

## Isolated breast cysticercosis

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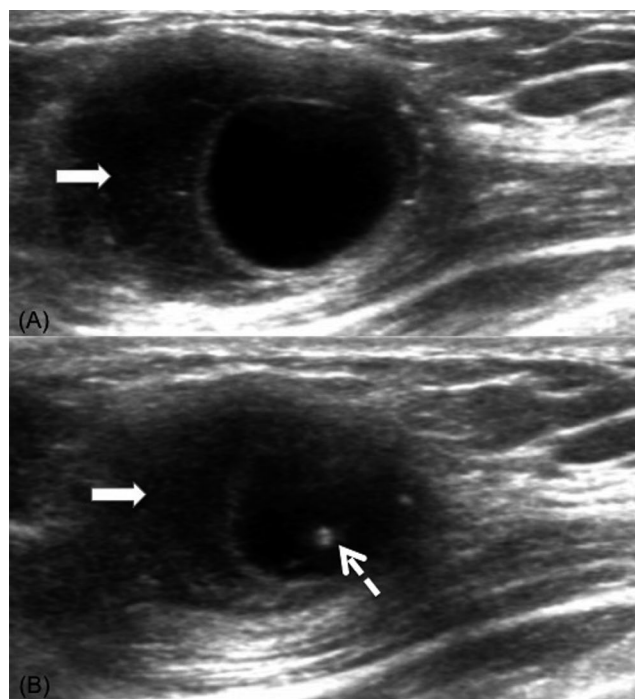
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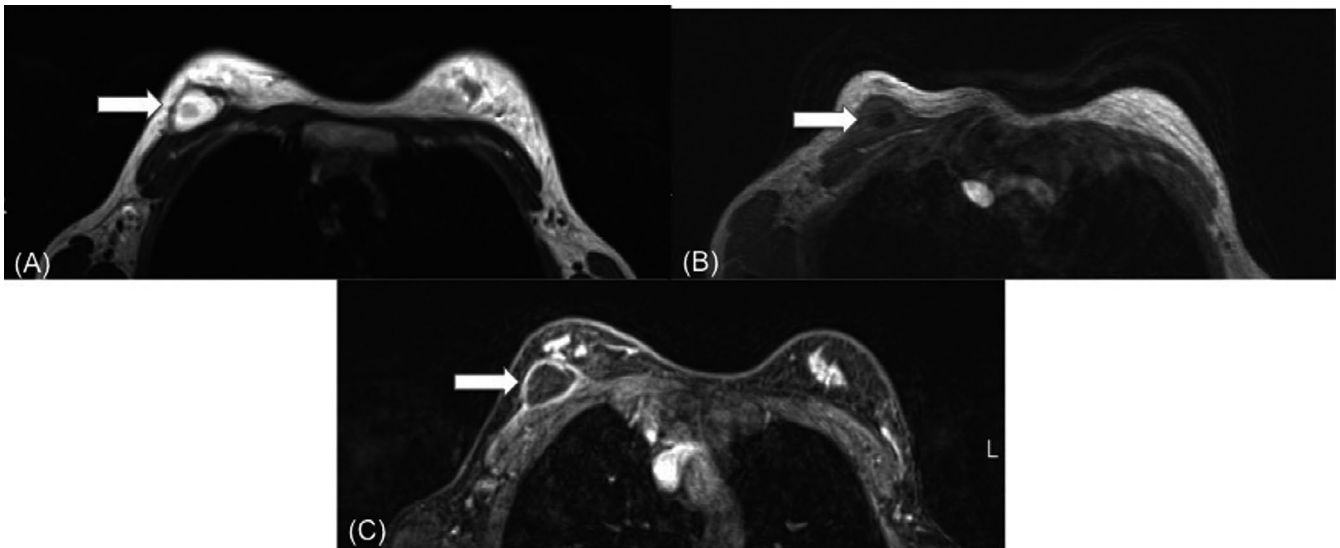
A 13-year-old girl presented to the outpatient clinic with a gradually increasing right breast lump. Clinically, the lump was nontender, mobile, and firm in consistency. As the patient was in her initial puberty, ultrasound was done as the first imaging investigation, which revealed a circumscribed, complex collection with heterogeneous internal echoes at the area of palpable concern (Figure 1A). Within this collection, a well-defined, 1 × 1 cm sized, clear cyst was seen, containing an eccentric echogenic speck suggestive of a scolex (Figure 1B). This appearance resembled that of soft tissue cysticercosis. Magnetic resonance imaging (MRI) was done to characterize the lesion, which depicted T2 hyperintense and T1 hypointense, circumscribed, oval mass showing peripheral rim enhancement on post-contrast images (Figure 2). Fine-needle aspiration cytology (FNAC) was done to confirm the diagnosis, which showed dagger-shaped structures conforming to the morphology of hooklets, with dense inflammatory cell infiltrate comprising predominantly of neutrophils, lymphocytes, few eosinophils, and a few clusters of macrophages (Figure 3). Some fragments were composed of an outer acellular layer with few pyknotic nuclei embedded in inner fibrillary material akin to parasitic tegument, surrounded by inflammatory cells. These findings were diagnostic of parasitic infestation by cysticercosis. Her neuro-ophthalmic examination was normal, and there were no lumps anywhere else on her body, making the diagnosis as "isolated breast cysticercosis." The patient was put on albendazole 15 mg/kg twice daily in divided doses for two weeks. At follow-up ultrasound, the lesion regressed in size and developed foci of peripheral calcification, suggesting response to treatment.

