CASE REPORT

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HEPATIC CAPILLARIASIS IN A CHILD MIMICKING AS MALIGNANCY : A RARE CASE REPORT

Pathology

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ABSTRACT

Capillaria hepatica, causative agent of hepatic capillariasis , accidentally infects humans and is a parasite of mammalian liver, primarily rodents. The non-specific nature of clinical symptoms, often complicates the diagnosis, which can only be confirmed through liver biopsy. This paper is written with an objective to report a new case of pediatric hepatic capillariasis as a rare differential for peripheral eosinophilia, fever and hepatomegaly.

KEYWORDS

INTRODUCTION

Capillaria hepatica which accidentally infects humans [1] is a zoonotic parasite of mammalian liver, primarily rodent [2]. It was discovered by Bankroft in 1893 and is a nematode of the family Trichocephalidea, class Tricuroidea[3]. The diagnosis is difficult and can be confirmed only through autopsy or liver biopsy, which may reveal formation of granulomas along with necrosis. Most of the cases reported were in children, may be due to frequent soil-hand mouth contact [4]. This paper is written with an objective to report a new case of hepatic capillariasis in a pediatric patient in India confirmed by liver biopsy. The first case reported in India was in 1994, followed by four more isolated cases. To the best of our knowledge, this is the sixth case reported in India.

CASE REPORT

A 1-year-old male child presented with abdominal distention and moderate to high grade fever since 1 month. There was no history of jaundice, loose motions, vomiting or passing of worms in the stools. No history of cough, lymphadenopathy or Koch's contact was present. Child was vegetarian and belonged to lower socioeconomic strata. On physical examination, abdominal distension was noticed over the right hypochondrium. The liver enzymes were elevated , ALP 466U/l, ALT 100U/l, AST 166U/l, Bilirubin (direct 4.2mg/dl, total 9.1 mg/dl), LDH 491U/l, GGT 107. ESR was elevated 130 mm/hr, viral markers were negative.

Initial hematologic investigations showed hemoglobin -8.9 g%, total leukocyte count -22300/mm 3,differential leukocyte count 18% eosinophils, 37% neutrophils, 41% lymphocytes and 4% monocytes and platelet count 4.9 lakh/mm 3. Bone marrow examination showed increased eosinophils (~35%).Stool routine microscopy and culture was negative. With a clinical impression of hepatosplenomegaly and fever, a clinical diagnosis of a hematolymphoid malignancy was made and a liver biopsy was performed.Histopathological examination revealed largely preserved lobular architecture.Few discrete granulomas**[Figure1]** surrounded by abundant eosinophilic infiltrate were identified in the portal areas.The center of the granulomas showed many spherical to oval structures with radial striations and eosinophilic shell resembling Capillaria hepatica**[Figure 2, 3**]. Some of these structures also showed polar bodies in Massan trichome stain **[Figure 4]**. A final histopathological diagnosis of parasitic hepatitis secondary to Capillaria hepatica infection was rendered.

DISCUSSION

Capillaria hepatica discovered in 1893 by Bankroft is a nematode of family Trichocephalidea and class Trichuroidea, similar to Trichuris trichiura. The parasite primarily infects the rodents with rare cases affecting humans. Approximately 90% of the rats are infected with Capillaria species, thus explaining the worldwide occurrence of sporadic cases. Humans are the accidental host and very few cases (<50) have till date been reported (1,5,6).

The unembryonated eggs of Capillaria hepatica are found in the liver of the first host, which on being eaten by a predator or on decomposition after death, releases eggs into the soil, which therby reach the intestine of the second host. Embryonation occurs in soil and the parasite gains access to the intestine of the second host via feco-oral route. Here they travel through the walls of intestines and portal vein, reach the liver where they grow into adult forms(7). This is known as genuine infestation and produces symptoms like persistent fever, hepatomegaly and cosinophlia(8). After the ingestion of embryonated eggs, larvae hatch in the intestine, further penetrating the mucosa, entering the tributaries of the vena porta, and reaching the liver. From here the larvae reach into various distant organs also, where they die. However, they mature and mate in the liver, producing millions of eggs. The adult worms disintegrate 2-3 months after infection releasing a large number of eggs, thus inciting hepatic necrosis, inflammatory reaction, and fibrosis. Upon death of the host , these eggs are released into the environment.(8,9,10,11,12)

