BANGLADESH JOURNAL OF RADIOLOGY AND IMAGING 2023; VOL. 31(1): 52-54

Rare Presentation of Hydatid Cyst in Breast: A Case Report

FAHMIDA YESHMINE[1], ISHTIAQUE MOHAMMAD BEHNOM[2], SUMI DATTA[3], SHAMIMA FERDOUSI[4]

Abstract:

Hydatid cyst (HC) is a lesion most commonly seen in the liver but can occur in many parts of the body. Breast involvement with HC is extremely rare. It can be isolated or accompanied by other organ involvements. In this report, we present a 20-year-old female with isolated HC located in the left breast. In ultrasonogram of the patient, the lesion was compatible with the HC. Diagnosis of HC was confirmed by FNAC. This study aimed to emphasize on low cost preoperative diagnosis of HC through USG carried out by skilled practitioner.

Key words: *Hydatid Cyst (HC), ultrasound (USG), Fine needle aspiration cytology (FNAC).*

Introduction:

Hydatid disease is caused by infection with the larval stage of Echinococcus granulosus, a ~2–7 millimeter long tapeworm found in dogs (definitive host) and sheep, cattle, goats, and pigs (intermediate hosts).[1] Echinococcus granulosus is the most common cause of hydatid disease in humans. The location is mostly in the liver and lungs, with only 10% occurring in other parts of the body. Hydatid disease of the breast is extremely rare even in endemic areas, its only accounts for 0.27% of all cases.[2] Patients usually present to the hospital with a palpable and painless lump in the breast. It is challenging to differentiate it from other tumoral lesions of the breast. Only few reports of breast hydatid cyst are published and majority of the reported cases have been diagnosed postoperatively. We report a case of hydatid cyst of the breast diagnosed preoperatively by ultrasound and fine needle aspiration cytology.

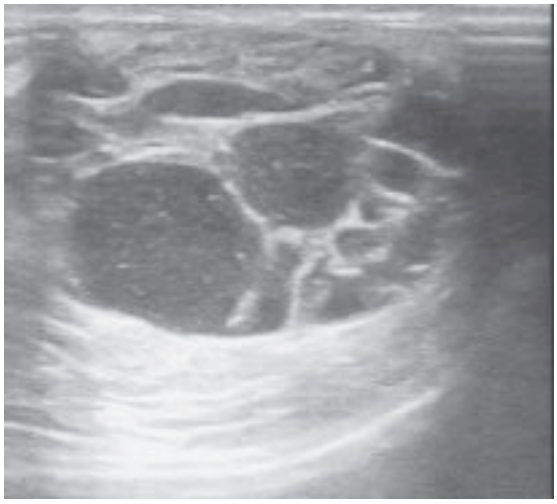
Address of correspondence: Dr. Fahmida Yeshmine, Associate Professor, Department of Radiology & Imaging, Bangladesh Institute of Research in Diabetes, Endocrine & Metabolic Disorders (BIRDEM), Dhaka. Mobile: +8801715005826. Email: fahmida1968@gmail.com

Case Report: A 20-year-old female patient referred with palpable, longstanding (over 3 years) mass in the periphery of left breast in upper part 11-1 o'clock position that was remarkable with pain (due to being in lactational period) for the last 1 months. There was no history of breast trauma, hormone replacement therapy, or family history of malignancy. Physical examination revealed a palpable nonfixed mass on the anterior chest wall, peripherally located in the left breast with regular borders. The nipple, areola, and overlying skin were normal and no palpable lymph node in both axilla. Routine laboratory tests were in normal ranges.

At sonography, lesion was compatible with a semisolid mass and had a smooth bordered, moderately thickened wall, with a dimension of 3.4 × 3.1 × 2.2 cm. Lesions have contained circumferentially oriented anechoic millimetric loculations divided with septations, resembling daughter cysts. Intercystic spaces were filled with homogenous echogenic material (hydatid sand) predominantly seen in the center of the lesion, creating rosette appearance (wheelspoke pattern) (Figure: I,II). Doppler sonography showed no internal vascularity. No significant enlarged axillary lymph nodes were detected with both examination. Ultrasound was performed by high frequency probe.

