

# Imaging Findings of Disseminated Cysticercosis with Unusual Involvement of Spleen and Pancreas

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## ABSTRACT

In this study, we present a case of disseminated cysticercosis involving the brain, orbit, myocardium, muscle, subcutaneous tissues, pancreas, and spleen. Imaging studies are described with emphasis on pancreatic and splenic involvement which is a rare manifestation of a rather common disease and has been radiologically demonstrated only once previously. Although the involvement of the pancreas by parasites leading to pancreatitis has been described previously, in our case there was no clinical or biochemical evidence of pancreatitis due to infection by cysticerci.

**Key words:** Cysticercosis, Pancreas, Spleen

## INTRODUCTION

Cysticercosis is a systemic parasitic infestation caused by the pork tapeworm *Taenia solium*. The tapeworm responsible for causing cysticercosis is endemic to many parts of the developing world including India. Disseminated cysticercosis is a rare form of cysticercosis caused by dissemination of the larval form of the pork tapeworm. Fewer than 50 cases have been reported worldwide, the majority being from India.<sup>[1]</sup> In a large study of 450 cases of cysticercosis, only one case of disseminated disease was seen.<sup>[2]</sup> To the best of our knowledge, only one case of pancreatic and splenic involvement by cysticercosis has been published till date.<sup>[3]</sup>

## CASE REPORT

A 35-year-old man presented with multiple small swellings all over the body which had gradually increased in size and number over the last one year. He also had high-grade fever with chills, severe headache and blurring of vision for the last 3 days. A whole body magnetic resonance imaging (MRI) was done which

showed multiple well-defined oval lesions involving almost all the muscles of the axial and the appendicular skeleton [Figure 1]. The lesions appeared bright on T2-weighted images, dark on T1-weighted images, and few of them showed an enhancing mural nodule inside on postcontrast images characteristic of a cysticercus. The



**Figure 1:** Whole body T2W image showing multiple cysticerci involving almost all muscles of the axial and appendicular skeleton

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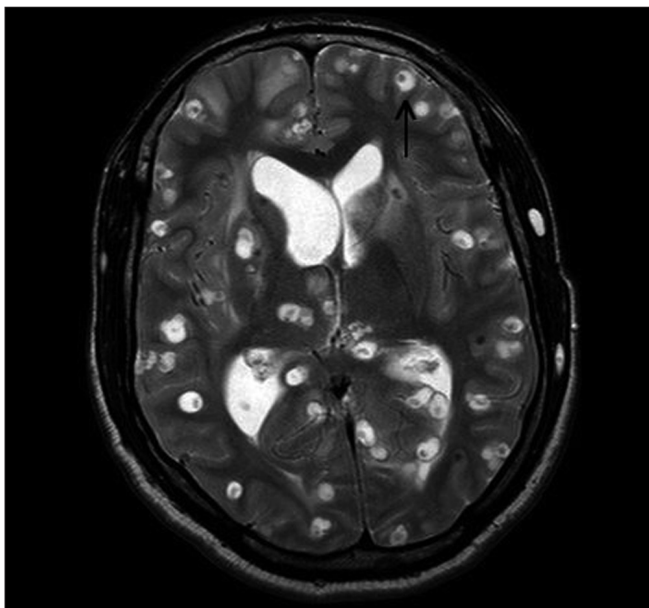
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entire brain parenchyma was studded with similar lesions giving a typical “starry sky” appearance of disseminated neurocysticercosis [Figure 2]. Cysticerci were also seen involving the orbits and the temporalis muscles bilaterally [Figure 3]. A CT abdomen showed similar lesions involving midregion of the spleen [Figure 4] and the body and head of the pancreas [Figures 5 and 6] sparing the uncinate process. A biopsy was taken from rectus femoris muscle which showed the larval form of the *T. solium* with mononuclear inflammatory changes [Figure 7]. The patient was treated with intravenous mannitol and dexamethasone to which he rapidly responded.

