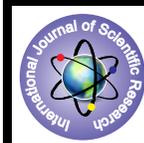


Symptomatology of helminthic infestations in children



Medical Science

KEYWORDS : intestinal helminthiasis, symptoms of helminthiasis, helminthiasis in children.

Dr Prakash S.S	Professor, Department of Pediatrics, J.J.M. Medical College, Davangere
Dr Kavita G.U.	Professor, Department of Pathology, S.S. Institute of Medical Sciences and Research Centre, Davangere. Karnataka
Dr Shashikala P.	Professor and Head, Department of Pathology, S.S. Institute of Medical Sciences and Research Centre, Davangere. Karnataka

ABSTRACT

Helminthic infections in children are widely prevalent and a major cause of disease burden in many developing countries especially in the tropical and subtropical regions. This study seeks to review the trends in symptomatology of children suffering from helminthiasis. 282 children whose stool sample showed presence of helminthic ova were taken for study. The symptomatology in these children was analysed. These children were found to present with one or more symptoms like history of passing worms in stools, diarrhea, pain abdomen, loss of appetite, pica etc. Helminthiasis though a very common condition, is often missed by the clinician as the symptomatology that the child presents with is varied. Hence a high degree of suspicion is essential for the early recognition of the symptoms of the disease, its treatment and control

Introduction:

Helminthic infection in children are widely prevalent and a major cause of disease burden in many developing countries especially in the tropical and subtropical regions.^{1,2}It has been a major public health problem since ages and was said to exist even during the stone, copper and iron ages. The ravages of helminthiasis involve not only the medical but also extend to social & economic spheres. Helminthic infection thrives & persists in communities in need of better housing, clean water, sanitation etc and children are worst affected. population.²Most helminths are potentially pathogenic to human beings, if these are present in sufficient number.¹They cause disease in children by various mechanisms like sucking blood, depriving the child of nutrients, intestinal obstruction, reaction to toxic products of parasites, destruction of parasites, destruction of tissue, hypersensitivity reactions etc thereby they have varied presentation.³ This study seeks to review the trends in symptomatology of children suffering from helminthiasis which included ascaris lumbricoides, ankylostoma duodenale, trichuris trichura, oxyuriasis, tenia, hymenolepis nana and Strongyloides stecoralis infestation.

Objective:

To study the symptomatology of helminthic infections in children.

Methods:

This is an observational study done on 1000 children whose stool sample showed presence of helminthic ova. A detailed history of presenting complaints including past history, family history and developmental history of these children were noted and a thorough clinical examination was done.

Results:

Of the 1000 children taken up for study, 282 (28.2%) children were found to have helminthic infestation. The presenting symptomatology was analyzed in these children and the following observations were made.

Table 1: Presenting symptoms:

Presenting symptoms	No of cases(n=282)
Passing worms in stools	135(47.87%)
Fever	100(34.46%)
Diarrhea	87(30.85%)
Pain abdomen	65(23.05%)
Cough & breathlessness	52(18.44%)
Vomiting	39(13.83%)

No history of passing worms	35(12.41%)
Failure to thrive	36(12.77%)
Vomiting of worms	25(8.87%)
Pica	25(8.87%)
Loss of appetite	23(8.16%)
Altered sensorium	16(5.67%)
Capricious appetite	15(5.32%)
Distension of abdomen	12(4.26%)
Pruritis	12(4.26%)
Night blindness	5(1.77%)

These children presented with one or more of the symptoms mentioned in the table no:1. Age of the children ranged from 5 months to 12 years. Of the 282 infested children, 176 were males and 106 were females.

135/282 (47.87%) gave history of passing worms in stool. 65/282(23.04%) children presented with pain abdomen, 87/282(30.85%) presented with diarrhoea and 100/282(34.46%) presented with fever.

Table 2: Previous history

Previous history	No of cases (n=282)
Passing of worms	105
Pain abdomen	60
Recurrent diarrhea	59

Of the 135 children who presented with history of passing worms, 105 children also had previous history of passing worms.

Discussion:

Clinical manifestations due to helminthiasis may vary in different patients. The child may nurture many worms and may still be asymptomatic. It is of interest to note that in this study, 35 (12.41%,n=282) children had no history of passing worms.

