Case Report

A rare case report of breast hydatid

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ABSTRACT

Hydatid disease is a parasitic infection caused by the larval form of *Echinococcus granulosus*. Only a few reports of breast hydatid cyst are published and a majority of the reported cases have been diagnosed postoperatively as it is not possible to reach a definitive diagnosis with clinical examination and radiological investigations only. Here, we present the case report of a 35-year-old woman who presented with a painless lump in the right breast for 1-year duration. On clinical examination, a non-mobile, firm lump was detected in the right breast with no nipple retraction and axillary lymphadenopathy. This case was diagnosed as a hydatid cyst incidentally during surgery from its gross appearance which mimics that of a liver hydatid cyst, normally common in this endemic area.

Key words: Hydatid cyst, Incidentally, Painless breast lump

Hydatid disease is a parasitic infection caused by the larval form of *Echinococcus granulosus* and seen endemically among sheep-raising communities [1,2]. Very few cases of hydatid cysts of the breast have been reported in the literature; even in endemic areas, it only accounts for 0.27% of all cases [3]. Patients usually present with a palpable and painless lump in the breast, hence, it is challenging to differentiate it from other tumors. Only a few reports have been published and a majority of the reported cases have been diagnosed postoperatively [1,3]. The diagnosis is often delayed because there are no specific signs and symptoms of the disease and it also mimics other diseases.

Even in endemic areas, it is very challenging to differentiate the entity from other diseases. Usually, it is not included in the differential diagnosis of mammary tumors because of their rarity. The differential diagnosis based on mammography includes cyst, fibroadenoma, phyllodes tumor, and rarely, carcinoma circumscribed. Routine breast imaging modalities can be used in the diagnosis of breast HD. Serologic tests for HD can be useful in cases suspected of hydatid [4]. This is a report of such a rare primary location of hydatid disease in the breast of a 35-year-old female.

CASE REPORT

A 35-year-old woman presented with a complaint of painless swelling in the right breast for 1 year, which was gradually increasing in size. The swelling was associated with mild breast discomfort. She reported no nipple discharge and no skin changes. She had no history of trauma but had close contact with domestic animals including sheep and cows.

On examination, the patient's general condition was stable with a pulse rate of 82/m, blood pressure of 126/84 mmHg, and temperature of 98.6°C, and there was no peripheral lymphadenopathy. On local examination, the left breast and left axilla were normal with no significant abnormality, whereas in the right breast, there was a visible swelling of approximately 6 × 5 × 4 cm in the upper outer quadrant of the right breast which was firm in consistency, spherical in shape, non-tender, with regular margins, and not fixed to the underlying muscles and the skin. The overlying skin and the nipple-areola were normal and there was no palpable axillary lymph node.

Fine-needle aspiration cytology (FNAC) of the swelling was done on an outpatient department basis and the pathologist reported as a benign cystic lesion of the breast. Breast ultrasound (USG) was advised and it was reported as a 6x4 cm well-defined rounded mass of heterogeneous echogenicity with multiple cystic areas of variable diameter inside, suggestive of a cystic lesion and advised to correlate clinically. USG-guided aspiration was done which revealed straw color fluid, non-bloody, and sent for biochemical tests and cytology. The swelling regressed in size and the biochemical and cytology findings were non-significant.

After 2 months, the patient again came with the same complaints for which again USG was done which revealed recollection of fluid, and the patient was again discharged after reaspiration of fluid under USG guidance. After 3 months, she again came with the same complaint.

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After getting appropriate consent, the patient was planned for the excision of mass under general anesthesia. Baseline investigations were sent for the fitness for surgery. Laboratory investigations revealed normal complete blood count with hemoglobin of 11 g/dl, normal blood chemistry, and chest X-ray. Through the inframammary incision, the breast lump was excised in total, and on opening of the pericyst, endocyst was found simulating like hydatid cyst (Fig. 1).

On histopathological examination of the specimen, the lamellated membrane of the hydatid cyst was seen with chronic inflammatory infiltrate rich in eosinophils in the surrounding fibrocollagenous tissue supporting our diagnosis of hydatid. The patient was discharged without complications. USG whole abdomen was advised on follow-up after 2 weeks and the report was normal. No late complications or recurrences were observed at the follow-up 1 year later.

