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Case Report

Cysticercosis of umbilicus masquerading as lipoma: A rare case report

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Abstract

Cysticercosis in humans is the most common parasitic zoonotic diseases worldwide with an estimated prevalence greater than 50 million persons infected. It can be caused by *Taenia solium* which is also known as pork tapeworm, and *Cysticercosis cellulosae*. It has public health importance especially in pig raising communities of developing countries. In this case report, we present a 5-year old female patient who complaint of subcutaneous swelling above the umbilicus, which initially was of the pea size, in course of time the size of swelling increased to present size. Patient was examined and a clinical diagnosis of lipoma was made. Patient was managed conservatively but the patient didn't respond to treatment and the swelling was continuously increasing in size over 1 year. Swelling was then excised and sent for histopathological examination. Histopathological examination shows features of cysticercosis. Cysticercosis must be kept in the mind in patients presenting with subcutaneous swelling as is notorious for the chronicity.

Keywords: Lipoma, Cysticercosis, Tapeworm.

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1. Introduction

Cysticercosis is infection with the larval stage of the parasite. It is a very rare zoonotic disease worldwide. It can be caused by *Taenia solium* which is also known as pork tapeworm.[1] It is endemic in Mexico, Central and South America and parts of Africa, Asia and India.[2] The prevalence of diseases is less in developed countries. However it is also increasingly seen in more developed countries because of immigration from endemic areas. It is transmitted through faeco-oral contamination with *Taenia solium* eggs from tapeworm carriers. It is an infective process leading to the formation of a cystic swelling which is filled with clear fluid. The clinical features of cysticercosis depends on the location of the cyst and the overall cyst burden.[3] Cysticercosis is the most common helminthic infection of the nervous system. Neurocysticercosis is the neurological manifestation of cysticercosis. It is the most prevalent infection of the brain and one of the leading causes of adult-onset seizures worldwide.[4] Subcutaneous cysticercosis presents as small, mobile, painless swelling that is most commonly noticed in the arms and chest. After a few months or even years this subcutaneous swelling become swollen, inflamed and tender which usually disappears over the time. Subcutaneous cysticercosis is very common in Asia and Africa. Other sites of cysticercosis are eyes, muscle and heart. Ophthalmic cysticercosis which is much less common than neurocysticercosis, occurring in 1-3% of all infections. Muscular cysticercosis is casual finding which on histopathology appears as dot shaped calcification following the muscle bundles in the thigh or arms. Heart is another rare location of cysticercosis, occurring in 1-2% of all infection. Cardiac cysticercosis is usually asymptomatic.[5]

2. Case Report

A 5-year old female patient was admitted to the Department of the paediatric surgery, Jawaharlal Nehru medical college and hospital, AMU, Aligarh due to complaint of subcutaneous swelling just above the umbilicus for last 1 year. The swelling was gradually increasing in the size, mobile, and painless with no history of discharge. The swelling was associated with fever on-off and loose stools. No history of trauma was present. On clinical examination

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swelling was 1.6x0.5cm in size, just above the umbilicus. There was no tenderness. Swelling was mobile and firm in consistency. Patient underwent wide surgical excision of lesion and specimen was sent for histopathological examination, with the clinical provisional diagnosis of Lipoma.

On haematological investigations, complete blood count shows eosinophilia and absolute eosinophil count was also raised.

On gross examination, a single creamish white soft to firm globular tissue piece received, measuring 1.2x0.3x0.2 cm. On C/S of swelling clear fluid oozes out and a cystic cavity is identified with areas of haemorrhage. (**Figure 1**) Representative sections was taken from specimen and examined histopathologically.

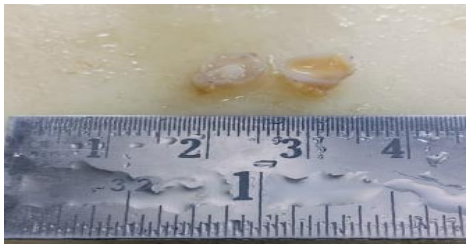

Figure 1: 1.2x0.3x0.2 cm, well circumscribed, globular, soft, creamish white. On cut section clear fluid oozes out and a cystic cavity is identified.