Among the children who had history of passing worms in stool, 105 (37.23%) children also had a past history of passing worms. Many a time, mother fails to notice the worms in the stools. These worms are passed down in the stools when the environment in the intestine become precarious for their survival, especially whenever the child has fever, gastroenteritis and more so when the antihelminthic drug is given.^{4,5}

87 children (30.85%,n=282) of the infested group presented

with diarrhea and 59 (20.92%) children had recurrent diarrhea previously. Grover V L et al, in their study of chronic diarrhea in children, have found that 10.2% of diarrheas in children were due to helminthiasis.⁶ However there is no relationship between acute diarrhea and helminthiasis. Helminths however by virtue of the presence of antidiigestive enzymes like ascarase in them may interfere with the digestion of food and cause recurrent diarrhea.⁷

Pain abdomen was recorded in 65 (23.04%) children of the infested group and 60 children (21.27%) had recurrent pain abdomen previously. Indira bai et al reported that, of the 40 children with recurrent pain abdomen 17(40.48%) had helminths and the pain abdomen was relieved after deworming.⁸ Gadeyar et al has attributed pain abdomen to helminthiasis in 24% cases.⁹

The pain abdomen may be colicky or dull aching. In this study, pain abdomen was of colicky nature in 15 children. In toddlers, it is difficult to elicit the nature and site of pain abdomen. The physical presence of worms or the entangled mass of worms may evoke the intestines to go into a spasm leading to obstruction.⁶ Oxyuriasis is known to cause recurrent appendicitis.

100 children (35.46%) of the infested group had fever; among them, 37 were diagnosed as enteric fever and 52 had respiratory infection. Importance of fever in this context is that the fever alters the intestinal environment, thereby provoking the worms to expel themselves and children with enteric fever may develop more complications due to round worm. Low grade fever may occur in helminthiasis, due to liberation of toxins by them and fever may occur when the larvae are passing through the liver and lungs.⁶ However, the relationship between the fever and helminthiasis is inexplicable.

Failure to thrive and loss of appetite were present in 36(12.76%) and 23 (8.15%) children respectively. Whether helminthiasis itself is the cause of malnutrition is questioned by many. There are as many opinions as the types of helminths. Some opine that helminthiasis is the result of malnutrition and the presence of helminths in the intestines perpetuates malnutrition by setting up a vicious cycle. Helminths may compete with the host for the food substance reaching the intestine. Food substances like glucose may diffuse into the cuticle of the worms. The presence of worms may stimulate the peristalsis and thereby empty the food rapidly.

16 children of the 282 infested cases presented with altered sensorium, many of them had vomited or passed worms before

or after their arrival to the hospital. Such patients are grouped as having ascariid encephalopathy.¹⁰ Whether the altered cerebral reactions are due to toxins liberated by the worms or due to some other mechanisms, is still not clear. No decisive changes were observed in the CSF.

In the present study 25 of the 282 infested children had a history of pica. Many mothers attribute the pica as a diagnostic sign of helminthiasis and resort to the antihelminthics. Vyas et al reported pica in all children who had trichuriasis.¹¹ Pica may be a response to an unconscious physiological attempt to replenish deficiency of minerals or indicate the emotional instability.^{11,12}

Pruritis ani was noted in 12 (85.71%) of the cases of oxyuriasis. R Narmada et al noted pruritis in 66% of children with oxyuriasis. The presence of ova and consequent irritation in the perianal region is the cause of pruritis ani.¹³ Because of this, child may have enuresis and spends restless nights, sometimes the ova can be demonstrated in the finger nails.¹⁴

The children are subject to repeated attacks of fresh infestations, as they are exposed to same environment after deworming. This is substantiated by the present study among 192 cases of ascariasis. 105 children had previous history of passing worms.

Cough and breathlessness were present in 52 children of the 282 infested group. During the larval stage, the larvae which are present in the alveoli give rise to cough, breathlessness and migratory pneumonitis, which is known as loeffler's syndrome.¹⁵ However the cough and breathlessness in this study could not be attributed to helminthiasis, as no investigations were done in this direction.

Conclusion:

Helminthiasis though a very common condition, is often missed by the clinician as the symptomatology that the child presents with is varied. It can cause significant morbidity by compromising nutritional status thereby affecting the growth and overall development of the child. Hence a high degree of suspicion is essential for the early recognition of the symptoms of the disease, its treatment and control. In a country like ours where there is prevalence of bare foot walking and unhygienic conditions in most of the rural and some urban population, periodic deworming of the affected children and all the members of the family is essential for effective control of helminthiasis.

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