DISCUSSION

Hydatid cyst is endemic among sheep-raising communities, particularly in regions of South America, the Mediterranean shore (Spain, France, and Italy), East Europe, Turkey, East Africa, Central Asia, China, and Russia [5]. The history of echinococcosis dates back to antiquity [6]. The adult *E. granulosus* produces eggs that are released in the stool of infected canines. Eggs ingested by intermediate hosts (cows, sheep, and humans) release embryos in the duodenum, which penetrate the intestinal mucosa and enter into circulation [7]. The liver acts as the first filter, while the lungs act as a second filter. Only 15% of the embryos are free to develop cysts in other organs of the body [8]. Thus, the liver is the most common site affected (75%), followed by the lungs (15%), muscles (4%), kidney (2%), spleen (2%), bone (1%), etc. [9]

Hydatid cysts of the breast are extremely rare even in endemic areas, accounting for only 0.27% of all cases [10]. Very few cases of hydatid cysts of the breast have been reported in the literature and the largest series of 20 hydatid cysts of the breast was reported in Tunisia [11]. The breast can be a primary site of infection or part of a disseminated hydatidosis [3,10]. Hydatid cysts of the breast usually occur primarily by hematogenous spread but there is a possibility of retrograde passage of *E. granulosus* egg through lactating ducts during breastfeeding [12].

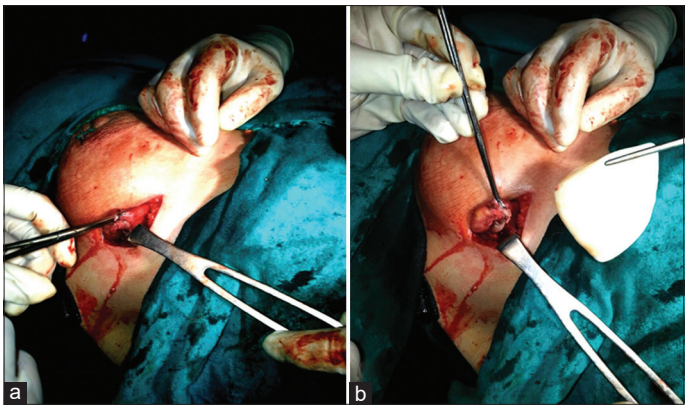

Figure 1: (a) Inframmory incision with lump *in situ*; (b) endocyt

Clinical presentation varies in relation to especially localization, size, and stage of the cyst. Hydatid cysts can mimic every type of cyst since they can be seen as simple or complex cysts, depending on the stage of the cyst [13]. Clinically, a hydatid cyst of the breast usually presents with a painless, slowly increasing lump in the breast, of long duration without axillary lymphadenopathy. It affects generally women in the age group of 30–50 years [14].

The disease can also be diagnosed by USG, mammography, and magnetic resonance imaging. However, for the classification of the cysts, USG is considered the best choice [10]. The USG findings vary according to the degree of maturation and the complications. Hydatid sand composed of hooklets, membranes, and debris gives 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 the hydatid cyst [1,2]. Pre-operative diagnosis can be made by FNAC (scoliosis, hooklets, or laminated membrane can be identified), but the use of fine-needle aspiration is controversial. There are only a few studies describing this method without complications [8,12], however, in our case, we did because the diagnosis was not sure of hydatid.

A hydatid cyst is usually not included in the differential diagnosis of breast lumps due to its rarity, even in endemic areas. In addition, the above-mentioned radiographic appearances of breast hydatid disease are frequently missed until an operative diagnosis is made which is again due to its rarity.

A hydatid cyst is treated with total excision without any spillage and its recurrence is very rare. However, a 3-month course of albendazole treatment has been shown to reduce the incidence of recurrence [1,2]. The treatment of the breast hydatid cyst is complete surgical excision of cyst avoiding the release of the cyst contents and maximum conservation of the affected viscera [11]. Accidental implantation may be prevented by irrigation of the cyst bed with 3% saline solution [15].

CONCLUSION

Hydatid disease is a parasitic infection caused by the larval form of *E. granulosus*. In the present case, the entity was diagnosed postoperatively. A majority of the reported cases have been diagnosed postoperatively as it is not possible to reach a definitive diagnosis with clinical examination and radiological investigations only. Due to which, it is very challenging to differentiate the entity from other diseases.

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