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CASE STUDY

CYSTICERCOSIS BREAST WITH RARE CYTOLOGICAL FINDING

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ABSTRACT

Cysticercosis is a systemic parasitic disease caused by the larval form of cestode Taenia solium and it presents with variable clinical manifestations. The patient most commonly presents with subcutaneous and muscle involvement in the form of nodular lesions. However involvement of breast, as in this case, is a rare presentation. A perimenopausal female presented with swelling in the upper outer quadrant of right breast since 2 months. The Ultrasonography (USG) examination was performed and it suggested a well defined hypoechoic lesion. The patient was advised fine needle aspiration cytology (FNAC) for further evaluation and the smears prepared from the clear fluid aspirated showed fragments of larva with folded walls and refractile hooklets. A cytomorphological diagnosis of a parasitic infection of breast caused by Taenia solium (Cysticercus Cellulosae) was made. This case report emphasizes the usefulness of FNAC in diagnosis of Cysticercosis in unusual sites like breast and presents a rare cytological finding of hooklets. It once again establishes the importance of FNAC in investigating breast swellings.

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INTRODUCTION

The parasitic infections of the breast are uncommon. The majority of the cases reported are those of filariasis (Yeuhan and Qun, 1981) and cysticercosis. (Kapila and Verma, 1996) Cysticercosis presents with wide spectrum of cytomorphological patterns ranging from viable cysts, cuticle fragments, scolex, and parenchyma to necrotic and calcified lesions. The diagnostic role of FNAC in cysticercosis was first emphasized by Kung *et al*. in 1989. (Neelaiah *et al*., 2010) We report a case of cysticercosis breast diagnosed on FNAC thus emphasizing that the cytological diagnosis can be quite clear cut in cases where the actual parasite structure is identified in the smears. (Adhikari *et al*., 2007)

Case summary

A 45 years perimenopausal ($G_4P_4A_0$) female presented with swelling in the right breast in the upper outer quadrant (UOQ) since 2 months. The swelling gradually increased in size since 1 month with mild pain. There was no history of fever, jaundice, weight loss or any other complaint. Her hematological and biochemical parameters were within normal limits. On examination of right breast a firm lump measuring 4x3cms was identified in the UOQ. The lump was not freely mobile. The overlying skin was free. A clinical diagnosis of large fibroadenoma and a differential of a possible malignant lesion were kept. The Ultrasonography (USG) examination was advised and it is suggested a 3.2x2.0cm size, well defined hypoechoic lesion with debris in UOQ extending outwards from the subareolar region. An enlarged reactive lymph node was noted in the right axilla. A differential diagnosis of a suppurative inflammatory lesion was added after clinicoradiological correlation. The patient was advised fine needle aspiration (FNAC) procedure for further evaluation. FNAC was performed using a 23 gauge disposable needle attached to a 10 ml plastic syringe. Few drops of clear fluid were aspirated under aseptic conditions. The smears were prepared from the clear fluid. They were air dried and fixed in methanol and were stained with May Grunwald Giemsa (MGG) stain. The smears showed fragments of larva with folded walls. The parenchymal reticulin of thin fibrils could be seen with ovoid nuclei. The prominent finding was the presence of moderate number of refractile hooklets (Fig. 1 & 2). Also seen were surrounding mild acute and chronic inflammatory reaction in a proteinaceous background. No granulomas were noted. A cytomorphological diagnosis of a parasitic infection of breast was kept. Aided by radiological findings and serological confirmation, a definitive diagnosis of cysticercus cellulosae was made.

