Case Report

Cysticercosis of the Breast Mimicking Breast Tumour: A Report of a Case and Review of Literature

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ABSTRACT

Human cysticercosis is a serious public health issue caused by Taenia Solium. Though it can affect any tissue or organs, its involvement in the breast is very rare presenting significant diagnostic challenges. This case emphasizes the need to consider cysticercosis as a differential diagnosis for breast lump in endemic and non-endemic areas (because of high human migration). In this report, we present the case of a 35-year-old female student who came with a history of painless swelling of the left breast and the diagnosis of cysticercosis was established by surgical pathology

Keywords: Breast Cysticercoses, Taenia Solium.

INTRODUCTION

Human cysticercosis a zoonotic disease of public health concern, especially in developing countries is caused by the larva form of *Taenia Solium* or pork tapeworm, a segmented flatworm. Humans are the definitive hosts and pigs are the intermediate hosts. It is an ancient disease even described in Egyptian mummies with the brain, muscle and intestine serving as the most common sites of infection. Cysticercosis is a major public health problem in underdeveloped countries and is endemic in several developing countries of Asia, Central Africa and South America and Eastern Europe [1, 2] Man occasionally serving as larval host of *T. Solium,* becomes infested either through drinking contaminated water or eating uncooked vegetable infected with eggs or by internal regurgitation of eggs into the stomach due to reverse peristalsis, when the intestine harbors a gravid worm (proglottids)[3]. The larvae are liberated in stomach, penetrate the intestinal mucosa and carried to many parts of body where they form cysticerci, 0.5-1cm cyst that contain the head of the young worn[3]. The human is dead end host, do not grow further or migrate. The common sites for cysticercosis are central nervous system, skeletal muscles, subcutaneous tissue, brain and eye [3,4]. Involvement of the breast is uncommon and only a few cases are reported[2,4]. These lumps in the breast are often seen mimicking breast tumors like cyst, fibroadenoma and carcinoma. We hereby present a case of a cysticercosis of the breast mimicking breast tumor.

CASE PRESENTATION

The patient was a 35-year-old female student who presented with 6 months history of painless left breast mass. The mass had remained the same since onset with no associated itching, bloody nipple discharges, ulceration or axillary swelling. There was not associated itching, no bloody nipple discharges, no associated ulceration or axillary

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swelling. She had no history of trauma to the breast. She is married with 3 children and was breastfeeding at the time of presentation. A known RVD patient on HAART for 15 years with a history of faltering treatment.

She has a history of recurrent frequent passage of watery loosed stools which were bloody and mucoid stained and occasional non-bilious and non-projectile vomitus before the index presentation. She was then seen and treated with antibiotics as a case of severe gastroenteritis but stool cultures yielded no bacterial pathogens. The complete blood count indicated normal Heamogram but leucopenia and thrombocytosis on cells differential counts.

Physical findings revealed a mildly wasted young woman, but in stable general conditions. The breast examination revealed a well-defined mass that measured 3cm by 4cm in the upper inner guardant of the left breast, a firm, smooth surface and a regular well-defined margin. There was a milky discharge on the nipple expression. There was no ipsilateral axillary lymphadenopathy.

The initial clinical diagnosis was that of galactocele was made. The ultrasound of the breast showed a hypoechoic mass lesion measuring 2.6cm by 1.3cm in its cranio-caudal and mediolateral dimensions respectively and contained nodules its substance. There was no blood flow on power Doppler transducer with a conclusion of complex left breast cyst (BIRADS III) mask.

She was optimized and had a wide local excision biopsy of the breast mass.

The surgical pathology of the tissue specimen showed a cystic cavity within which were seen several larval forms of parasitic worm reminiscent of cysticercus larval forms. These larva forms were composed of convoluted and extensive folding spiral canals lined by a double-layered irregularly shaped eosinophilic membrane with scolexes containing hooklets and suckers and confirming the diagnosis of cysticercosis (Fig. 1, 2a,2b). She was placed on Albendazole tablet 400mg daily for 2 weeks. She responded well to treatment and her follow-up showed no features of recurrent disease.

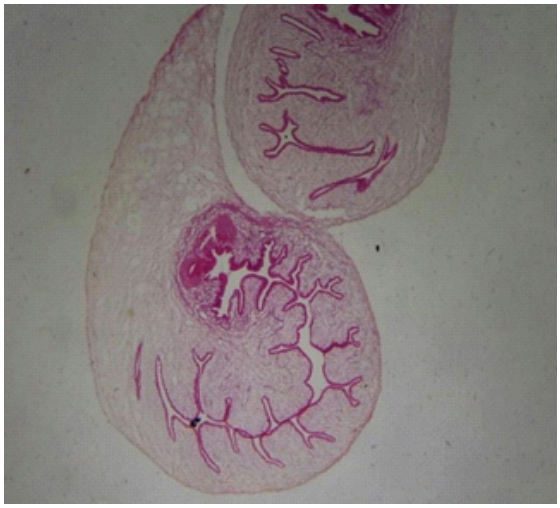

Fig.1:H&E stain shows larva forms of parasites with convoluted and extensive folding spiral canals lined by a double layered, irregularly shaped eosinophilic membrane with scolices(4x).