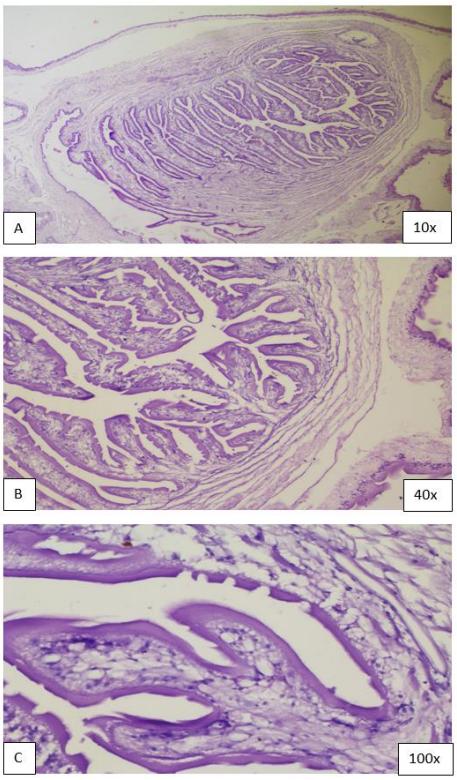

Figure 2: Shows a cystic cavity containing larvae composed of duct like invaginations lined by double layered eosinophilic membrane

On microscopic examination, H and E stained section shows a cystic cavity containing larvae composed of duct like invaginations lined by double layered eosinophilic membrane. A single invaginated scolex also seen. Cyst wall was fibro collagenous with dense mixed inflammatory infiltrate. (**Figure 2**)

On the basis of clinical history, haematological investigations, gross and microscopic examination, the final diagnosis of Cysticercosis was made.

3. Discussion

Human cysticercosis is the larval infestation of the cestode Taenia solium, also termed as Cysticercosis cellulosae. Campbell and Thomson in 1912 recorded the first case of cutaneous cysticercosis in India.[1] Feco–oral route is the most common mode of transmission of ova of pork tapeworm.[3] Cysticercosis can be found in any organ but it is especially common in central nervous system, subcutaneous tissue, skeletal muscle and eyes. It is extremely rare and asymptomatic in heart and cardiac tissues. When fully grown, cysticerci are milky white, opalescent cysts that are oval to long and have a diameter of roughly 1 cm. There is a single invaginated scolex and fluid inside the cyst. There are 22–32 tiny hooklets, four suckers, and a rostellum on the scolex. Microvilli cover the multilayered, 100–200 μm thick cyst wall. The outer, cuticular layer is often elevated in projections and has a smooth, hyalinized appearance.[5] There is a row of tegumental cells beneath the tegument. Mesenchymal cells and calcerous corpuscles are found in the loose, reticular inner layer, or parenchyma.[6] One distinctive characteristic of cestode tissue is the calcareous corpuscles. The parenchyma contains these round, noncellular masses, which are particularly noticeable in larval cestodes. Hematoxylin and eosin causes the corpuscles to become bluish purple. (HandE).[7] Although it presents infrequently, there have been relatively few cases of cysticercosis cutis recorded. Clinically, Cyticerci nodules—a nodule that develops in the skin following an infectionare exceedingly difficult to distinguish from benign mesenchymal tumors and lymphadenitis.[8] Large quantities of eosinophils, neutrophils, and macrophages in the patient's complete blood count report raise suspicions of a parasitic lesion. No inflammatory reaction may be triggered by viable cysticerci. However, as they deteriorate, inflammatory cells infiltrate and foreign body granulomas form together. Approximately 50% of patients with cysticercosis have subcutaneous nodules at presentation.[9] However, the association of neural and subcutaneous cysticercosis is not common. In this case patient developed subcutaneous nodules just above the umbilicus initially. The main differential lipoma which was the clinical provisional diagnosis. CBC, Serological, Radiological investigations, and biopsy plays very important role in the diagnosis of cysticercosis.[4] On histopathological examination, lipoma showing sheets of mature adipocytes separated by thin fibrous septa, while cysticecosis shows a

cystic cavity containing larvae composed of duct-like invaginations lined by double layered eosinophilic membrane.

Treatment mainly relies on Albendazole and praziquantel as both are highly effective.[10] Albendazole is the most preferred drug used in the treatment of cysticercosis.[11] It is very effective and very cheap then other drugs available for the treatment of cysticercosis. If there is any uneasiness for the patient, then individual cyst may be removed.[12] For systemic, neurological and multiple cysts currently accepted regimen is either albendazole given for 8 days or longer in the dose of 15 mg/kg daily along with simultaneous administration of steroids or praziquantel given for 15 days in the dose of 50 mg/kg daily.[13]

In this case also mainstay of treatment was excision followed by Albendazole. Patient is doing well on follow up.

The case is being reported because of its cutaneous involvement at an unusual site i.e. umbilicus.

4. Conclusion

The diagnosis of Cysticercosis must be considered when patients come with subcutaneous swelling and with a history of ingestion of infectious eggs and undercooked pork, which is associated with intestinal taeniasis. A high index of suspicion must be kept to diagnose the disease as it leads to significant morbidity including CNS involvement.

5. Source of Funding

None.

6. Conflict of Interest

None.

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