

Case Report

Isolated Breast Hydatid Cyst: A Rare Case Report

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ABSTRACT

Echinococcosis, caused by *Echinococcus granulosus*, is a significant yet uncommon zoonotic disease. Humans become infected by eating food contaminated with dog feces or by coming into close contact with animals; the liver and lungs are usually affected. Nevertheless, breast hydatid cysts are extremely uncommon, making for only 0.27% of all occurrences. This report describes the case of a 37-year-old woman who had been experiencing pain and swelling in her right breast for six months.

Keywords: Breast hydatid cyst, Echinococcosis, Hydatid disease

INTRODUCTION

Echinococcus granulosus tapeworms cause a zoonotic larval infection known as Hydatid disease or cystic echinococcosis. Geographically, Hydatid disease is a significant public health issue in the Mediterranean, China, Russia, Australia, North and East Africa, and South America. In India, echinococcosis is a significant health problem in Andhra Pradesh and Tamil Nadu. [1, 2] Dogs are the definitive hosts of echinococcosis, and humans are accidental intermediate hosts. Human infection usually occurs through accidental ingestion of food or water contaminated with dog feces or through direct contact with dogs. The most often impacted organs are the lungs (25%) and liver (63%). Less frequently, it can also impact the kidneys (2%), spleen (1%) and brain (1%) as well as the muscle (5%), and bone (3%). [3] Only in 0.27% of patients, the breast was impacted. [4] The reported cases of primary breast hydatids are very rare in India. The case of a 37-year-old woman who was diagnosed with a hydatid cyst in the right upper outer quadrant of her breast is presented in this report. The condition was effectively treated with a combination of surgical intervention and anti-helminthic therapy.

CASE HISTORY

A 37-year-old female presented to the surgical outpatient department of Tertiary Care Hospital of North Gujarat with pain and swelling in the right side of her breast for a duration of 6 months. The size of the lump increased gradually over a period of time. There was no history of fever coinciding with the appearance of the lump, abdominal pain, chest pain, or trauma. She did not have any known co-existing medical conditions. Also, there was no history of continuous proximity or familiarity with dogs or other canine animals. Clinical examination revealed that the left breast was normal, but the right breast's upper outer quadrants had a noticeable, non-tender mass that measured 3.0 x 2.0 cm and had restricted mobility. She had neither supraclavicular nor axillary lymphadenopathy, and both nipples were normal. The results of routine blood tests were within normal limits. A fine needle aspiration cytology (FNAC) was conducted on the lump, revealing fibro-fatty strands on the sediment smear. No scolices or ductal epithelial cells were detected. Subsequently, mammography was performed, which showed a dense fibro glandular stroma with a well-defined oval-shaped cystic lesion with a thick wall and internal membrane-like structure in the pectoral muscle at the 12 o'clock position. An ultrasound revealed a thick-walled cystic lesion measuring 3.0x1.9x3.1cm in the upper outer quadrant of the right breast. A chest X-ray showed no abnormalities.

The surgery was planned for the removal of the lump. The removed cyst was 3.5 x 3.0 cm and oval in shape. Upon opening the cyst, an endocyst was found. [Figure-1] Contents of cysts were sent to the departments of microbiology and pathology for microscopy and histopathological examination. A wet mount and modified acid-fast staining were performed on the centrifuged deposit of the cyst fluid to demonstrate protoscolexes and hooklets [Figures 2 & 3] while histological examination of the section from the cystic structure confirmed the diagnosis [Figures 4 & 5].

Post-operatively, a suction drain was placed and removed after a period of 24 hours. No additional complications were observed. The patient was prescribed albendazole tablets, 400mg twice a day, for 28 days.