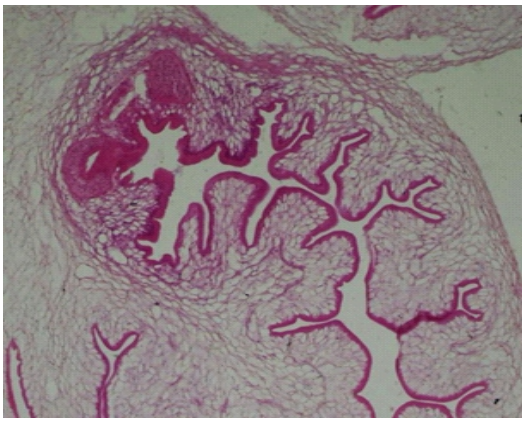

Fig.2a: H&E stain shows the scolex with visible hooklets and suckers with duct-like invaginations of the membrane (10x).

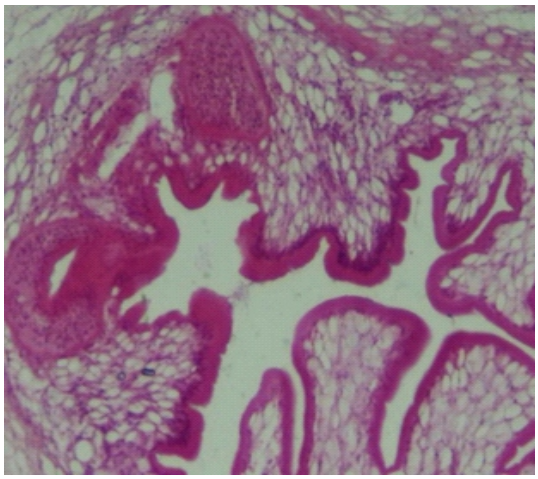

Fig. 2b: H&E stain shows double layered eosinophilic membrane of the spiral canal with scolex having visible suckers and hooklets (40x).

DISCUSSION

We have presented a case of isolated cysticercosis of the breast. Human cysticercosis is a larva manifestation of the cestode, *Taenia. Solium (T. Solium)* can be found in any organ, especially in skeletal muscles, subcutaneous tissue, brain and eyes. Its presentation in the breast is very rare[3]. In a Nepal study, out of 23,402 biopsies, 62 cases of cysticercosis were detected, with 8% cases been in the breast[6], and in India, in a study of on 8364 breast aspirates at an apex Indian medical institution only accounted for eight incidences of cysticercosis[7].

Making a diagnosis of breast cysticercosis is often difficult because its presentation is not specific. It is also difficult to differentiate from other neoplastic lesions of the breast on clinical grounds alone[8]. Due to its rarity, there is no detailed monographic or ultrasound appearance specific to it (3). Four types of sonographic appearances for soft tissue cysticercosis have been described[9]. The first appearance is a well-defined round cyst within a collection with a brightly echogenic protrusion. The second appearance is a loculated collection of fluid with internal echoes with a well-defined round cyst within, with an eccentric echogenic protrusion from the wall representing the scolex. The third appearance is an irregular cyst with minimal fluid collection on one side with an extruded scolex in it while the fourth appearance is defined as elliptical calcified cysticercus cysts. Mammography and ultrasound may show an irregular high-density mass without calcification and an echogenic ring[10].

Fine needle spiration Biopsy (FNAB) cytomorphological identification of larvae has widened the diagnostic utility of FNAB[8,11,12]. FNAB aspiration of clear fluid with eosinophils and macrophages should arouse suspicion about parasitic lessons is especially in areas of high endemicity[11,13,14]. Enzyme-Linked Immunoelectrotransfer Blot (ELITB) and Enzyme-Linked Immunosorbent Assay (ELIZA) are also used in detecting *T. Solium.* ELITB assay uses affinity-purified glycoprotein antigens to detect antibodies to *T. Solium* with a specificity of 100% and sensitivity of 50% to 60% and may give false negatives in cases of neurocysticercosis[2,15]. The western blot and ELISA are recommended by the Centre for Disease Control and Prevention and are usually positive for serum cysticercosis IgG antibodies.

The breast is a rare location for cysticercosis and the clinical diagnosis is difficult. A definitive diagnosis is made through histological examination of the surgically removed tissues, which typically show features of parasitic infection[16]. For the index cases, the ultrasound report was suggestive of a benign lesion of the breast and a wide local excision of the mass was done. Surgical pathology of the excised mass demonstrated the scolex at the cephalic extremity of the parasite with characteristic suckers and hooks, which were diagnostic**.**

CONCLUSION

Cysticercosis of the breast is rare but in areas of endemicity and due to widespread migration of people between countries, the clinicians should be aware of it. A high index of suspicion and awareness especially among radiologists and pathologists is key to making a positive diagnosis. When faced with a case, the clinician should also perform a computed tomography scan of the brain, an ophthalmic examination and send stool for microscopic examination to rule out the presence of cysticerci in other parts of the body.

DISCLOSURES

Human subject: Consent was waived by the patient in this study.

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