The differential diagnosis includes accidental tissue infestation by nematodes including Toxocara cati,Toxocara canis, Fasciola hepatica, and visceral larva migrans. Liver biopsy remains the cornerstone of diagnosis, but serological testing by Indirect immunofluorescence assay can be used as a useful diagnostic and screening test, however liver biopsy is confirmatory. Treatment includes thiobendazole, albendazole, or ivermectin. In our case, the patient was treated for a duration of one month with albendazole, which acts upon ova, larval and adult forms. Many a times the diagnosis may be missed or delayed, hence the disease requires prompt diagnosis and treatment.

CONCLUSION

Capillaria hepatica can present with nonspecific complaints like fever, hepatosplenomegaly and eosinophillia and hence a timely and accurate diagnosis is essential to prevent liver disease. An awareness of this zoonotic parasite is important and must be kept in the list of differential diagnosis in children with chronic fever and eosinophilia.

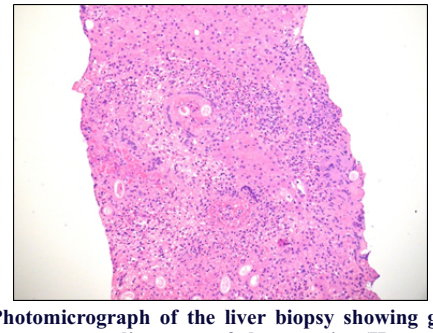

Fig. 1 Photomicrograph of the liver biopsy showing giant cell granulomas surrounding eggs of the parasite (Hematoxylin & eosin, × 200).

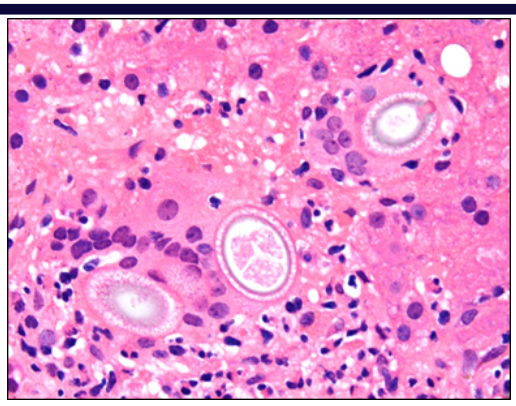

Fig.2 Photomicrograph of the liver biopsy showing eggs of Capillaria hepatica with adjacent giant cell reaction (Hematoxylin & eosin, × 1000.

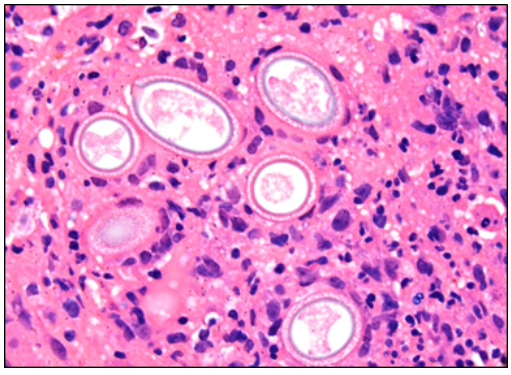

Fig 3: Photomicrograph showing Inflammatory cells and spherical eggs with shell displaying radial striations and polar bodies (Hematoxylin & eosin, × 1000).

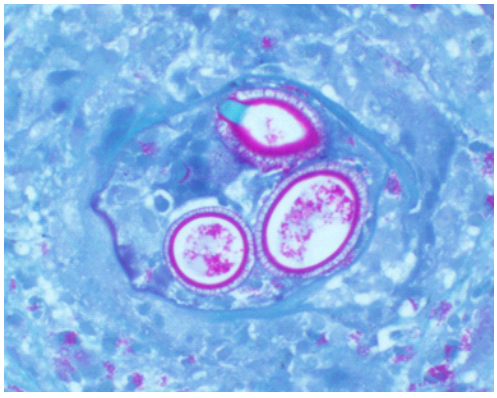

Fig 4: Photomicrograph showing radial striations and polar bodies (Massan Trichome Stain, × 1000)

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