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Case Report

UNUSUAL PRESENTATIONS OF *GIARDIA LAMBLIA*; A REPORT OF FOUR CASES

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ABSTRACT

Objective: To create awareness that giardiasis can mimic acute clinical symptomatologies and result in missed diagnosis

Method: The case files of four acute and life threatening presentations that were misdiagnosed initially but later found to be *Giardia lamblia* infestations from laboratory stool results and responded to treatment for giardiasis were reviewed.

Results: One of the cases was diagnosed as food poisoning, a second as a case of hypovolemic shock and the third also as a hypovolemic shock, though also considered to have sepsis and the last, a case of acute exacerbation of asthmatic attack. Three of the cases were less than 24 months and vomiting was seen in 3 of them.

Conclusion: Giardiasis in childhood can be acute and life threatening and should be considered in such ill children, especially if they also have digestive system symptomatology.

KeyWords: Giardiasis, Children, acute clinical symptomatologies *(Accepted 26 February 2009)*

INTRODUCTION

Giardia lamblia is the most common intestinal protozoa infestation. It is worldwide, being endemic in developing countries with epidemics in developed countries.[1,2] It is transmitted faeco-orally, contaminated water being the commonest route, though person to person route has been reported.[2,3] Usually, the cyst is ingested and excystation and subsequent colonization of the small gut thereafter takes place.[4] Some hypothesis to explain the manifestations of its effect after colonization of the small gut include mechanical obstruction, invasion of the mucosa and submucosa and mechanical irritation.[5,6] Though often asymptomatic, the symptomatology, when present, can be acute, lasting for a few days to 2-3 weeks and mimics dysentery or viral gastroenteritis, but differentiated by the foul smelling stool and abdominal distension seen in giardiasis; subacute, lasting for months and can mimic a malignant process; or chronic, lasting for years.[7] It is, therefore, an infection with great potential to mimic other health conditions.

The regular features include diarrhoea, malabsorption and weight loss,[8] but diarrhoea is the most common presentation. The diarrhoea may lead to very acute presentations, which maybe severe.[9] Immunity, natural and acquired, play some roles in protection against this infection.[10,11] Breast milk is known to be cytotoxic to the trophozoites while secretory IgA in the gut also affords some protection.[12] These are in addition to the humoral and cellular immunity that result from exposure to it. Lack of immunity to it often leads to severe forms of its attack.[13] The diagnosis is often by stool microscopy, showing the trophozoites or cysts in the stool, though other methods include duodenal intubation and aspiration,[14] Enterotest[15] and therapeutic trial.[5]

Treatment is by the use of metronidazole.[16] Other drugs include quinacrine hydrochloride and furazolidine.[16]

This is a report of unusual symptomatology of *Giardia lamblia* infestation seen in 4 children leading to initial missed diagnoses, but with laboratory diagnosis and on treatment with metronidazole, they had good response.

CASE 1

C.O., a 16 month old male, presented with sudden and frequent vomiting that had lasted for 4 hours. There was no fever on presentation. His last ill health was at 7 months of age when he had fever and was treated for malaria. He was predominantly breastfed up until 5 months of age when cereals were added. Adult diet was introduced at 9 months of age. He lived with the parents in a high density part of the town and the source of their drinking water was borehole and bottled water while the toilet facility was water cistern.

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He looked toxic, was not pale and did not have signs of dehydration. His temperature was 36.5^{OC}, pulse 126 beats/minute, respiratory rate 38 cycles/min and weight 11.8kg. The systems were normal. A clinical diagnosis of Food poisoning was made and child was admitted and placed on intravenous infusions. While he continued to vomit intermittently, he developed fever 12 hrs into the admission and diarrhoea 36 hrs later. Sepsis and malaria were then considered and he was started on augumentin and coartem. The diarrhoea lasted for one day. Stool microscopy then did not show any pathogens. Fever resolved after 3 days but the child still appeared ill and vomiting continued into the fifth day of admission when he passed another loose stool. Stool microscopy at this point showed presence of trophozoites of *Giardia lamblia*. He was started on oral metronidazole, 100mgs 8hrly for 5 days. Twelve hours after commencing the metronidazole he became much better with vomiting resolving. Child became fit to be discharged 24 hrs after introducing metronidazole. The course of the metronidazole was completed on outpatient basis.

CASE 2

S.O., a 20 month old male, presented with fever and watery faeces that started 4 days before presentation. The fever lasted for about 12 hrs while the diarrhoea was on for 4 days. He also had cough and catarrh that had lasted for 3 days and associated with the bouts of cough was vomiting. He was a known asthmatic. Seven months earlier, he had watery foul smelling faeces with fever but nothing was found on stool microscopy then and he was treated for malaria and he recovered. He was exclusively breastfed for 3 months and thereafter had formula milk but reacted with a diarrhoea. The father has chronic allergic rhinitis.

