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Case Report

Cysticercosis breast: a cytological diagnosis

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ABSTRACT

Parasitic lesions of breast are rare, usually seen in endemic areas. Clinically such cases are frequently misdiagnosed as benign or sometimes malignant tumors of breast. Cysticercosis is caused by larval form of Taenia solium, acquired via fecal oral route. Radiology may be suggestive of cysticerocosis. In our case, diagnosis was confirmed with fine needle aspiration cytology.

Keywords: Cysticercosis, *Taenia solium*, Fine needle aspiration cytology

INTRODUCTION

Various parasitic infestations of breast have been reported till date. Filariasis is the commonest one followed by cysticercosis, hydatid cyst and schistosomiasis.[1] Cysticercosis of the breast is rare, usually seen in endemic areas. Being rare in incidence, often clinically missed and suspected as fibroadenoma or other benign lesions of breast or even carcinoma on rare occasions. We are presenting here a case of cysticercosis of breast in a young female which was clinically suspected as fibroadenoma.

CASE REPORT

Eighteen-year-old female presented with a lump in left breast. On local examination, swelling was well defined, measuring 5×5 cm, circumscribed, mobile and non-tender. Ultrasonography was done which showed well defined round, heterogenous, hypoechoic, round mass lesion with linear anechoic, retroareolar breast mass with linear anechoic clefts and few hyperechoic areas. USG features were suggestive of phyllodes tumor. Patient was sent to our department for fine needle aspiration cytology (FNAC). FNAC smears revealed pink proteinaceous material along with multiple bladder wall fragments comprising of outer pinkish layer. Inner to this layer were seen subcuticular or tegumental cells with small pyknotic-looking nuclei set in a loose, fibrillary parenchyma with varying vacuolation of cysticercus larva (Figure 1 and 2). Mild inflammatory infiltrate including macrophages were present. On the basis of cytological features, final diagnosis of cysticercosis, breast was given.

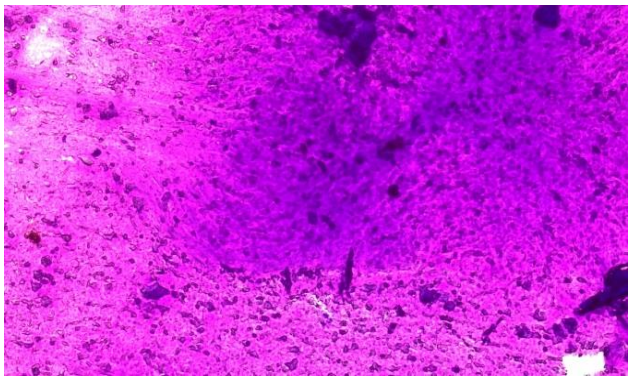

Figure 1: Smear showing bladder wall fragment with pyknotic nuclei (40X).

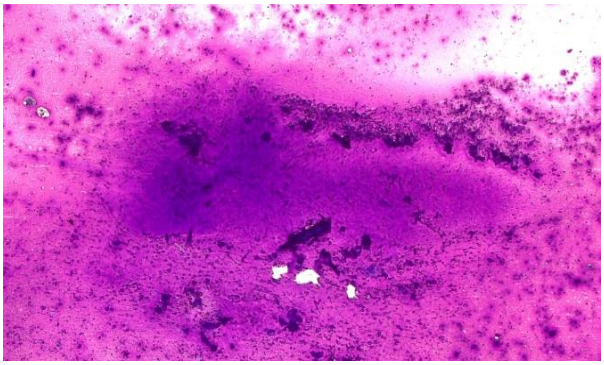

Figure 2: 10X view showing bladder wall fragment having relatively outer acellular zone and inner pyknotic nuclear zone.

DISCUSSION

Cysticercosis is considered as "tools-ready disease" according to WHO.[2] The earliest reference to tapeworm was found by ancient Egyptians that date back to almost 2000 BC. The description of measled pork was written by Aristotle (384-322 BC) who showed that the infection of pork with tapeworm was known to ancient Greeks at that time.[3] Recent examination of evolutionary histories of hosts and parasites and DNA evidence show that over 10,000 years ago, ancestors of modern humans in Africa, became exposed to tapeworm when they scavenged for food or preyed on antelopes and bovids, and later pass the infection to domestic animals such as pigs.[4]

Cysticercosis was described by Johannes Udalric Rumler in 1555; however, the connection between tapeworms and cysticercosis was not recognized at that time.[5] Around 1850, Kuchenmeister fed pig meat containing cysticerci of *T. solium* to humans awaiting execution in a prison, and after they had been executed, he recovered the developing and adult tapeworms in their intestines.[5,6] By the middle of the 19th century, it was established that cysticercosis was caused by the ingestion of the eggs of T.solium.

Cysticercosis is a ubiquitous parasitic infection caused by cytsticercus cellulosae, larval form of Taenia solium (pork tapeworm). In addition, the larval stage of other Taenia species (e.g., multiceps, serialis, brauni, taeniaeformis, crassiceps) can infect humans in various sites of localization including the brain, subcutaneous tissue, eye, or liver. Breast is an unusual site of presentation. Endemic areas include Asian countries including India and China, sub-Saharan Africa and central and South America.[7] Humans are the only definitive hosts of T. solium harbouring adult tapeworm in their intestines (taeniasis), whereas both man and pig can act as intermediate hosts and harbour the larvae in different internal organs (cysticercosis).[8] There are various diagnostic tools to diagnose cysticercosis including radiology, serology, stool sample examination and various immunological methods.

Fine needle aspiration cytology (FNAC), an outpatient procedure, is a least invasive definitive tool to diagnose cutaneous cysticercosis. FNA smears show fibrillary material with interspersed small nuclei (Figure 1 and 2). Various other parts of parasite like bladder wall fragments and hooklets may be identifiable. The background usually consists of a mixed inflammatory infiltrate. Granulomas may be seen. A parasitic lesion should be suspected in view of a clear fluid aspirate and the presence of eosinophils, neutrophils and giant cells in a typical pinkish granular background especially in presence of calcareous corpuscles.

CONCLUSION

Breast is a rare site of cysticercosis but it should be kept among differentials especially in endemic regions. FNAC is quick and minimally invasive procedure to diagnose such cases. But negative cytology smears cannot rule out the infection. The high index of suspicion and awareness are the key to diagnose a parasitic breast lesion.

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REFERENCES

1. Sinha A, Sharma R, Kandpal H, Seenu V, Sharma M. Imaging Appearance of Parasitic Infestations of the Breast: A Report of Two Cases and Review of the Literature. Acta Radiologica. 2009;49:5,506-9.
2. WHO, Global Plan to Combat Neglected Tropical Diseases 2008-2015. World Health Organization 2007.
3. http://www.ars.usda.gov/is/AR/archive/may01/worms0501.htm. Accessed 10 March 2018.
4. Hoberg EP, Alkire NL, de Queiroz A & Jones A. Out of Africa: origins of the Taenia tapeworms in humans. Proceedings of the Royal Society B. 2001;268:781-7.
5. Cox FEG. History of Human Parasitology. Clinical Microbiology Reviews. October 2002;15(4):595-612.
6. Küchenmeister F. The Cysticercus cellulosus transformed within the organism of man into Taenia solium. Lancet. 1861;i:39.
7. García HH, Gonzalez AE, Evans CA, Gilman RH. Taenia solium cysticercosis. Lancet. 2003;362(9383):547–56.
8. Agarwal A, Murty OP, Jain M. Fine needle aspiration cytology in the diagnosis of cysticercosis cases. Asian Pac J Trop Med. 2009;2:49-53.

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