



## Isolated Primary Hydatid Cyst of Breast: A Case Report and Preoperative Diagnosis

Authors

**Mahesh Sonwal<sup>1</sup>, Mamta Sabal<sup>2</sup>, R.S.Meena<sup>3</sup>**

<sup>1</sup>Post Graduate, Department of General Surgery, GMC, Kota

<sup>2</sup>Post Graduate, Department of Obstetrics and Gynecology, GMC, Kota

<sup>3</sup>Senior Professor and Head of the Department, Department General Surgery, GMC, Kota

Corresponding Author

**Mahesh Sonwal**

Post Graduate, Department of General Surgery, GMC, Kota

Email: [sonwalsms@gmail.com](mailto:sonwalsms@gmail.com), Contact no: 9785332419/9462506555

### ABSTRACT

*Hydatid cyst of breast is rare disease even in endemic areas. The causative agent is Echinococcus granulosus and Echinococcus multilocularis (Echinococcus alveolaris). Humans are accidental intermediate host of this organism. The incidence of the disease is 70% in the liver, 20% in the lungs and 10% in the other organs. Breast involvement is rare accounting for only 0.27 % of the localization. Breast Hydatid disease may be isolated, or it may be a part of disseminated hydatidosis. Typically, the patients present with a painless breast lump that increase in size over time. Preoperative diagnosis can be made with clinical assessment and ultrasound and FNAC. 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. Best modality of treatment is complete surgical excision without spillage and post operative albendazole chemotherapy help in reducing risk of recurrence of the disease.*

**Key Words:** *hydatid cyst of breast, preoperative diagnosis.*

### INTRODUCTION

Hydatid disease is a parasitosis generating an important health problem in the countries worldwide where animal husbandry is common. The causative agent is Echinococcus granulosus and Echinococcus multilocularis (Echinococcus alveolaris). Hydatid disease is caused by larval form of Echinococcus granulosus, encountered endemically in sheep breeding communities.

Humans are accidental intermediate host of this organism. The incidence of the disease is 70% in

the liver, 20% in the lungs and 10% in the other organs<sup>[1]</sup>. Breast involvement is rare accounting for only 0.27 % of the localization<sup>[2]</sup>. Breast hydatid cysts are rare, even in endemic regions<sup>[3]</sup>. Breast Hydatid disease may be isolated, or it may be a part of disseminated hydatidosis<sup>[4,5]</sup>.

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<sup>[6]</sup>. The diagnosis of hydatid disease is based on clinical assessment,

ultrasonography (USG) since it is usually asymptomatic<sup>[7]</sup>, and other investigation is serology and FNAC. 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 and majority of the reported cases have been diagnosed postoperatively. Herein, we report a case of a primary isolated hydatid cyst of the breast.

### CASE REPORT

A 44-year-old female patient without any medical history presented, with a palpable mass in her left breast for 4-5 year, not associated with pain. There was no nipple discharge, or fever. No history of breast trauma, hormone replacement therapy, or family history of breast cancer. On examination the right breast and axilla were normal. The nipple, areola, and skin are unremarkable. There is a single 5cm × 4cm, non tender, firm, freely mobile lump with regular borders smooth surface, in lower inner quadrant of the left breast. She had no axillary or supraclavicular Lymphadenopathy and systemic examination did not show any abnormality. A posteroanterior radiograph of the chest was normal. Abdominal ultrasound was normal.

On blood examination total leukocyte count was 4500 cells/ml and eosinophils 1 %. Ultrasound revealed a single large heterogeneous and lobulated mass seen in the left breast inner lower quadrant. Doppler images were also obtained which revealed no internal vascularity within the mass. Plan was made for histological confirmation by biopsy. The procedure risks and benefits were completely explained to the patient. Procedure consent form was obtained from the patient. Ultrasound guided FNAC was performed. FNAC of the breast lump was done and 1 ml of slight turbid fluid was obtained on aspiration. Microscopic examination showed scattered scolices along with fragments of laminated

membrane suggestive of hydatid cyst. A diagnosis of isolated hydatid cyst of left breast was made as a thorough evaluation didn't show any evidence of hydatid cyst in any other part of the body. The patient was taken up for surgery and the lump was excised in toto after instilling 3 % hypertonic saline. On sectioning the lump, a fluid filled cystic lesion with hydatid membranes (fig.1) and daughter cysts (fig.2) was seen. After evacuation complete excision of cyst wall done. Postoperatively patient had an uneventful recovery. She was discharged in good general condition and is on regular follow up and no recurrence. Histopathological examination confirmed the diagnosis of hydatid cyst of the breast.



**Fig.1:** left breast with hydatid cyst in inner Lower quadrant



**Fig.2:** daughter hydatid cyst

## DISCUSSION

Hydatid cyst is a disease involving all tissues of the body. Its incidence is high where animal husbandry is common and among people who are in contact with animals. Hydatid disease of the breast is rare even in endemic areas<sup>[3]</sup>. Hydatid cyst of the breast usually occurs primarily via hematogenous spread. It was reported that a majority of secondary cysts occurred due to the rupture of the cyst in the liver. The breast can be a primary site or part of a disseminated hydatidosis<sup>[4,5]</sup>.