On examination, he was in acute respiratory distress with a respiratory rate of 66 cycles/min, was not pale, had a temperature of 37°C and a pulse of 126 beats/min. His weight was 13kg. The chest was rhonchitic during expiration, on auscultation.

A diagnosis of acute severe asthma was made and the child placed on intravenous infusions, intravenous aminophylline and hydrocortisone. Steaming was also used. He did not make appreciable improvement and on the 3rd day, he passed soft faeces that on microscopy showed the trophozoites of *Giardia lamblia*.

Metronidazole was added to the treatment and 14 hours later, the respiratory distress resolved and they were discharged.

CASE 3

E.O., an 11 years old male, presented as an emergency with a few hours history of sudden onset of vomiting about 5 times and passage of watery stool about 4 times. There was associated abdominal discomfort but no fever. He had been admitted repeatedly in the past due to asthmatic crises. He was fed on formula milk from birth. He reacts to salad, lettuce and soya beans. His mother is said to react to noxious inhalants.

Examination revealed a restless perspiring boy, with sunken eyes and cold clammy extremities. The pulse was thready. He however had a neck stiffness, though no brudzinski. The other systems were normal. A diagnosis of shock secondary to gastroenteritis with a differential diagnosis of food poisoning was made. Normal saline was used in managing the shock and subsequently 5% dextrose in 1/5th normal saline was used until he made urine, when the infusion was changed to 5% dextrose in half strength Darrows solution. An urgent blood test done showed an Hb of 9.1gm/dl and a white blood corpuscle (wbc) count of 11,500 /ml, with the differentials of lymphocytes 10%, neutrophils 87% and band forms 3%. In view of the differential count, a diagnosis of sepsis was considered and parenteral unasyn was started. However, he moved bowel 36 hours after admission and the stool microscopy revealed flagellates of *Giardia lamblia*.

Metronidazole was introduced and 14 hours later he was well enough to be discharged.

CASE 4

E. C. was an 8 month old male who presented with diarrhoea for 2 days which got worse on the night before they presented, when he passed faeces about 10 times before the morning. There was also fever on the day of presentation. There was no vomiting. He was exclusively breastfed for 6 months before cereals were introduced.

On examination he was found to be severely dehydrated and pale. The extremities were cold and the pulse was of low volume. The respiratory rate was 94cycles/min, temperature 39.7^{OC} and arterial oxygen saturation (SpO_2), 73%. The heart rate was 200beats/min and his liver was palpable, 3 cm below the right costal margin. A diagnosis of severe dehydration, possibly in shock, secondary to gastroenteritis, with an additional diagnosis of malaria, was made. Based on previous experience, giardiasis was also considered. He was quickly rehydrated with normal saline and thereafter 5% dextrose in 1/5th saline. He was given antimalarials (coartem) with antipyretic (paracetamol) and after 24 hours, he appeared clinically better but the symptoms persisted. Twenty four hours after admission, he passed stool that on microscopy confirmed the presence of *Giardia lamblia* flagellates. Metronidazole was added to the treatment. His mother noticed a reduction in stool frequency about 8 hours after starting metronidazole within the next 24 hrs stooling abated.

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DISCUSSION

These four cases highlight the varied possibilities of acute presentations of giardiasis in children. Two of these cases were in shock at presentation, one having a very short interval before presentation while the other also had a sudden worsening of the condition that was short-lived before presentation. E.O., the third case, was however more of vomiting and was initially diagnosed as a case of food poisoning. These acute and severe presentations appear to be a paediatric problem and may be due to lack of immunity in these children. Three of the 4 cases were less than 24 months old, an age group which will suggest doubtful immunity. The sustained asthmatic crisis in the child tends to show that, though systemic invasion is not recognised in this condition, there seems to be immunologic response to the presence of the organism in the gut. This is possible, since it is known that the body develops immunity to *Giardia lamblia*. Though other diagnoses were considered and even managed until stool results showed presence of *Giardia lamblia* trophozoites, the rapid resolution of symptoms within less than 24hrs in 3 out of the 4 cases on administration of metronidazole to the children would tend to suggest that much of the observed symptomatology was due to giardiasis. This is similar to other reports.[5,11] The one case which seemed to have had a prolonged symptomatology on admission (E.C.), had the diarrhoea stop within a short time of introducing metronidazole, though the fever persisted. The fever may have been due to other possibilities, since fever is not a clearly established feature of giardiasis. Diarrhoea, a common feature of giardiasis,[8] was present in all 4 cases, either before or after admission while 3 of them had vomiting as additional features. The significance of all these cases being males is not clear.

These cases highlight the diagnostic problems that giardiasis can pose in cases of gastroenteritis and, even, hypersensitive respiratory illnesses in children in areas where it is endemic. A high index of suspicion is necessary in ill children with gastroenteritis not responding promptly to therapy, to consider a diagnosis of *Giardia lamblia,* since it easily responds to treatment.

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