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RESEARCH ARTICLE

DIPYLIDIUM CANINUM IN A 4 YEAR OLD GIRL IN A SLUM AREA IN KOLKATA - A CASE REPORT

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ABSTRACT

Dipylidium canium, also called cucumber tapeworm or the double pored dog tapeworm has been rarely implicated in causing human infection. It is a cyclophyllid cestode that causes human Dipylidiasis which is one of the rarely reported disease throughout the world (Wong, 1955). Although the disease is prevalent in all over the world, most reported cases are from North America (Parija, 2006). Till date only 120 cases have been reported globally (Parija, 2006). So we are keen to report this case who attended the Helminthology clinic in our Hospital and was subsequently diagnosed to be a case of Dipylidiasis. To the best of our knowledge this is the second case of human infection reported from West Bengal.

INTRODUCTION

Dipylidium canium, also called cucumber tapeworm or the double pored dog tapeworm has been rarely implicated in causing human infection. It is a cyclophyllid cestode that causes human Dipylidiasis which is one of the rarely reported disease throughout the world (**Wong, 1955**). Although the disease is prevalent in all over the world, most reported cases are from North America (**Parija, 2006**). Till date only 120 cases have been reported globally (**Parija, 2006**). So we are keen to report this case who attended the Helminthology clinic in our Hospital and was subsequently diagnosed to be a case of Dipylidiasis. To the best of our knowledge this is the second case of human infection reported from West Bengal. Felines like dogs, cats and foxes act as definite hosts; cat flea (Ctenocephalides felis), dog flea (Ctenocephalides canis), human flea (Pulex irritans) and dog lice (Trichodectes canis) act as intermediate hosts (**Muller, 2002**). Human (predominantly children) act as accidental host who acquire infection by ingestion of larval stage of infected louse or fleas while handling pets. We report a rare case of human Dypilidiasis in a young child from Kolkata.

The Case

A 4 years old girl residing in a slum area in Kolkata reported in the Helminthology OPD of the Calcutta School of Tropical Medicine with the following complaints-Failure to thrive. Pruritus ani. Passage of cucumber seeds like structure through the stools. Recurrent abdominal pain. A worm crawled out of the anal orifice on the day of attending OPD. There was no history of vomiting, fever or poor feeding & no such significant past history of any major illness.

Significant Personal History: She had close contact with a pet cat and stray dogs.

Clinical Examination

Moderate malnutrition. (Body weight-13Kg) Vitals: Within normal limits. (Pulse-90/min, BP-110/70mmHg, Respiratory rate: 20/minutes, Afebrile). Puffy face. Moderate Pallor. No icterus. All other systemic examinations: Unremarkable.

MATERIALS AND METHODS

The Worm

The worm was brought by the patient's father in our outpatient department. The worm was immediately transferred to the glass petridish and stained with Aceto-Alum Carmine stain. After staining the genital pores were noted on each side of the non gravid proglottides. In the gravid proglottides uterus with 16-20 radial branches were noted. Polygonal uterine segments typical of D.caninum were noted. Examining such morphology of the worm along with history of contact with dog and cat pointed us to the diagnosis of Dipylidium caninum. So, we ordered for stool samples of the patient.

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Stool Sample

A. Gross Appearnce

Foul smelling.
Semisolid.
Cucumber seed like ivory white colored structure noted.

B. Microscopy

Eggs in clusters enclosed in a membrane (Typical of D.caninum) (**Raul Romero Cabello, Aurora Candil Ruiz, 2011**) were found.

Thus gross and microscopic examination of stool sample reinforced our suspicion and confirmed the infection to be caused by Dipylidium caninum.

Treatment

The patient was treated with Praziquantel@10mg/kg body weight.

Follow Up

After 1 month treatment with Praziquantel we again examined the stool samples of the patients.No eggs of Dipylidium caninum were detected. The patient also did not give any history of emission of adult worm in the mean period.

Fig. 1. Adult worm in petridish

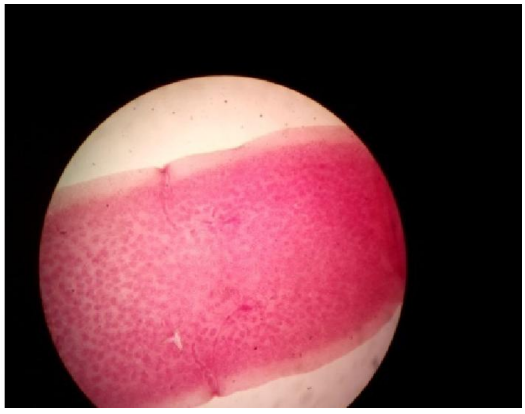

Fig. 2. Aceto Alum Carmine stain of worm showing genital pores on both sides of the proglottides

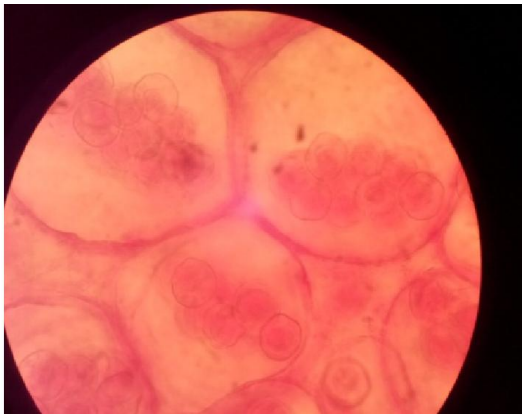

Fig. 3. Polygonal uterine segments in gravid segments of worm

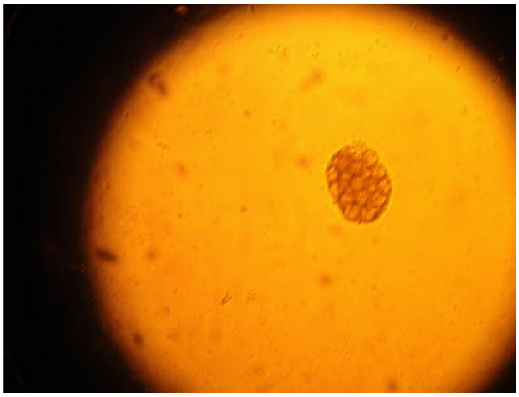

Fig. 4. Eggs of D.caninum

DISCUSSION

Dipylidium caninum, also called cucumber tapeworm or the double pored tapeworm is a cyclophyllid cestode that causes Dipylidiasis (**Neafie, Marty, 1993**). The definitive hosts are felines like dogs and cats. Humans are rarely infected that too when they are frequently exposed to dogs and cats. Intermediate hosts are larval fleas of Ctenocephalides canis, Ctenocephalides felis and Pulex irritans (**John, David, 2006**). The definitive hosts pass eggs in stool. These eggs are ingested by larval fleas which mature into infected adult fleas (**Muller, 2002**). The adult fleas reside in the furs and skin of feline animals and when they attempt to clean their body they bite the adult infected fleas which contain the cysticercoid larvae of Dipylidium caninum.

These larva sticks to its teeth and ultimately contaminates it's saliva (**John, David, 2006**). Humans are infected when they ingest the infected fleas containing the infective stages of the worm accidentally while fondling pets or by ingesting foods contaminated with saliva of dogs or cats. Larvae grow into the small intestine and within 2-3 weeks mature into adult worms with a body measuring 15-70cms in length and 2-3mm in thickness (**Devi. Sagarika, Deka Dilip Kumar, 2011**). The distally located gravid segments are passed intact or disintegrate releasing eggs or egg packets in the host feces and the life cycle is again repeated (**Ramanna, Sanjeev D Rao, 2011**).

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