ORIGINAL RESEARCH PAPER

Pathology

RARE CASE REPORT ON HYDATID CYST OF BREAST ON FINE NEEDLE ASPIRATION CYTOLOGY

KEY WORDS:

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INTRODUCTION

Hydatid disease (cystic echinococcosis) is a parasitic infection caused by the larval stage of Echinococcus granulosus and remains endemic in many livestock-raising regions. The parasite follows a natural "dog-sheep" transmission cycle, with humans serving as accidental intermediate hosts. Although the liver and lungs are the most frequently affected sites, breast involvement is extremely rare, accounting for only about 0.27% of cases. Clinically, breast hydatidosis presents as a painless lump and may mimic other benign and malignant breast lesions, making diagnosis challenging. Only a few cases have been confirmed by FNAC. We report a rare cytologically diagnosed case of hydatid cyst of the breast.

CASE REPORT

A 34-year-old woman presented to tertiary care Hospital (GBH American institute of medical sciences) , Udaipur, Rajasthan with a history of painless swelling in the left breast for one year, which had gradually increased in size in the last 1 month. She reported itching and dizziness from 3 days but no pain, nipple discharge, or systemic symptoms such as fever or weight loss. There was no significant history of trauma, lactation-associated abscess, or breast surgery, also had no significant past medical or surgical history. The patient belonged to a rural area, a farmer by occupation and was in close contact to cats.

On examination, inspection of the left breast revealed no visible skin changes, nipple retraction, or ulceration. On palpation, a solitary, well-defined lump measuring approximately 3 × 2 cm was noted in the lower inner quadrant of the left breast. The lump was firm to cystic in consistency, non-tender, and had restricted mobility. No axillary lymphadenopathy was detected. The right breast and axilla were unremarkable.

Ultrasound findings: Ultrasound of both breasts revealed an ill-defined hypoechoic to anechoic cystic lesion with internal heterogeneous echoes and septations measuring 16 × 11 mm at the 7–8 o'clock position of the lower-inner quadrant of the left breast. Adjacent inflammatory changes were noted, suggestive of an infected complex cyst (BI-RADS II). The right breast was normal. A few sub centimetric lymph nodes with preserved fatty hilum were present bilaterally.

Fine Needle Aspiration Cytology (FNAC) of the left breast swelling yielded pale-yellow fluid. Microscopic examination revealed numerous scattered hooklets as well as daughter cyst along with acute inflammatory infiltrate composed of neutrophils and lymphocytes in a proteinaceous background. The cytological impression was an inflammatory cystic lesion consistent with a hydatid cyst.

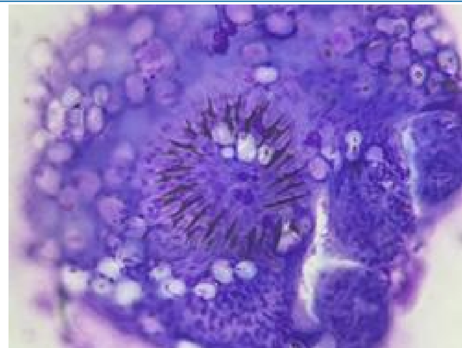

Figure 1A: Hooklets

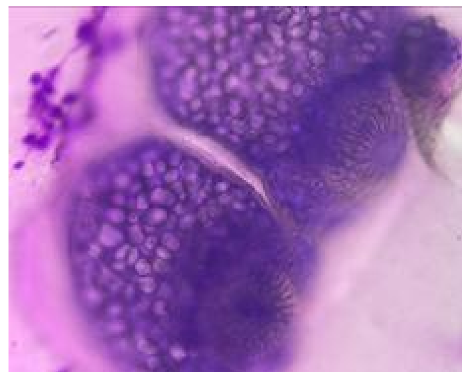

Figure 1B: Scolex with daughter cyst

DISCUSSION

Hydatid disease is a parasitic zoonosis caused by the larval form of Echinococcus granulosus. It predominantly involves the liver and lungs, while primary breast involvement is exceedingly uncommon, representing less than 0.3% of all cases. Humans are accidental intermediate hosts who acquire infection through ingestion of food or water contaminated with parasite eggs from the feces of infected dogs. The embryos penetrate the intestinal mucosa, enter the portal circulation, and develop into hydatid cysts in various organs.

Primary hydatid cyst of the breast is a rare entity and may occur through hematogenous dissemination of the oncospheres. Clinically, it manifests as a slow-growing, painless, firm-to-cystic mass, often indistinguishable from other benign breast lesions such as fibroadenoma, cyst, or abscess. Therefore, in endemic areas, hydatid disease should be considered in the differential diagnosis of cystic breast swellings.

Ultrasonography is a valuable diagnostic tool that typically demonstrates a cystic lesion with internal septations or daughter cysts, although mammography and USG are inadequate in diagnosing hydatid cyst of the breast. Imaging features of hydatid cyst are nonspecific and may be confused

with fibroadenoma, phyllodes tumor and carcinomas (8). serological tests are also not always positive for hydatid disease (2,5). Fine needle aspiration cytology is valuable in definite diagnosis, but the risk of contamination and anaphylaxis must be kept in mind in cases with hydatid cyst (4,5). However, neither our case, nor any case in the literature suffered from anaphylaxis (3,6,8, 0). FNAC remains a simple and reliable diagnostic modality, and identification of laminated membranes, scolices, or hooklets is considered pathognomonic for hydatid disease.

Definitive management consists of complete surgical excision of the cyst without rupture to prevent secondary implantation or anaphylactic reaction. Adjunctive therapy with albendazole is recommended pre- and postoperatively to sterilize the cyst and minimize recurrence. The prognosis following total excision is excellent.

This case highlights the rarity of primary hydatid disease of the breast and emphasizes the importance of maintaining a high index of suspicion in patients presenting with cystic breast lesions in endemic regions

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