

CASE REPORT

DISSEMINATED CYSTICERCOSIS

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INTRODUCTION: Cysticercosis is a systemic illness caused by dissemination of the larval form of the pork tapeworm, *Taenia solium*. Cysticerci may be found in almost any tissue. The most frequently reported locations are skin, skeletal muscle, heart, eye, and the central nervous system.^[1] FNAC and Biopsy of these lesions can show the larval structures and are diagnostic of cysticercosis. Identification of the parasitic cells give a important clue to the diagnosis of cysticercosis. We present this case of disseminated cysticercosis with ultrasonographic, cytology and histopathological correlation.

CASE REPORT: A 20yr old female, presented with a multiple painless soft tissue nodules all over the body, of one year duration associated with sudden increase in body weight, deformed shape of the body and easy fatiguability. The nodules measured one to two cms diameter, soft in consistency, non tender and was seen all over the body, neck, trunk, extremities, face and tongue. Extremities showed deformed shape with prominent muscular hypertrophy, Bilateral exophthalmos was seen. [Fig 1].

Ultrasound examination of the lesions showed multiple hypoechoic lesions in the muscle and subcutaneous planes involving almost all the skeletal muscles of the body including the retro-orbital muscles. Breast tissue, salivary glands and the brain were also involved [fig 2].The total number of cysticercus larvae in this patient counted more than a few hundreds.

FNAC smears of the nodule were stained with H & E and Giemsa stains. On microscopy smears revealed the presence of larval structures and eosinophils [fig 3&4].

Histopathology of the nodule showed presence of the parasite structure amidst plenty of inflammatory cells composed predominantly of lymphocytes and eosinophils amidst the skeletal muscle tissue suggesting parasitic infection [fig 5].

DISCUSSION: Humans harbour adult tapeworm in the intestine (taeniasis). Intermediate host (normally pigs) will ingest the excreted eggs with formation of larval cysts (cysticerci).^[1]

The cysticerci measure 1-2cms as seen in our case. In a study of 187 cases of cysticercosis by M.P.Abraham et al, 6 cases showed a maximum diameter of 4-11cms, the largest being 11cms.^[2]

Studies on FNAC of cysticercus nodules reveal that larval parts, scolices and hooklets can be identified in 75% of cases and form a definitive diagnosis on FNAC as seen in our case^{[3][4]}.Others show no larval parts but contain inflammatory reaction consisting of large number of eosinophils and palisading histiocytes.

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The present case showed the presence of larval parts on FNAC smears, appeared as fragments of vacuolated myxoid stromal material with multiple small nuclei of 2-3 microns diameter, and indistinct cell borders and eosinophils in the background.

Histopathologic appearances of cysticercus larva have been well described in literature and reveal a superficial tegument layer covered with microtriches, a cellular layer below that containing the cell nuclei and musculature, and a loose reticular layer characterized by canaliculi. When the parasites are viable, little surrounding inflammation is observed. Degenerating parasites, on the other hand, are invaded with an inflammatory infiltrate including lymphocytes, macrophages, plasma cells, neutrophils, and eosinophils.^[5]

Cysticerci are able to survive in the human tissues by disarming host defenses it secretes prostaglandins and other compounds (paramyosin, taeniastatin, sulfated polysaccharides) that inhibit or divert complement activation and cytokine production, resulting in only minimal host inflammation around the viable cysticercus.^[5] Hence we are able to identify parts of viable parasitic tissue on FNAC.

Subcutaneous nodules represent cysticerci in the skin. Skeletal muscle encystment usually is asymptomatic but may cause muscular pseudohypertrophy with a heavy parasite burden. The sudden increase in weight and deformed shape of the body seen in the present case is due to the muscular pseudohypertrophy secondary to cysticercosis.

Cardiac cysts may lead to conduction system abnormalities. Ocular cysts are mostly vitreous, but they may be found in subretinal locations.^[5] In the present case cysticercosis in the retroorbital muscles has caused exophthalmos.

Ultrasound using high frequency probe the cysticercus lesions are seen as well defined anechoic or hypoechoic lesions with or without calcification.^[6]

The other supportive tests include peripheral blood eosinophilia ^[6]. ELISA serological test and DotELISA for cysticercus antibodies have been reported to show 88% sensitivity and 74% specificity in diagnosing cysticercosis.^[7]

Stool examination for ova and parasites is a insensitive test as many samples over many days may be needed for establishing a diagnosis if tapeworm infestation.^[5]

FNAC is a simple diagnostic procedure for the conformation of cysticercosis. Ultrasound examination along with guided FNAC forms a valuable highly sensitive method to diagnose cysticercosis.

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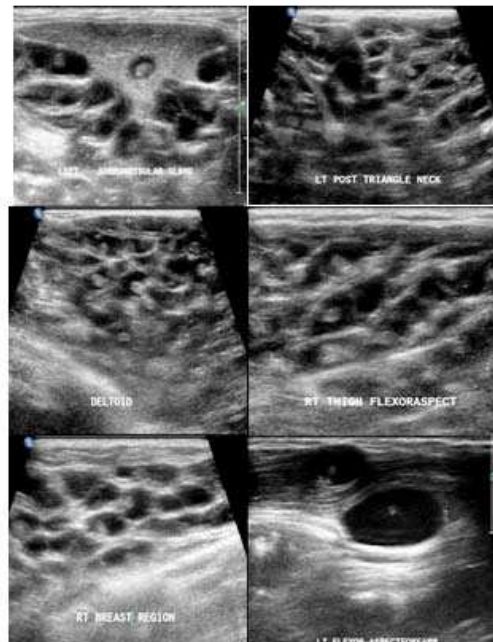
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Figure 1- Neck nodules, fore arm muscle hypertrophy, tongue nodules and exophthalmos due to disseminated cysticercosis.



DISSEMINATED CYSTICERCOSIS Figure 2- Ultrasound picture showing multiple cysticerci in the skeletal muscles ,salivary gland, breast region and porterior triangle of neck.



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Figure 3- FNAC smear shows the presence of larval structure with inflammatory cells in the back ground.H & E stain, 40x .



Figure 4- FNAC smear shows the presence of larval structure.Giemsa stain ,40x.

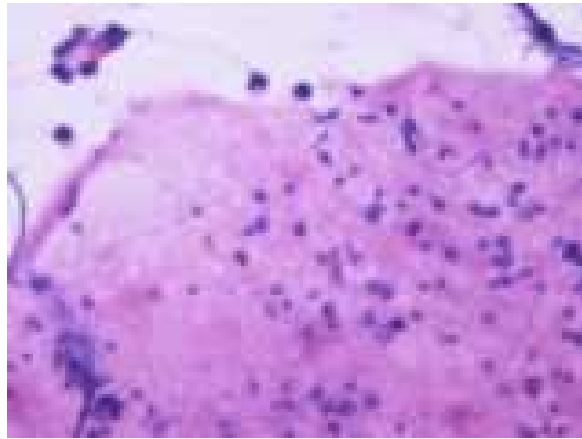


Figure 5- Histopathology section shows dense chronic inflammation with eosinophils in skeletal muscle tissue. H&E stain, 40x.