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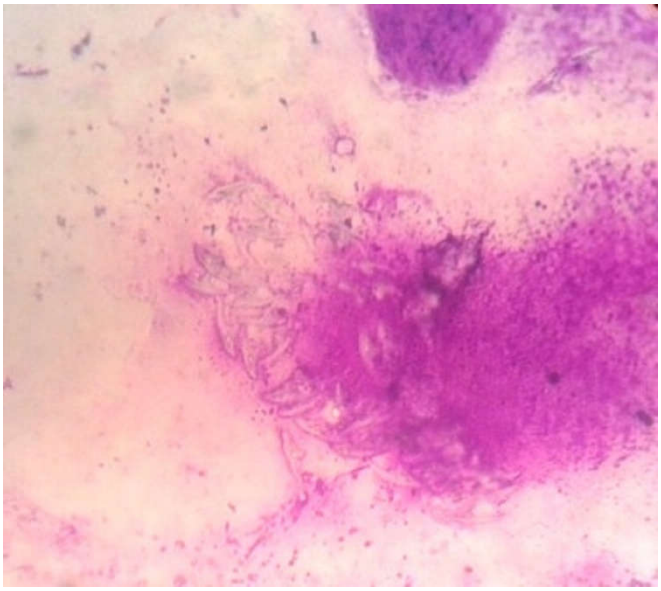

Figure 1. Photomicrograph showing larval fragments with oval nuclei along with multiple refractile hooklets

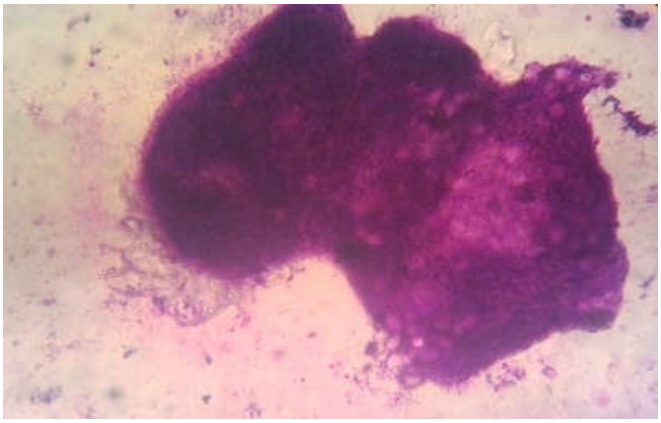

Figure 2. Photomicrograph showing wall of cysticercus cellulosae, refractile hooklets and surrounding inflammatory reaction

DISCUSSION

Tapeworm infection in man is caused by Taenia solium and T. saginata. Human cysticercosis is the infection caused by the larvae of pork tapeworm T. solium. The larval forms of T. saginata are not found in man. Cysticercosis is found throughout the world, although it has its greatest prevalence in Mexico, other areas of Latin America, India, China, Africa and Europe. (Neelam and Kiran, 1991) Although it can affect any organ or tissue of the body, the most common sites are the muscles and subcutaneous tissue as nodular lesions. In our presentation, the patient was clinically suggested with the differentials of a breast lump; along with a possibility of a suppurative inflammatory lesion. The cytomorphological identification of larvae in FNAC smears by different workers has widened the diagnostic utility of FNAC in skin nodules. (Vuong, 1989) Fine needle aspiration cytology (FNAC) in cysticercosis is low-cost outpatient procedure for preoperative diagnosis and may even obviate the need for open biopsy. [4] The cytological diagnosis is quite clear cut and undemanding in cases where actual parasite structure is identified in the smears as in our case study. Various diagnostic modalities employed to detect cysticercosis apart from FNAC include radiology, serology, and pathological examination. Serological tests are useful if positive but cannot rule out the disease with negative results. False positivity is expected with the past parasitic infection or cross-reactivity with other helminths. FNAC has emerged as a widely acceptable method for the diagnosis of cysticercosis. (Handa *et al*., 2008) In humans cysticercus have a predilection most commonly for CNS, eyes, skeletal muscles, and subcutaneous tissues. (Handa *et al*., 2008) Involvement of breast, as in this case, is a rare presentation.

Conflict of Interests

The authors declare no conflict of interests.

Acknowledgments

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