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Case Report

CASE REPORT

Isolated hydatid cyst of the breast that developed after breast feeding

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Abstract

A hydatid cyst of the breast is extremely rare, even in endemic areas. There are few reports of breast hydatid cysts. We report a case of an isolated hydatid cyst of the breast that was identified as a painless breast lump that had increased in size just after completion of breast feeding and was present with a painful breast mass after 25 years. This may indicate the possibility of retrograde passage of an *Echinococcus granulosus* egg through lactating ducts during breast feeding, liberation of an embryo that penetrates ductal mucus and enters the breast tissue and then develops into a hydatid cyst. When a patient comes from an area with little healthcare and where hydatid cysts are epidemic, and if this disease was indicated by radiologic or serologic examination, total mass excision without spillage is the best diagnostic and treatment.

INTRODUCTION

Hydatid disease is a parasite infestation mostly caused by *Echinococcus granulosus*. Adult *E. granulosus* cause hydatid cysts mostly in the liver, lungs and other parts of the body. Hydatid cysts of the breast are extremely rare even in endemic areas, accounting for only 0.27% of all cases [1]. Typically, the patients present with a painless breast lump that increase in size over time.

Hydatid cysts generally affect from between 30 and 50 years old [2]. The diagnostic approaches used to identify breast hydatid cysts are mammography, ultrasound and magnetic resonance imaging. The echinococcal hemagglutination test may be used to confirm the diagnosis. It is difficult to differentiate these cysts from other tumoral lesions of the breast. Therefore, breast hydatid cysts should be included in the differential diagnosis of breast lumps, especially in endemic areas.

There are only a few reports published on hydatid cysts of the breast. Here, we report a case of an isolated hydatid cyst of the breast that was identified as a painless breast lump that had increased in size just after completion of breast feeding and was present with a painful breast mass after 25 years.

CASE PRESENTATION

A 61-year-old female patient without any medical history presented at our clinic with a palpable mass associated with pain in the right breast. She discovered a small mass in her right breast just after completing the breast feeding period, which increased in size gradually for 25 years. There was no nipple discharge, fever, history of breast trauma, hormone replacement therapy or family history of breast or ovarian cancer. She did have close contact with sheep and dogs.

Upon physical examination, a large palpable mass with regular borders was identified within the right breast. The nipple, areola and skin were normal. There was no palpable lymph node in the right axilla. The left breast and axilla were normal, and systemic examination did not show any abnormality.

Her mammograms showed two (large and small) oval and dense masses within the upper outer quadrant of the right

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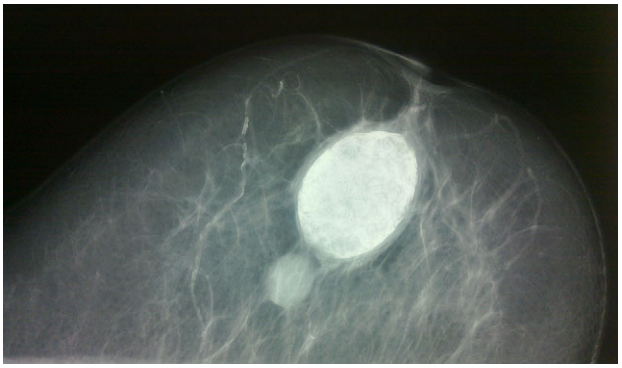

Figure 1: Mediolateral mammogram image of the right breast.

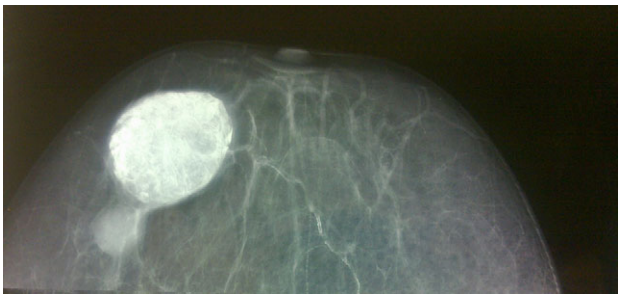

Figure 2: Craniocaudal mammogram image of the right breast.

breast (Figs 1 and 2). The largest mass was about 4 × 3 cm and multilobulated, and the small mass was about 1 × 1 cm well circumscribed in its contours.

