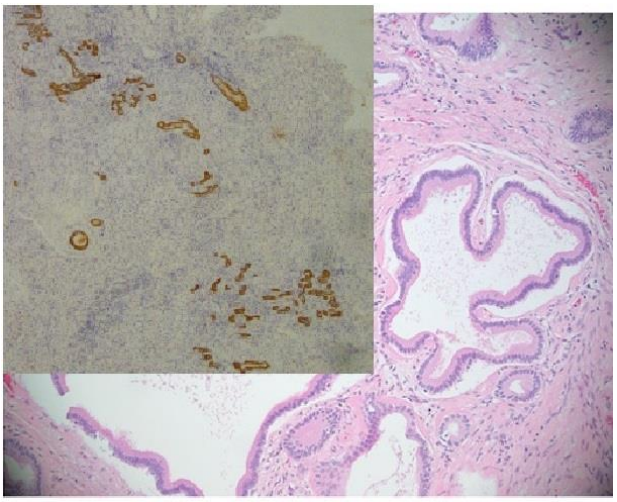

Figure 3: Biliary glands with cystic dilated appearance (H&EX200), positive staining with CK7 showed ((top left image) (CK7X100)

DISCUSSION

Many cystic lesions have classical imaging findings, and these findings may be sufficient for diagnosis. However, in many cases, there may be similar appearances and therefore histopathological evaluation may be required for a definitive diagnosis.

In the literature, these lesions in liver and non-hepatic localizations have led to difficulties in diagnosis because specific clinical symptoms and laboratory findings are absent in hydatid cysts (3-16).

Cystic liver lesions can be divided into developmental, inflammatory, neoplastic, and trauma-related lesions. Simple liver cysts are the most common lesions encountered incidentally.

The number and morphology of the lesions and the determination of solid components within the lesion are important in the differential diagnosis (3).

Cystic lesions of the liver occur in many cases. Congenital simple cysts occur in polycystic disease, portal fibrosis and Caroli's disease. They are mostly asymptomatic. Cases of hydatid cysts are the most common cause of parasitic disease in the liver. Hemangioendotheliomas, mesenchymal hamartomas, and teratomas are among the cystic neoplasms of the liver (4).

In our first case, radiologically cystic appearance of the hemangioendothelioma caused hydatid cyst to be considered in the diagnosis. A definitive diagnosis was made as a result of histopathological evaluation.

In the study of Gupta et al., they evaluated hepatobiliary cystic lesions and included 72 common choledochal cysts, 51 hydatid cysts, 8 simple liver cysts, 2 changes due to congestive heart failure, 6 biliary cystadenoma, 5 liver abscess and presented the histopathology evaluation of 4 cases of cavernous hemangioma (3). In this evaluation, besides hematoxylin-eosin preparations, histochemical stainings such as silver reticulin, Masson's trichrome, periodic acid Schiff (PAS), Voehrhoff Van Gieson were also used. These histochemical stains will not be discussed in this article.

In the second case we presented, if we examine the subject through peribiliary cysts, these lesions are formed by the localization of the intrahepatic, extramural peribiliary glands at the hepatic hilum and portal tract levels and showing multiple small dilatations. Peribiliary cysts are multiple and may be discrete, clustered, or confluent. It can mimic compound type biliary ductal dilatation (5).

There are many lesions that mimic hydatid cysts. Examples of these lesions are bronchogenic cysts, gossypiboma, schwannoma located in the lung, mesenchymal hamartoma of the liver. These cases were diagnosed by histopathological evaluation (6-9).

Situations mimicked by hydatid cyst are also among the common problems. Liver and lung hydatid cyst cases can also mimic other diseases (10,11). In one study, a case evaluated as pleural abscess or empyema was treated with broad-spectrum antibiotics and surgical intervention. A hydatid cyst was observed after surgery (10,11). It has been reported that approximately 15-40% of patients with pulmonary hydatid cysts also have cysts in the liver simultaneously (11).

In the case presented by Işık et al., a case of hydatid cyst confused with necrotizing pneumonia is presented. In the case, there was no response to the treatment in the patient who was followed up with the complaint of rash, for whom broad-spectrum antibiotic therapy was started because the radiological findings were consistent with necrotizing pneumonia. Multiple thick-walled cystic lesions and pleural effusions were

observed in the computerized tomography, and it was stated that the diagnosis of pulmonary hydatid cyst disease was confirmed by surgical and serological examinations (11).

It has been reported that hydatid cysts located in the heart and deep muscle, as well as in the lung, can cause serious confusion and the diagnosis is clarified by histopathological evaluation after resection. Especially muscle localized mass lesions can mimic soft tissue tumors. Especially in endemic areas, careful evaluation is beneficial. Sometimes there may be a solid appearance without a cystic component (12,13).