Hydatid cyst of the breast is seen in women aged between 30-50 years<sup>[6]</sup>. The disease exists in two forms: the larval stage (metacestode) and the adult stage (tenia). The parasites are perpetuated in life cycles with carnivores (dogs and wild canine) as definitive hosts. Humans are the accidental intermediate host (dead end) and animals (herbivores and omnivores) are both intermediate and definitive hosts<sup>[8]</sup>. The adult *E. granulosus* is a worm, when infected it produces eggs that are passed in stool. Eggs ingested by intermediate hosts like cows, sheep, and humans, liberate an embryo in the duodenum, which penetrates intestinal mucosa and enters the portal circulation<sup>[9]</sup>. The liver acts as a first filter and stops about 70%, while lungs, the second filter, stop about 20% and only 10% embryos are free to develop cysts in other organs of the body<sup>[7]</sup>.

Typically, the patient presents with painless breast lump, which increases slowly in size without regional lymph node involvement. It generally affects women between 30 and 50 years of age. It might mimic fibroadenoma, phyllodes tumors, chronic abscesses, or even carcinoma. So breast hydatid cyst should be included in differential diagnosis of breast lumps especially in endemic areas<sup>[10]</sup>. Triple assessment which includes clinical assessment, USG and FNAC is commonly used for the diagnosis of breast lumps<sup>[11]</sup>.

In the present case clinical assessment and FNAC was diagnostic. Preoperative diagnosis can be made by fine needle aspiration cytology where scoleces, hooklets or laminated membrane can be

identified. It is a safe procedure, as no complications were mentioned in the literature<sup>[5, 12]</sup>.

The disease can be diagnosed by radiologic or serologic means, both of which are not definitive<sup>[13]</sup>. An increase in the number of peripheral blood eosinophils occurs in approximately 25-50 % of the patients with hydatid cyst<sup>[14]</sup>. The patient presented here did not have eosinophilia. The ultrasound of left breast revealed a single large heterogeneous and lobulated mass seen in the left breast inner lower quadrant. Doppler images were also obtained which revealed no internal vascularity within the mass. FNAC of the breast lump was done and 1 ml of slight turbid fluid was obtained on aspiration. Microscopic examination showed scattered scolices along with fragments of laminated membrane suggestive of hydatid cyst.

A definitive diagnosis was made in the postoperative period by histopathological examination, despite various preoperative diagnostic tools. The treatment of a hydatid cyst of the breast is complete excision. However, recurrent cysts have been reported postoperatively in 10% of patients. Albendazole may decrease the recurrence rate of hydatid cyst disease<sup>[15]</sup>.

## CONCLUSION

Hydatid cyst of the breast is very uncommon. It is very challenging to differentiate it from other tumoral lesions of the breast. However, it should be included in differential diagnosis of breast lumps for patients living in endemic areas. Fine needle aspiration cytology can help in its preoperative diagnosis, but majority of the reported cases have been diagnosed postoperatively. Recurrence after surgical removal has been reported but postoperative Albendazole and total mass excision without spillage may decrease its recurrence rate.

## REFERENCES

1. Demirci S, Eraslam S, Anadole E, Bozatli L (1989) Comparison of the result of different surgical techniques in the

- management of hydatid cyst of liver. *World J Surg* 13:88–91
2. Abi F, Fares F, Khasis D, Bouzidi A (1989) Unusual localization of hydatid cyst. *Aproposes of 40 cases. L Chir* 307–312
  3. Trabelsi A, Fatnaci R, Ouni F, Rammeh S, Korbi S. Hydatid cyst of the breast: a case report. *Pathologica.* 2008;100:197–198.[PubMed]
  4. Farrokh D. Hydatid cysts of the breast: a report of three cases. *Irn J Med Sci* 2000; 25(1&2):72–5.
  5. Acar T, Gömccl Y, Güzel K, Yazgan A, Aydyn R. Isolated hydatid cyst of the breast. *SMJ* 2003; 48(2):52–3.
  6. 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.
  7. Uncu H, Ereku S. Hydatid Cyst of the Breast. *Acta chir belg* 2007;107:570-571. (PMID: 18074924)
  8. Josef EF. Echinococcal cyst-open approach. In: Milicevic Miroslav, editor. *Fischer's mastery of surgery, 1, 6th ed.* New Delhi: Lipincott Williams & Wilkins, Wolters Kluwer Health; 2012. p. 1189.
  9. 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.
  10. Tutar N, Cakir B, Geyik E, Tarhan NC, Niron EA. Hydatid cyst in breast: mammography and ultrasound findings. *Br J Radiol.* 2006;79:114–116.<http://dx.doi.org/10.1259/bjr/3315623> 9.[PubMed]
  11. Russel RCG, Williams NS, Bulstrode CJK (2004) Triple assessment of breast lumps. *Short Practice of Surgery by Bailey of Love.* Arnold Publications 24th Edition, 826
  12. Das DK, Choudhury U. An unusual breast lump. *JIMA* 2002;100(5):327–8.
  13. Mirdha BR, Biswas A. Echinococcosis: presenting as palpable lumps of breast. *Indian J Chest Dis Allied Sci* 2001;43:239–41.
  14. Rai LCSP, Panda BBN, Ganguly CD, Bharadwaj LCR. Pulmonary Hydatid: Diagnosis and Response to Hypertonic Saline Irrigation and Albendazole. *MJAFI* 2005; 61:9-12.
  15. Ouedrago EG. Hydatid cyst of the breast: 20 cases. *J Gynecol Obstet Biol Reprod* 1986;15:187–94.