There were associated calcifications at the periphery of the large lesion and diffuse linear microcalcifications at other areas of the breast. The left breast was within normal limits. The ultrasound revealed a large heterogeneous and lobulated mass that contained mixed hypo- and hyper-echoic degenerative contents with a small internal anechoic cyst at the periphery of the lesion in the upper outer quadrant of the right breast. There were no associated enlarged axillary lymph nodes.

Investigation revealed that the complete blood count, chemistry and liver function test were within normal limits with the exception of the echinococcal hemagglutination test, which was positive. The chest x-ray and abdominopelvic ultrasound were normal.

We suspected a hydatid cyst because the patient came to our clinic from an epidemic area. We decided on mass excision. The risks and benefits of the procedure were clearly explained to the patient, and consent was obtained. The total mass excision was performed without any spillage, and the procedure was uneventful. When the cyst was opened, endocysts were found, thus confirming it as a hydatid cyst, so the frozen examination not performed. The pathology report revealed eosinophilic membranes with a laminated appearance and massive calcifications, which are characteristic of a hydatid cyst of the breast.

DISCUSSION

The breast can be a primary site of infection or part of a disseminated hydatidosis. The adult *E. granulosus* worm produces eggs that are passed in stool of infected dogs and wild canine. Eggs ingested by intermediate hosts, such as cows, sheep and humans, release an embryo in the duodenum, which penetrates intestinal mucosa and enters the circulation [3]. The liver acts as the first filter and stops about 75% of the embryos, while the lungs act as a second filter and stop about 10%. Only 15% of the embryos are free to develop cysts in other organs of the body [4]. Hydatid cysts of the breast usually occur primarily via hematogenous spread.

The patient described here came from an area with minimal healthcare where hydatid cysts are epidemic, and we did not find any other affected organs. The mother detected a growing mass just after completion of breast feeding. This could indicate the possibility of retrograde passage of *E. granulosus* egg through lactating ducts during breast feeding. The released embryo could then penetrate ductal mucus, enter the breast tissue and result in the development of hydatid cysts. Identifying this mode of parasite spread requires more precise and specific evaluations.

Hydatid cysts can be diagnosed by radiologic or serologic tests, neither of which is definitive [5]. Preoperative diagnosis can be made by fine needle aspiration cytology where scoliosis, hooklets or laminated membrane can be identified. However, the use of fine needle aspiration is controversial at present. There are only a few studies describing this method, and it is generally safe and without complications [4, 5], but puncturing of the cyst may lead to an anaphylactic reaction and secondary cyst development due to spillage of hydatid fluid [6].

Additionally, the results of fine needle aspiration cytology are not conclusive. The treatment for breast hydatid cyst is total excision, avoiding release of the cyst contents, and maximum conservation of the affected viscera [7]. Preoperative chemotherapy using Albendazole has been shown to decrease the incidence of recurrence [8]. Accidental implantation may be prevented by irrigation of the cyst bed with a 3% saline solution [2]. Postoperative chemotherapy using Albendazole may decrease the recurrence rate of hydatid cyst disease [7].

If a patient comes from an area with minimal healthcare and where hydatid cysts are epidemic, this disease should tested for by radiologic or serologic examination. Total mass excision without spillage is the best diagnostic and treatment tool.

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CONFLICT OF INTEREST STATEMENT

None declared.

REFERENCES

1. Taori KB, Mahajan SM, Hirawe SR, Mundhada RG. Hydatid disease of the breast. *Indian J Radiol Imag* 2004;**14**:57–60.
2. 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;**6**:293.

3. Garcia LS, Shimizu RY, Bruckner DA. Sinus tract extension of a liver hydatid cyst and recovery of diagnostic hooklets in sputum. *Am J Clin Pathol* 1986;**85**:519–21.
4. Das DK, Choudhury U. Hydatid disease: an unusual breast lump. *J Indian Med Assoc* 2002;**100**:327–8.
5. Mirdha BR, Biswas A. Echinococcosis: presenting as palpable lumps of breast. *Indian J Chest Dis Allied Sci* 2001;**43**:239–41.
6. Jakubowski MS, Barnard DE. Anaphylactic shock during operation for hydatid disease. *Anesthesiology* 1971;**34**:197–9.
7. Ouedraogo EG. Hydatid cyst of the breast. 20 cases. *J Gynecol Obstet Biol Reprod (Paris)* 1986;**15**:187–94.
8. Yaqoob N, Kayani N, Shamim MS. Mammary echinococcosis: two cases and literature review. *J Pak Med Assoc*. 2004;**54**: 283–4.