Disseminated cysticercosis is a rare form of cysticercosis caused by dissemination of the larval form of the pork tapeworm *T. solium*. Fewer than 50 cases have been reported worldwide, the majority being from India.<sup>[1]</sup> In a large study of 450 cases of cysticercosis, only one case of disseminated disease was seen.<sup>[2]</sup> To the best of our knowledge, only one case of pancreatic and splenic involvement by cysticercosis has been published till date.<sup>[3]</sup>

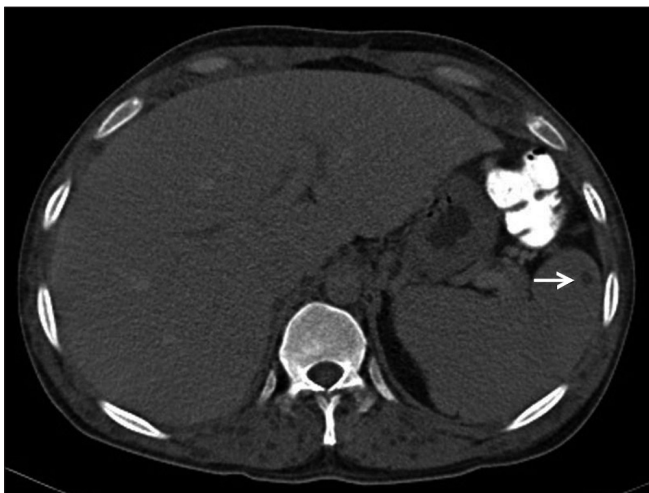
The disseminated form of cysticercosis is an uncommon manifestation of common disease and involvement of the pancreas and spleen is even rarer. CT and MR imaging are



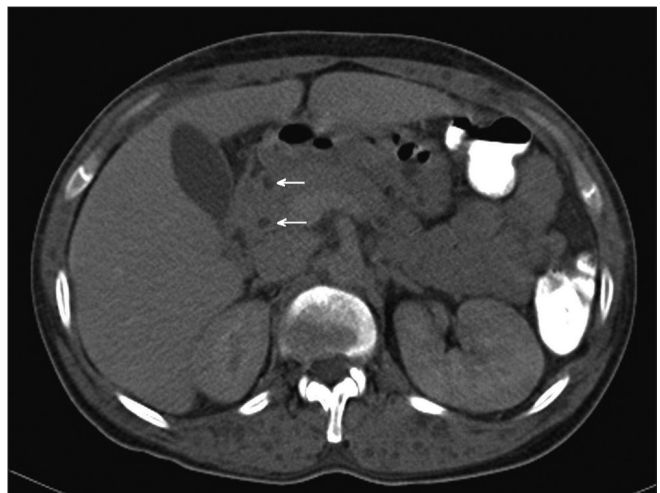
**Figure 2:** T2-weighted MRI brain image showing “starry sky” sign of disseminated neurocysticercosis. Arrow points toward the cysticercus



**Figure 3:** T2-weighted MRI image showing multiple cysticerci (arrow) involving both orbits with proptosis



**Figure 4:** CT image showing cysticercus (arrow) involving the midregion of the spleen. Multiple cysticerci are also seen in the paraspinal muscles



**Figure 5:** CT images showing cysticerci (arrows) in the head of pancreas



**Figure 6:** CT images showing cysticerci (arrow) in the tail of pancreas

the modalities of choice for diagnosis of the disseminated form because of their noninvasive nature and excellent soft tissue contrast.

### CONCLUSION

In conclusion, disseminated cysticercosis is a rare disease entity with involvement of the pancreas and the spleen being still rarer. CT and MRI remain the diagnostic modalities of choice because of their excellent soft tissue contrast.



**Figure 7:** Hematoxylin and eosin stained histopathology image showing larval form of cysticercus embedded within the muscle fiber

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