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 compla-
ints of failure to thrive and passing flat
ribbon like structures in stool. There was his-
tory 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 undiges-
ted food. In three months time child started
passing multiple flat thin ribbon like struc-
tures off and on. There was history of inges-
tion 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 mic-
rometry 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 measur-
ing 65µ in diameter with transparent outer
membrane. Six hooklets were seen in the

Fig. 1. H. diminuta showing thin segments.
Fig. 2. Histo-section of *H. diminuta* showing that proglottides. H. & E. x100.

... oncosphere and there were no polar filaments.

The findings confirmed the diagnosis of *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 ¾ teaspoon was given for five days. Child showed clinical improvement but repeat stool examination was positive for ova of *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.

**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 *H. diminuta* versus other tapeworms. The adult worm of *H. diminuta* measures upto 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 radial of striations (cf. taenia) or polar filaments (cf. *H. nana*).

*H. diminuta* is a rare tapeworm of human. There are hardly any reports from Indian Journals. Cases have been reported1 from Rhodesia, Italy, India, New Guinea Highlands2 and Malaysia3 The morphology and life cycle of the worm is well described.1 *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 i.e. *T. saginata* and *T. solium* are known to occur only in non-vegetarian people but life cycle of *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 *H. diminuta* are reported in children and as many as 35 worms have been recovered from a patient1 but multiple infections are rare.

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