1. Associate Professor, Department of Radiology & Imaging, Bangladesh Institute of Research in Diabetes, Endocrine & Metabolic disorders (BIRDEM), Shahbag, Dhaka. 2. Registrar, Department of Radiology & Imaging, BIRDEM. 3. Assistant Professor, Department of Radiology & Imaging, BIRDEM. 4. Professor & Head of the Department of Pathology, Ibrahim Medical College.

Received: 28 May 2022 **Revised:** 15 August 2022 **Accepted:** 20 Nov. 2022 **Published:** 01 Jan 2023



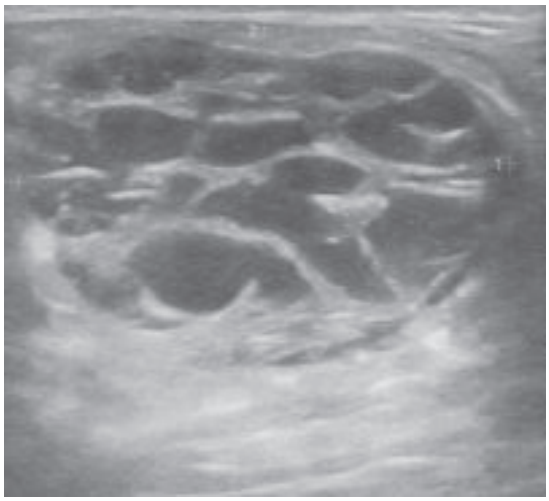


Fig. 1 & 2: *Grey scale sonogram findings of Hydatid Cyst.*

Plan was made for cytology confirmation by FNAC. The procedure risks and benefits were completely explained to the patient. Procedure consent form was obtained from the patient. Under aseptic precaution, the swelling is aspirated by 23G needle yielded, 5ml fluid material (USG guided). The specimen was sent to the pathology department for analysis. The procedure was uneventful. No complications were reported.

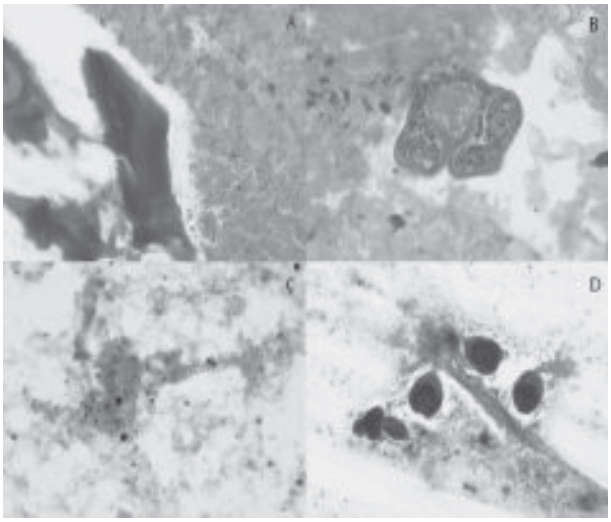


Fig.-3 (A,B,C & D): *Cytology findings*

FNAC report revealed fragment of laminated pinkish red membranes (Fig III A). Few detached hooklets with refractile structures were seen (Fig III B, III C). Background showed amorphous necrotic debris, polymorphs and foamy histiocytes (Fig III D). Ductal epithelial cells and malignant cells were not seen. The diagnosis confirmed benign cystic lesion compatible with hydatid cyst.

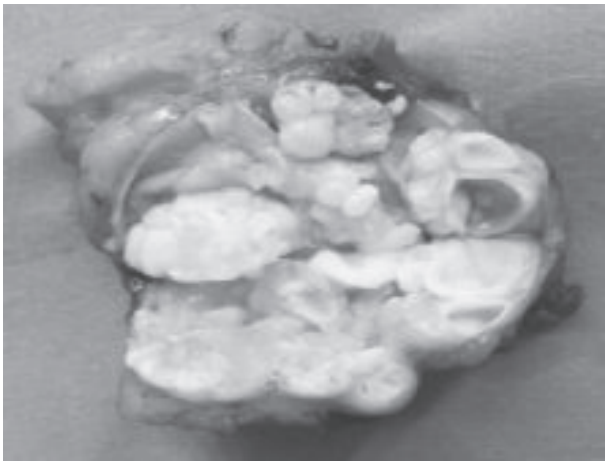


Fig.-4: *Surgical specimen*

The final diagnosis was made to be hydatid cyst of the breast. The patient was referred to the surgery department for surgical resection. After surgery specimen showed characteristics daughter cysts of hydatid disease (Figure IV).