Although single, cardiac localized mass lesions have more specific images radiologically, the diagnosis was made after resection in the case presented by Parsaee et al. (12).

Although muscular hydatid cysts are rarely seen, they should be kept in mind in the differential diagnosis in surgical planning because of the risk of anaphylactic reaction as well as recurrence in incomplete surgery (13).

In the literature, cases of phantom tumor, kidney tumor and lung cancer, which have difficulties in differential diagnosis with hydatid cyst, have also been reported (14-16).

CONCLUSIONS

In conclusion, hydatid cysts should be considered in the differential diagnosis of cystic or solid lesions, especially in endemic areas. In the definitive diagnosis, clinical as well as radiological and pathological evaluation results should be evaluated together.

Ethics Committee Approval: Not required

Peer-review: Externally peer-reviewed.

Author Contributions:

Concept: HE, UK.; Design: HE, UK.; Literature search: HE, UK; Data Collection and Processing HE, UK.; Analysis or Interpretation: HE, UK.; Writing: HE, UK.

Conflict of Interest: The authors declared no conflict of interest

Financial Disclosure: The authors declared that this study has not received no financial support.

References

1. T.C. Ministry of Health. Hydatid cyst (Kistik Ekinokokkoz). 2015. https://www.saglik.gov.tr/TR,4076/kist-hidatik-kistik-ekinokokkoz.html) date of access (3.10.2022).
2. Aksakal N, Kement M, Okkabaz N, Altuntaş YE, Öncel M. Unusually located primary hydatid cysts. Ulus Journal of Surgery. 2015;32(2):130-3.
3. Gupta SM. Histopathological assessment hepatobiliary cystic lesions in tertiary care centre. J Adv Med Dent Scie Res 2019;7(9):214-217.
4. Ramachandran, P. Hepatic Cysts and Abscesses. In: Puri, P, Höllwarth M. (eds) Pediatric Surgery. Springer, Berlin:

Heidelberg; 2009. p.557-558.

5. Borhani AA, Wiant A, Heller MT. Cystic hepatic lesions: a review and an algorithmic approach. AJR Am J Roentgenol. 2014; 203(6):1192-204.
6. Tokur M, Yesilkaya Y, Ozkan F, Tokur N. Bronchogenic cyst mimicking hydatid cyst or enfected bulla in child patient. Eastern Journal of Medicine. 2013; 18(3): 133-135.
7. Ozutek A, Karabuga T, Bozdag AD, Hayrullah Derici. Asymptomatic gossypiboma mimicking a liver mass. Turk J Surg. 2010;26:225–8.
8. ErkanAkar. Schwannoma mimicking pulmonary hydatid cyst: Case report. Respir Case Rep. 2012; 1(1): 15-18
9. Ataş E, Demirkaya M, Kesik V, Balamtekin N, Kocaoglu M Mesenchymal Hamartoma of the Liver Mimicking Hydatid Cyst. Pediatr Therapeut. 2012; 2:120.
10. Kayhan S, Akgünes A. Histopathologically diagnosed pulmonary complicated hydatid cyst cases. Turkish Journal of Parasite. 2011; 35: 189-93.
11. Isık S, Cağlayan Sozmen S, Guzeloğlu E, Ozturk T, Asilsoy S. Pulmonary hydatid cyst disease mimicking necrotizing pneumonia in a child with leukocytoclastic vasculitis: a case report. Turk Pediatri Ars 2018; 53: 117-9.
12. Parsaee M, Mohebbi B, Shojaeifard M, Noohi F, Mohebbi A, Bassiri H et al. Hydatid Cyst Mimicking Heart Tumor. Iranian Heart Journal 12(3):51-56
13. Basarir K, Saglik Y, Yildiz Y, Yetis T, Cebesoy O. Primary muscular hydatidosis mimicking soft tissue tumour: a report of five cases. J Orthop Surg (Hong Kong). 2008;16(3):368-72.
14. Ozyigit I, Kocyiğit B, Altay S. Hydatid cyst in a heart failure patient mimicking phantom tumor. Turkish Med Stud J 2021;8(3):125-7.
15. Camtosun A, Çelik H, Yıldıız A, Altıntaş A, Taşdemir C. A Case of Hydatid Cyst Mimicking Kidney Tumor. Cyprus J Med Sci 2019; 4(1): 70-2.
16. Düzgün N, Esme H, Duran FM, Kurtipek E. Lung Carcinoma Mimicking Hydatid Cyst: A Case Report. J Clin Anal Med 2013;4(suppl 5): 512-4