ABSTRACT

Hydatid cyst in the breast is very rare and unusual for its location. Reported incidence of hydatid cyst in the breast is 0.27% in the literature. Herein, we report a case of hydatid cyst of breast in a 65-year-old female who presented with painless, slowly growing lump in the breast mimicking breast neoplasm clinically. Radiological investigations such as ultrasonography and mammography may be helpful but not conclusive. Preoperative fine-needle aspiration cytology (FNAC) diagnosis was consistent with hydatid cyst of breast and was without any complications. Histopathological examination of lumpectomy specimen confirmed the diagnosis of hydatid cyst of breast. High suspicion of this entity should be there in the differential diagnosis in the evaluation of breast lump in endemic as well as in migrant population in nonendemic areas.

Key words: Breast; fine-needle aspiration cytology (FNAC); hydatid cyst; lump

Introduction

Echinococcosis or hydatid cyst is a parasitic infection caused by larval cestode (tapeworm) of genus Echinococcus; Echinococcus granulosus being the commonest species. Hydatid disease is endemic in many parts of the world such as the Mediterranean, South America, North and East Africa, Australia, Russia, Central Asia, and China. Liver is the most common site affected (75%), followed by lungs (15%), muscles (4%), kidney (2%), spleen (2%), bone (1%) etc.

Isolated breast involvement is a very rare occurrence with reported incidence rate of 0.27% in the literature. Breast involvement can be a primary site or may be part of disseminated hydatidosis. Clinical presentation of patient with palpable and painless lump in the breast makes it challenging to differentiate it from other lesions of breast especially in nonendemic areas.

Herein, we report a case of cytologically diagnosed isolated hydatid cyst of breast masquerading breast neoplasm and review the literature.

Case Report

A 65-year-old female presented with complaints of painless, progressive, and slowly increasing lump in the left breast since 2-3 months. There was no history of nipple discharge, injury to the breast, or family history of breast cancer. Local examination revealed 4.5 cm × 3 cm, mobile, nontender, mobile, and non-tender. Radiological investigations such as ultrasonography and mammography were performed. The ultrasonography showed a well-defined, fluid-filled lesion with internal septations and the mammography showed a circumscribed, well-circumscribed lesion without calcification. Fine-needle aspiration cytology (FNAC) was performed, and the cytodiagnosis was consistent with hydatid cyst of breast. The patient underwent lumpectomy, and the histopathological examination confirmed the diagnosis of hydatid cyst of breast.

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and soft-to-firm mass in the left breast. The mass was not fixed to underlying tissue or overlying skin. There was no axillary lymphadenopathy and contralateral breast was normal. Systemic examination findings were unremarkable. Routine laboratory investigations including complete blood count and biochemistry were normal. Radiological examinations like chest radiograph and abdominal ultrasound were normal. In view of clinical diagnosis of breast neoplasm fine-needle aspiration cytology (FNAC) was advised in our patient. FNAC showed occasional benign ductal epithelial cells, granular debris, and scattered refractile hooklets [Figure 1a]. No complications of FNAC were observed in our patient. FNAC diagnosis of hydatid cyst of breast was offered. Patient underwent lumpectomy after medical treatment with albendazole for 2 weeks [Figure 1b].

Grossly lumpectomy specimen measured 4 cm × 3.5 cm × 2 cm. Externally well-circumscribed lump. Cut section showed whitish cyst filled with a whitish membranous material [Figure 1c].

Histopathological examination showed cyst wall comprising of outer fibrous laminar layer and focal inner germinal layer. The cyst lumen showed scolices and hooklets [Figure 1d]. The surrounding fibroadipose tissue and breast parenchyma showed moderate infiltration of eosinophils, lymphocytes, and focal area of foreign body giant cells reaction. Histopathological findings confirmed the cytological diagnosis of hydatid cyst of breast. Postoperative recovery was uneventful with no similar lesion at other sites during the last 5 months’ follow-up.

Discussion

Hydatid disease of breast is rare and accounts for only 0.27% of all cases.\(^3\) Breast involvement by hydatid disease can be a primary disease or can be a part of disseminated hydatidosis.\(^4\) Hydatid disease is a zoonotic infection caused by larval form of species of cestode Echinococcus. The parasite completes its life cycle in two hosts. Dogs and wild canines are the definitive hosts and domestic animals, such as sheep, are the intermediate hosts while human beings are the accidental intermediate hosts. \(Echinococcus granulosus\), the most common species produces eggs that are passed in stools. Eggs are ingested by intermediate hosts such as cow, sheep, and accidentally by humans. Eggs liberate an embryo in the duodenum that penetrate intestinal mucosa and enter the portal circulation.\(^5,6\) Seventy-five percent of embryos are filtered by liver, 10% by lungs, and only 10-15% embryos are free to develop unilocular cyst in various other organs.

Figure 1: (a) FNAC showing granular debris and scattered refractile hooklets. [Pap, ×400]. (b) Intraoperative photograph of lumpectomy showing well-circumscribed lump, 4 cm × 3.5 cm × 2 cm (c) Cut section of lumpectomy showing whitish cyst filled with a whitish membranous material (d) Histopathological examination showing cyst wall comprising of outer fibrous laminar layer and focal inner germinal layer. The cyst lumen showed scolices and hooklets. [H and E, ×400]
Clinically, hydatid cyst of breast usually present 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. Due to this clinical presentation and rarity of this entity in breast it mimics fibroadenoma or fibrocystic disease in younger females and malignancy in older age. In our case also hydatid disease was not suspected and clinical diagnosis of breast neoplasm was made.

Various preoperative diagnostic modalities may be helpful for the diagnosis of hydatid cyst in the breast such as computed tomography (CT) scan, magnetic resonance imaging (MRI), mammography, serological investigations, and FNAC. Mammography and ultrasound may be helpful but not conclusive because of the resemblance of radiological findings with that of benign cystic lesion and breast abscess. Mammography may show circumscribed mass lesion with ring-shaped structures inside the mass.[7] Serological investigations, such as indirect hemagglutination test, may be used for diagnosis and in the follow-up of patient. Mammography and MRI investigations were refused by our patient due to financial problems.

Diagnosis of hydatid cyst of breast is made usually postoperatively in the histopathological examination of breast lump. Preoperative diagnosis can be made on FNAC of breast lump showing refractile hooklets and scolices. But due to risk of anaphylactic reaction it is not recommended by many authors in suspected cases of hydatid disease of breast. However, review of literature also showed no complications in preoperative diagnosis of hydatid cyst by FNAC in few studies.[8,9]

Due to clinical suspicion of breast neoplasm, FNAC was advised in our patient. It showed characteristic refractile hooklets and debris and no complication of FNAC was observed in our case.

The treatment of choice of hydatid cyst of breast is complete surgical excision of cyst and its contents without spillage into the surrounding tissue. Preoperative chemotherapy with albendazole may reduce the recurrence of disease. The recurrence rate due to incomplete removal or unidentified cyst has remained between 2% and 25%.[10]

Conclusion

To conclude, hydatid cyst in the breast is very rare and unusual for its location. High suspicion of this entity should be there in the differential diagnosis in the evaluation of breast lump in endemic as well as in migrant population in nonendemic areas.

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Conflicts of interest

There are no conflicts of interest.

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