Discussion:

Hydatid disease of the breast is extremely rare even in endemic areas; it can be the only primary site or part of disseminated hydatidosis.[3] 60 % of hydatid cysts are found in the liver, 30% in the lungs, 2.5% in the kidneys, 2.5% in the heart, 2% in the bone, 1.5% in spleen, 1% in the muscle, and 0.5% in brain.[4] However, in the breast its only accounts for 0.27% of all cases.[2]

Typically the patients present with painless breast lump which increase in size over time. It generally

affects women between age of 30 and 50 years old; although ages from 20 to 74 years have been reported.[5] When secondary infection occurs, hydatid cyst can´t be distinguish from breast abscess, clinically or by mammography.[6]

The screening modalities for diagnosis of breast hydatid disease are mammography, ultrasound, and magnetic resonance imaging (MRI). However, for classification of the cysts ultrasound is considered the best choice. MRI findings can be helpful but not specific.

The ultrasound findings vary according to the degree of maturation and the complications. Separation of the ruptured endocyst layer from the ectocyst leads to a free floating membrane which produces the so called water lily sign. Hydatid sand composed of hooklets, membranes, and debris give internal echo, and the level of fluid can be seen. The presence of a thicker and more laminated wall, relative to a simple cyst, and a thin calcification layer within the lesion on ultrasonography favors hydatid cyst. In addition, the presence of a cyst in another organs together with a multilocular cystic lesion showing a fluid level in the breast suggests a hydatid cyst.[6] Gharbi et al. have described five types of ultrasound findings for hydatid cysts, including pure fluid collection (type-I), fluid collection with a split wall (type-II), fluid collection with septa (type-III), heterogeneous echo patterns (type-IV) and reflecting thick walls (type-V).[7]

Due to the rarity of this condition sonographic appearances of breast hydatid disease are frequently missed until an operative diagnosis has been made.[5] Rarely, a preoperative diagnosis can be made using a combination of clinical, imaging and fine needle aspiration cytology (FNAC) findings. Serologic tests may be used to confirm the diagnosis and in follow up. A positive serum reaction may occur even in absence of liver and lung involvement.[6] Scoleces, hooklets, and laminated membranes can be identified in FNAC. No urticarial or anaphylactic reactions have been reported as a complication of this procedure. Therefore, FNAC can provide a safe, fast, inexpensive preoperative diagnosis and allow the planning of a cystectomy, minimizing the risk of intraoperative rupture.[5]

Conclusion:

Hydatid disease of the breast is extremely rare disease, but it should be considered as a differential diagnosis of breast lumps for individuals residing in endemic areas. Breast mass of long duration without internal flow by ultrasound Doppler images can suggest hydatid cyst. The diagnosis is usually made postoperatively. However, ultrasound and FNAC is safe and good preoperative diagnostic tool combination.

References:

1. CDC. Parasite – Echinococcosis , https://www.cdc.gov/parasites/echinococcosis/index.html. Last reviewed: 23 September,2020. Retrieved : 16 September, 2022.
2. Taori KB, Mahajan SM, Hirawe SR, Mundhada RG. Hydatid disease of the breast. *Indian journal of Radiology and Imaging* 2004; 14(1): 57-60.
3. Tutar N, Cakir B, Geyik E, Tarhan NC, Niron EA. Hydatid cysts in breast: mammography and ultrasound findings. *Br J Radiol* 2006 Oct;79(946):e114-6.
4. Saeed M, Jarbou MD, Wasfi M, Salaita MD, Mohammad A, Khasawneh MD. Isolated hydatid cyst of breast: a case report. *JRMS* 2007; 14(1): 64-65.
5. Cancelo MJ, Martín M, Mendoza N. Preoperative diagnosis of a breast hydatid cyst using fine-needle aspiration cytology: a case report and review of the literature. *J Med Case Rep* 2012 Sep;13;6(1):293.
6. Dagli AF, Ozercan MR, Kocakoc E. Hydatid cyst of the breast mimicking inflammatory carcinoma and mastitis. *J Ultrasound Med* 2006 Oct;25(10):1353-6.
7. Gharbi HA, Hassine W, Brauner MW. Ultrasound examination of the hydatic liver. *Radiology* 1981 May; 139(2):459-463.