

Case Report

Ruptured cysticercosis may mimic deep vein thrombosis

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ABSTRACT

In clinical practice, we come across many a times various cystic and firm nodular swellings over various parts of the human body. We opt for fine needle aspiration cytology examination of the lesion to determine the aetiology. If it happens to be parasitic cyst it may rupture and produce systemic or local hypersensitivity reaction. Sometime such anaphylactic reaction may endanger the life of the patient. Here we present a case of ruptured cysticercosis mimicking a deep vein thrombosis. We discussed its presentation, diagnosis and management.

Keywords: Anaphylaxis, Cysticercosis, Deep vein thrombosis, Fine needle aspiration, Ultrasound

INTRODUCTION

Cysticercosis is endemic in Central and South America, Africa and Asia. Approximately 50 million people suffer from this disease, which is an underestimate, as there is no authentic population based studies. Many an infection is subclinical going unnoticed.¹ Prevalence can be very high where piggery is the main livelihood and inadequate hygiene.²

Cysticercosis is caused when eggs of *Taenia solium* passed in the stool of human carrier are ingested by fellow humans. The cyst on entering the intestines hatches out as embryos. They then invade the intestinal walls and spread through the blood stream. In three to eight weeks' time cysticerci develop in various tissues. Each cysticercus consists of membranous walls filled with fluid and an invaginated scolex.

When these cysticerci develop in central nervous system, it is named neurocysticercosis. Cysticerci can develop in various other organs like eyes, muscle, subcutaneous tissue and even heart.³ Muscle and subcutaneous

cysticercosis is more common in patients from Asia and Africa than in Latin America. Cysticercosis involvement of the brain is more frequent than in other locations. Survival or calcification of the cyst depend on the parasite and host immune balance. Human is the definite host and when these eggs are swallowed by pig they complete the life cycle. Cysticerci develop in pig muscles. When humans consume improperly cooked pork, *T. solium* develop in the intestine of the host and they become carriers. Ingestion of pork doesn't cause cysticercosis as pork contains larval stage, which is destined to develop into adult worms in humans, hence a carrier state.

CASE REPORT

A thirty-year-old male patient consulted me on 23-3-17 for swelling on the shin of right leg. The swelling had been there for the last three years, growing slowly and painless. Recently there was both increase in size and pain too. He had been working in Singapore and had come for vacation. He wanted to get rid of it before his return to work.

On clinical examination, there was a 30 and 20mm circumscribed, firm swelling in the muscles of the anterior compartment of right leg anteromedially. It was immobile and not tender. Blood pressure, heart rate and temperature were normal. Systemic examination revealed no abnormality. Routine hematological workup was performed, including complete blood picture, blood sugar, creatinine, clotting time, bleeding time, prothrombin time, liver function test and chest x-ray. They were all quite normal.

He was sent for fine needle aspiration cytology. The pathologist had done fine needle aspiration under direct vision and strict aseptic conditions. She could aspirate yellow colored fluid. She prepared alcohol and air-dried slides, stained them with Hematoxylin and Eosin and May Grunwald Giemsa stains. Smear showed low cellular yield comprising of squamous cells, sheets of cells with foamy vacuolated cytoplasm, bands of fibrous tissue in the background of myxoid and hyaline material. It was reported that picture is suggestive of sebaceous cyst.

He went home from the laboratory. Four hours after the procedure he developed intense itching of the right leg with rapid swelling and redness. (Figure 1). He came hurriedly to our clinic. His family members were very much annoyed that some wrong procedure was done on him.



Figure 1: Inflamed oedematous right lower limb.

The right lower limb was swollen extensively up to the thigh, erythematous and inflamed. Clinically it was suspected that the patient had either developed cellulitis or a deep vein thrombosis. He was sent for venous doppler study of right lower limb on an emergency basis.

The radiologist found that there was no venous thrombosis. But there was a diffuse subcutaneous edema of the right lower limb extending from thigh to foot. She also reported “well defined, mildly irregular hypo anechoic lesion within muscle in the anterior compartment of right leg (Antero-medial aspect) in the

middle third. The lesion shows no vascular uptake on color Doppler examination, shows tiny echogenic focus on the periphery-parasitic cyst probably cysticercosis.” (Figure 3).



Figure 2: Right lower limb oedema and inflammation reduced with treatment.

All at once the clinical picture is very clear. The patient had Cysticercosis, the fluid leaked during fine needle aspiration producing allergic reaction locally. He was given Fexofenadine 180milligrams a day and Deflazacort 60 milligrams a day for five days. Erythema and swelling subsided gradually (Figure 2).



Figure 3: Ultrasonography: cystic hypoechoic swelling with mural nodule suggestive of cysticercosis.

DISCUSSION

Our patient had a slow growing mass on the shin of right leg. Cysticerci can develop in any location, but the leg is a rare site. It was not cystic in consistency, hence cysticercosis was not considered as a possible diagnosis. However, before excision, pathological investigation of fine needle aspiration cytology was attempted. Finding of the scolex with its suckers and hooks, or the presence of parasitic membranes in the histological sections, or cystic

lesions showing the scolex on CT or MRI are the major criteria for diagnosing Neurocysticercosis. This also holds good for extraneuronal cysticercosis.⁴ However, pathological confirmation may not be possible all the time as the cyst may be calcified or could not be sampled out. Ultrasonography in expert hands is a very useful tool in making a diagnosis of cysticercosis in extraneuronal cysticercosis. Serological studies using antibody detection than antigen is more specific.⁵ Antigen detection methods are of use to evaluate the viability of parasite and treatment results.⁶ Negative serological test may not negate diagnosis of cysticercosis if the clinical and radiological picture is suggestive of it. People living in an endemic area and with a positive test may indicate a previous infection. Anaphylaxis has been reported in earlier literature due to the presence of cysticerci.⁷ A case of intraperitoneal rupture of cyst mimicking appendicular perforation has been reported.⁸ Our patient developed a local allergic reaction due to leakage of cyst fluid subcutaneously. Sometimes such reactions may precipitate hemodynamic instability and can be fatal.⁹ If we could have done fine needle aspiration under ultrasounds guidance this situation might have been avoided.

Patient with cysticercosis of subcutaneous tissue or muscle should undergo neuroimaging and eye examination to exclude neurocysticercosis, as both the conditions often coexist. Asymptomatic patients with cysticerci in subcutaneous and muscle planes do not require specific therapy, but those causing symptoms need to be excised.

CONCLUSION

Cyst of cysticercosis commonly involves central nervous system. Peripheral subcutaneous or intramuscular cyst may pose diagnostic difficulties. If a diagnostic fine needle aspiration is planned it should be done with the prior ultrasound examination. As the rupture of cyst may precipitate local and systemic anaphylactic reaction.

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