Human cysticercosis is a parasitic infection caused by the larval form of *Taenia solium*, *cysticercus cellulosae*. Humans may get infected by swallowing ova from contaminated water and uncooked

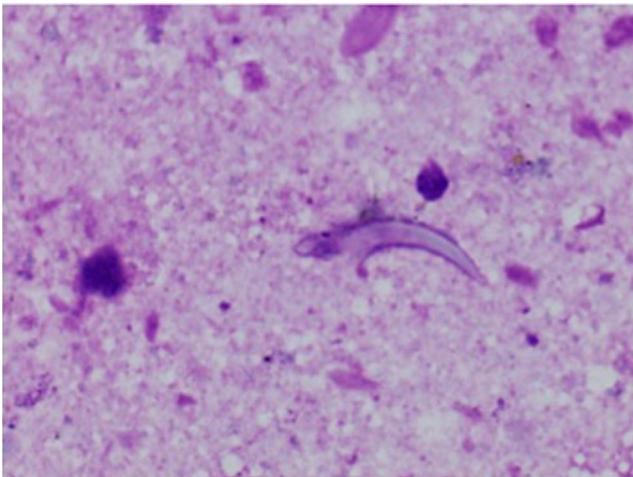
vegetables. The common sites infected in decreasing order of propensity are skeletal muscle, subcutaneous tissues, brain, and eye, breast being an unusual site.



**FIGURE 1** A, High-resolution ultrasound images using a linear probe reveal a circumscribed, complex collection with heterogeneous internal echoes (arrow) at the site of the lump. Within this collection, a well-defined, 1 × 1 cm sized, clear cyst is present. B, An eccentric echogenic speck suggestive of a scolex (dashed arrow) is seen inside the clear cyst



**FIGURE 2** A,B,C, Axial MRI images showing circumscribed, oval breast mass, which is T2 heterogeneously hyperintense, T1 hypointense and showing peripheral rim enhancement (arrows)



**FIGURE 3** FNAC image showing dagger-shaped structures conforming to the morphology of hooklets on May-Grunwald Giemsa Stain x 440, consistent with the diagnosis of cysticercosis [Color figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

Breast cysticercosis may be clinically difficult to differentiate from fibroadenomas, complex cystic lesions, and inclusion cysts. Ultrasound appearances of soft tissue cysticercosis can be either a

round, circumscribed cyst within a loculated collection having internal echoes, with a bright echogenic eccentric scolex projecting from the wall of the cyst, or an irregular cyst with small amount of fluid adjacent to it containing an extruded scolex. On MRI, cysticercosis is seen as T2 hyperintense and T1 hypointense lesion with peripheral rim enhancement. Sometimes, scolex may be seen as T2 hypointense focus in T2 hyperintense cystic lesion. FNAC may often obviate the need for biopsy or excision as the worm is “hooked due to hooklet,” demonstration of cephalad end of the worm being characteristic.

In conclusion, despite its rarity, breast cysticercosis should be kept in mind while evaluating a breast lump, especially in the tropical and developing countries where cysticercosis is a larger public health problem. Knowledge of its imaging findings is of utmost importance so that the diagnosis is not missed.

#### CONFLICT OF INTEREST

The authors have no conflict of interest.

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