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CASE REPORT

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Lumpy Bumpy Cyst that Still Persists: A Rare Case of Cysticercosis of Abdominal Wall

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Abstract

Cysticercosis of the anterior abdominal wall without parasitosis of central nervous system is extremely rare and mimics as a tumor which leads to diagnostic and therapeutic challenge. In such cases histopathological examination plays an important role in diagnosis. We present here a unique case of isolated cysticercosis in a 21-year-old female presenting with a painless lump in the infra umbilical region. This report contributes to the limited literature on cysticercosis of the anterior abdominal wall, aiming to increase awareness and knowledge about this in frequency clinical entity.

Keywords: Cysticercosis; Taenia solium; Anterior abdominal wall

Introduction

Parasitic infestations are common in the developing nations where there is lack of hygiene and and overcrowding is rampantly present. Cysticercosis is a type of zoonotic disease which is considered as a major health problem caused by pork tape worm also known as Taenia solium.[1] It was added to the list of neglected tropical diseases by the WHO in 2010. It is endemic in central and south America, south east Asia and Africa.[2] In humans, the organisms penetrate the intestinal wall and invade subcutaneous tissue and enters brain, eye, muscle, heart, liver, lung and peritoneum.[3]

Cysticercosis is commonly seen in areas, where pigs are allowed to roam freely, people consuming undercooked pork and also where there is lack of basic sanitary facilities.[3] In rural India, the sero-prevalence of cysticercosis was found to be 22.4% and was known to increase with age.[1] Human cysticercosis is the infestation caused by consuming the larvae of pork tapeworm Taenia solium through feco-oral route. In one study done in Indian population 33.3% vegetarians also developed cysticercosis infection.[1,4] The most probable cause for this could be ingestion of contaminated vegetables and water by fecal matter containing eggs of cysticercosis, when the vegetables have not been washed properly.[2] It commonly affects the brain but here we report a rare case of extraneural Cysticercosis affecting the anterior abdominal wall.

Case Description

A 21-year-old female came to the surgical outpatient department with a 6-month history of a swelling below the umbilicus. Initially swelling was small, painless mass and gradually progressed in size. One week prior to presentation, the patient developed pain and fever. She also experienced nausea and vomiting three times over a span of 3 days. She was a non-vegetarian and resided in a rural locality. On local examination revealed a mildly painful, freely mobile, firm mass arising from the subcutaneous plane, measuring 2x2cm, in the infraumbilical region. There were no other significant compliants & signs. Routine laboratory investigations were done & are in within normal limits. Ultrasonograpghy of abdomen wall was done & it showed a well-defined partially cystic lesion measuring 10 x 5 cms, with minimal solid component present within the cyst. An impression of Cysticercosis was given. Later the lesion excised and sent for histopathological examination.

On gross examination received a single soft tissue mass measuring 6x4x2cm. External surface was unremarkable. Cut surface: Identified a cyst measuring 1x1 cm, containing a clear fluid (Figure 1). Microscopy showed cystic cavity containing larval form composed of duct like invaginations having a double layered eosinophilic membrane lining (Figure 2) with giant cell reaction (Figure 3) characterized by inflammatory infiltrates in the form of lymphocytes, plasma cells, eosinophils, and giant cells of foreign body type (Figure 4). Hence final Impression of features suggestive of Cysticercosis was given. After with surgical excision she was started on anti-helminthic Albendazole and has responded well to the medication, on 3 months follow up.

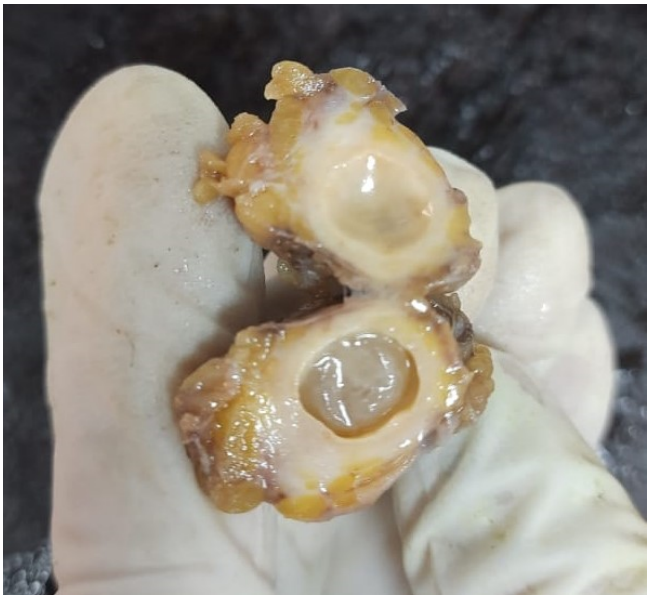

Fig 1. Gross image showing the cut section of cyst

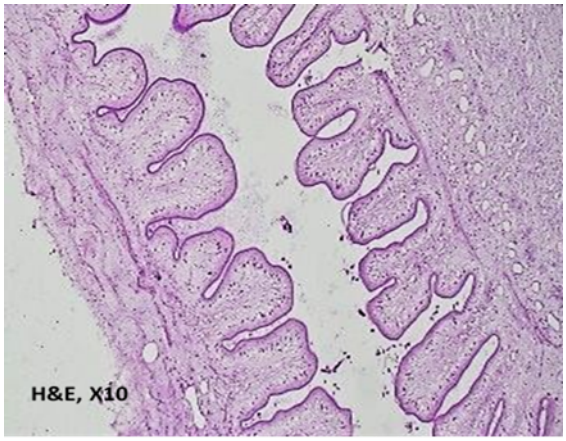

Fig 2. Microscopy H&E (100X) cystic cavity containing larval form of cystericus composed of ductlike invaginations

