Hymenolepis diminuta a rare zoonotic infection
report of a case

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Hymenolepis diminuta a rare zoonotic tapeworm infection is reported in a young child coming from pure vegetarian family.

Key words: Hymenolepis diminuta infection; vegetarian.

Common tapeworm infestations of man are known to be acquired through ingestion of infected meat. A young child from pure vegetarian family was detected to be passing segments of thin tapeworm. The size gave a clue for further study and diagnosis of *H. diminuta*. *H. diminuta* is a common parasite of rats and mice and man is rarely infected.

Case Report

A fourteen months old male child, from a vegetarian family, presented with complaints of failure to thrive and passing flat ribbon like structures in stool. There was history of white foul smelling watery stool off and on from the age of 10th month. That time some string like structures were noticed by mother which was thought of as undigested food. In three months time child started passing multiple flat thin ribbon like structures off and on. There was history of ingestion of small insects. Physical examination of the child revealed no abnormality except moderate anemia.

The stool examination revealed multiple pale yellow pieces of flat worm measuring 5-20 cms. long and 1.5-2.5 mm. in width (Fig. 1). The width was remarkably smaller than usual tapeworms. Examination with hand lens showed definite segments of tapeworm. Microscopic examination of worm and micrometry revealed broad proglottids varying from 1.5-2.5 mm in width and 0.5-0.75 mm in length (Fig 2). The wet preparation of feces also showed several rounded eggs measuring 65 µ in diameter with transparent outer membrane. Six hooklets were seen in the

![Fig. 1. H. diminuta showing thin segments.](image-url)
oncosphere and there were no polar filaments.

The findings confirmed the diagnosis of \textit{H. diminuta}. The patient was given mebendazole 100 mg. three times a day for four days. There was not much improvement, so after a week a course of niclosamide (500 mg) 1 tablet early morning and two hour later followed by Cremaffin $\frac{3}{4}$ teaspoon was given for five days. Child showed clinical improvement but repeat stool examination was positive for ova of \textit{H. diminuta}. A second course of niclosamide with same dose was given for five days. Repeated stool examination at interval of 1 months, for 3 months revealed no further ova or segments of worm. The general condition of the baby improved remarkably.

\section*{Discussion}

Initial impression of the parasites as described by the parents was that of taeniasis. But the baby came from pure vegetarian family and presented at an early age of 10 months were points for consideration. The diagnosis would have been overlooked if detailed examination of parasite and ova was not done. Histomorphology and micrometry helped the diagnosis of \textit{H. diminuta} versus other tapeworms. The adult worm of \textit{H. diminuta} measures up to 60 cms. in length and the ripe proglottides are three times as broad (3 mm) as they are long. Thus it is much thinner than common tapeworms. The ova are larger than those of taenia and are devoid of striations (cf. taenia) or polar filaments (cf. \textit{H. nana}).

\textit{H. diminuta} is a rare tapeworm of human. There are hardly any reports from Indian Journals. Cases have been reported\cite{1} from Rhodesia, Italy, India, New Guinea Highlands\cite{2} and Malaysia\cite{3} The morphology and life cycle of the worm is well described.\cite{4} \textit{H. diminuta} is primarily an intestinal parasite of rat and mouse. The ova in the excreta are ingested by intermediate hosts like flea, mosquito and cockroach. Cysticercoid phase develops in their tissues. Accidental ingestion by man of an infected arthropod results in development of adult worm in human intestine. Common intestinal tapeworms \textit{i.e. T. saginata} and \textit{T. solium} are known to occur only in non-vegetarian people but life cycle of \textit{H. diminuta} explains the infection in a pure vegetarian patient. It is interesting to note the history of ingestion of insects by the child. Most of human infections of \textit{H. diminuta} are reported in children and as many as 35 worms have been recovered from a patient\cite{1} but multiple infections are rare.

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