Figure-1: Excised cyst with endocyst

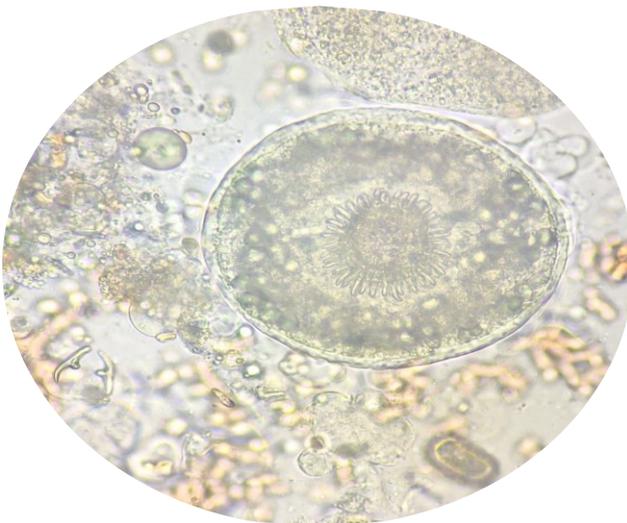


Figure-2: Wet mount demonstrating hooklets & protoscolices



Figure-3: Modified ZN stain demonstrating acid fast hooklets

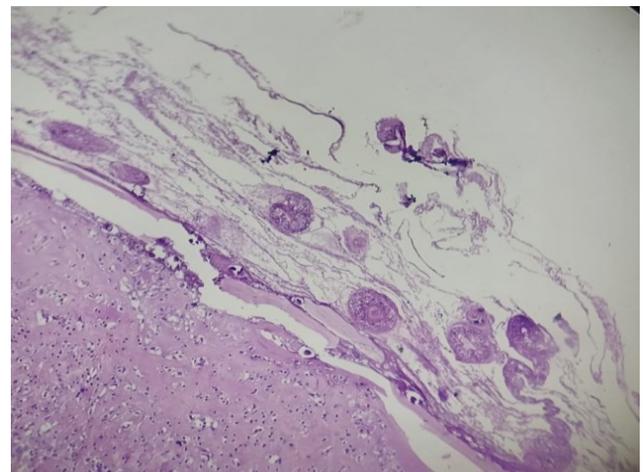


Figure-4: Laminated layer with protoscolices (10X)

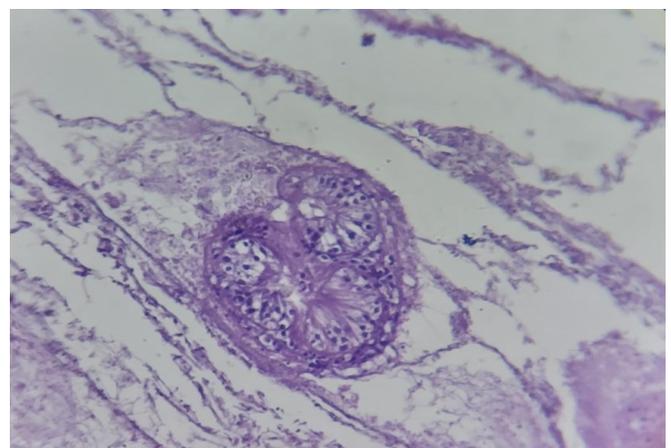


Figure-5: Laminated layer with protoscolices (40X)

DISCUSSION

Hydatid disease remains a significant issue, particularly in rural areas. A rare occurrence, isolated breast hydatid cysts, without involving any other organ, is observed in only 0.27 to 0.75% of cases. The condition typically presents as a painless, gradual swelling, which can resemble various other breast conditions like fibroadenoma, galactocele, lactating adenoma, phyllodes tumors, cystic mastopathy, chronic abscesses, and breast cancer. [5] The reported cases of breast hydatid cysts are very rare in India.

Initially, small hydatid cysts are asymptomatic, but as they grow in size, they can cause different symptoms based on their size, location, the involved organ, interactions with nearby organs, and complications from cyst rupture. [6,7] In this particular case, the breast lump was painful and has been progressively increasing in size. Despite echinococcosis being zoonotic in nature, there was no history of contact with animals in this case.

In the past, the use of FNAC for preoperative diagnosis of hydatid cysts was debated, but recent evidence has shown that the procedure is safe, quick, and cost-effective. [8-10] However, in our case, FNAC only revealed fibrofatty strands without any features indicative of a hydatid cyst. Imaging techniques such as mammography, ultrasonography, CT, or MRI can be done for identification of the location and size of the cysts. [11] In our case, mammography displayed a dense fibro-glandular stroma with a well-defined oval-shaped cystic lesion, and a breast ultrasound revealed a 3.0 x 1.9 x 3.1 cm cyst. A definitive diagnosis is typically made during surgery and confirmed through histological examination. In our case, the cyst wall histology commonly indicated an outer fibrous laminar layer and an inner germinal layer, enclosed by granulation tissue, and protoscoleces and hooklets were easily identified using wet mount preparation in microbiology. [12,13] Surgery is the most popular treatment for hydatid cysts in all organs. For some people, albendazole used in medical treatment is also beneficial. In our case, albendazole was administered postoperatively after complete cyst excision and showed promising clinical results.

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