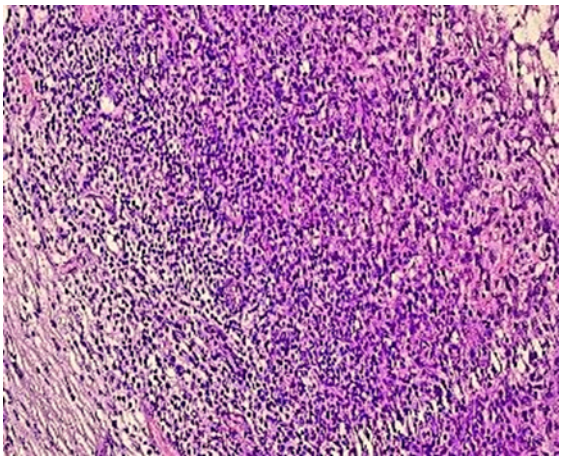

Fig 3. Microscopy H&E (100X) showing inflammatory response

Discussion

Cysticercosis is a parasitic infection which is caused by the larva form of Taenia solium. Whereas the infestation of the human intestine with an adult tapeworm is known as Taeniasis. The mode of transmission is feco-oral. Humans are the only definite host while both pigs & humans can act as intermediate hosts. The most common cause being the consumption of raw or under cooked beef or pork, water or vegetables contaminated by Taenia eggs.[5]

Taenia solium infestation is prevalent in major parts of the world, including Russia, China, India, Mexico, Philippines, Pakistan and Nepal. In 1912 British Army medical officers stationed in India reported widespread dissemination of cysticerci throughout the human body.[6] In 1926, Priest described the first case of Cysticerus cellulosae with extensive somatic dissemination in a British soldier who had

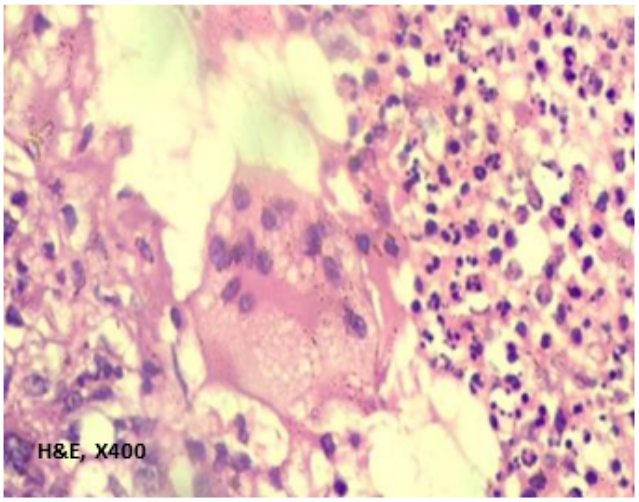

Fig 4. Microscopy H&E (400X) showing foreign body giant cells

swelling of his muscles, epileptic seizures, mental dullness and widespread subcutaneous nodules.[7] Isolated cysticercosis of anterior abdominal wall without involvement of central nervous system is very rare and may be a mimiker a tumor leading to diagnostic and therapeutic dilemma.[1]

The disease involves many parts of the body, with CNS being the most common organ of involvement. Other common sites include the sub-cutaneous tissues, muscles, and eyes.[1] However abdominal cysticercosis is less common& rare sites of occurrence as seen in our case.

The pathogenesis of human cysticercosis involves reverse peristalsis causing internal regurgitation of the eggs into the stomach when the intestine harbors a gravid worm. The oncospheres penetrate & enter the intestinal mucosa and later develop into cysticercoids in various parts of the body which includes brain, eyes, liver, striated muscles, heart, lungs after getting carried away.[1]

The severity of nonneuronal cysticercosis on human health is less. Subcutaneous cysticercosis presents as, small, painless, mobile nodules. In this case also patient presented with painless nodule.[1]

Macroscopically, the cysts are round or oval, uniform vesicles measuring a size of few millimeters to 1-2 centimeters. The viable cysts have a translucent membrane & fluid, through which scolices can be visualized. However, in degenerating cysts, the fluid becomes more opaque and may undergo calcification.[8] In our case we identified intact cyst with translucent membrane.

Microscopically it shows the cross section of the parasite can be seen with variable host immune responses in the form of dense inflammation & foreign body giant cell reaction.

Differential diagnosis may include umbilical hernia abdominal abscess infected ovarian cyst torsion ovary, diverticulitis urachal duct cyst.[1]

Diagnosis of cysticercosis involves a Laboratory tests usually show increase in the eosinophil count in the blood. But in our case eosinophils were within normal limit. Serological test has low sensitivity for solitary cyst. Surgical excision is the treatment of choice for abdominal cysticercosis after ruling out the involvement of CNS and eye as seen in our case. Medical therapy includes high dose anthelminthic therapy, i.e., albendazole 10-15 mg/kg/day for 8 days.[9]

Conclusion

The clinical diagnosis is always difficult in cysticercosis of the abdominal wall due to nonspecific manifestations. In this era of advanced molecular technologies equal attention should be given to, zoonotic diseases which can be preventable & that are prevalent in many parts of the world which are still a major health burden. However, cysticercosis should always be considered in differential diagnosis, especially in endemic regions. Histopathological evaluation remains gold standard for isolated cases.

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