

## Hydatid Disease of the Breast: A Case Report of an Unusual Localization

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**Abstract:** Hydatid cysts are caused by the larval form of *Echinococcus granulosus*. Humans are accidental intermediate hosts of this organism. The liver and lung are the most commonly affected organs. Hydatid disease is endemic in countries where sheep breeding constitutes an important means of livelihood. Breast involvement is rare, accounting for only 0.27- 0.37% of the localizations. We report a case of primary hydatid disease of the breast in 41-year old woman in Maragheh city (west of Iran).

**Key words:** Hydatid disease, case report, unusual localization, breast involvement

### CASE REPORT

A 41-year-old woman presented to Amir Al Mominin Hospital in Maragheh city (west of Iran) with a lump in the upper outer quadrant of the left breast. The lump had been present for 10 months. She had no risk factors for breast cancer. Physical examination revealed a 5×4 cm, firm, mobile mass, with regular borders. She had no axillary lymphadenopathy. Abdominal ultrasonography, chest radiograph and bilateral mammography did not reveal any other lump (hydatid cysts). The rest of the results of the physical examination were normal. The clinical diagnosis was consistent with a giant fibroadenoma and a decision was made to perform surgical excision of the lump. Surgery revealed a bilobed mass with a dense surrounding fibrous tissue. Complete excision was performed. On sectioning, it was realized that this mass could be a hydatid cyst since a laminated membrane was seen. The mass was partially cystic and contained a yellowish, thick fluid. The wound was irrigated with 3% saline solution before closure. Histologic examination confirmed the diagnosis of hydatid disease. No bacteria were grown from the thick fluid inside the lump. She remains free of any recurrence 36 months after surgery.

### DISCUSSION

Hydatid disease of the breast is rare, accounting for only 0.27-0.37% of the localizations of the cyst (Yuksel *et al.*, 2005). The breast can be the only primary site or part of disseminated hydatidosis. Despite its rareness, primary breast involvement might constitute an important differential diagnosis of breast lumps in areas

endemic for hydatid disease. It usually presents as a painless breast lump that slowly increases in size. It generally affects women 30-50 years of age, although a wider age range (26-74 years) has been reported (Yaghan, 1999). No specific signs are found on examination. As in the case reported here, the diagnosis is frequently delayed until the time of surgery for what was considered a benign lump after observing the laminated membrane or post-operatively after receiving the pathology report (Maalej *et al.*, 2006; Arian *et al.*, 2004).

Pre-operative diagnosis of mammary hydatid disease has been made on the basis of Fine-Needle Aspiration Cytology (FNAC), which might show the diagnostic hooklets or the laminated membrane (Yaghan, 1999). No urticarial or anaphylactic reactions have been reported as a complication of this procedure. This supports the importance of the widely adopted routine use of FNAC, even in patients undergoing excision for clinically obvious fibroadenomas (Garamizadeh *et al.*, 2003).

Mammography shows a nonspecific, homogenous, smooth, circumscribed lesion (Yaghan, 1999). Differential diagnoses include cysts, fibroadenomas, phylloides tumors and rarely circumscribed carcinomas. Vega and others were the first to report the characteristic ring-shaped structures inside the mass in an accidentally performed overpenetrated view (Yaghan, 1999). They suggested that this finding might be the result of the difference in the density of the walls and the contents of the daughter cysts inside the fluid-filled hydatid cysts. Such an overpenetrated view might be recommended in endemic areas if FNAC and/or breast ultrasound results were suggestive of hydatid disease. The sonographic appearance of mammary hydatid cysts is similar to those

seen in other organs, showing a well-defined, lobulated mass of heterogeneous echogenicity that may contain multiple cystic areas. Due to the rareness of this condition, the above mentioned mammographic and sonographic appearance of breast hydatid disease are frequently missed until aspiration cytology or an operative diagnosis has been made (Geramizadeh *et al.*, 2003; Sodhani *et al.*, 2002).

A well-circumscribed cystic lesion with capsular enhancement seen by Magnetic Resonance Imaging (MRI) may suggest a hydatid cyst of the breast if the results of a physical examination are not suggestive of a breast abscess, which produces similar MRI findings (Tukel *et al.*, 1997). Abdominal ultrasonography and a plain chest radiograph are mandatory to exclude liver and lung involvement. Serologic tests may help to confirm the diagnosis. The case reported here clearly demonstrates that positive serum reactions might occur even in the absence of associated liver and lung involvement.

Cystectomy is the preferred treatment and was found to be universally curative. In the case presented, a 3% saline solution was used to irrigate the bed of the cyst to reduce the possibility of accidental implantation. This was not associated with any wound morbidity.

### CONCLUSION

Breast hydatidosis is rare but should be considered in the differential diagnosis of breast lumps in areas endemic for hydatid disease. Clinically, a hydatid cyst in the breast might mimic fibroadenomas, cystic

mastopathies, phylloides tumors, chronic abscesses, or even carcinomas. Fine-needle aspiration cytology provides a safe pre-operative diagnosis. Cystectomy is curative. Due to widespread traveling between different countries, radiologists should be aware of this rare but potentially serious breast disease.

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