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Strongyloidiasis In An Immunocompetant Male: A Case Study

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ABSTRACT:

Strongyloides stercoralis is a soil transmitted helminth, which infects at least 100 million humans worldwide each year, but its prevalence is underestimated. It is endemic in tropical and subtropical countries. Effective treatment is dependent on early detection of larvae in stool sample. We are reporting a case of 50 years old, immunocompetent male with anaemia, malaise, upper abdominal pain and weight loss. His stool sample was semi solid but extremely foul smelling with greenish texture. He reported to have diarrhoea since past 3 months discontinuously but reported no vomiting. Stool examination by wet mount revealed numerous Strongyloides stercoralis larvae. The patient was successfully treated with albendazole without any side effects. Therefore early diagnosis and treatment is required for effective remedy.

Keywords: Strongyloides stercoralis, immunocompetent, anaemia.

INTRODUCTION

Strongyloides stercoralis is an intestinal nematode that infects about 100 million people worldwide and is common cause of abdominal pain and diarrhea [1]. The true prevalence of *S. stercoralis* is likely underestimated because infection is often subclinical. Only few cases have been reported from India, where its prevalence appears to be low [2]. Warm moist temperatures, lower socioeconomic status and poor sanitation leading to faecal contamination of soil have contributed to the increased prevalence of strongyloidiasis in the tropics [3]. In immunocompetent patients, S.stercoralis infection usually results in chronic intestinal infection, which can remain undetected for decades [4].

A definitive diagnosis of strongyloidiasis is usually made by the detection of larvae in stools [5]. However, S.stercoralis is one of the most difficult intestinal parasite to diagnose because of the low parasite load and irregular larval output [6].

Clinical manifestations include chronic intestinal infection, and hyperinfection syndrome [7], which occurs in immunocompromized patients, i.e., HIV carriers and transplant recipients. Most immunocompetent patients are asymptomatic, but may present with abdominal pain and diarrhea even several years later. Autoinfection is the major characteristic that separate Strongyloides stercoralis from other intestinal parasites. Diagnosing strongyloidiasis early is important, as a high rate of mortality and morbidity is associated with *S. stercoralis* hyperinfection or disseminated disease [8]. Here we report a case of immunocompetent elderly patient with strongyloidiasis.

CASE REPORT

A 50 year old elderly male was admitted with chief complaints of diarrhoea and weakness since one month. He had a history of passing foul smelling stool. He complained of upper abdominal pain, malaise, anorexia, loss of appetite and weight loss. He belonged to very low economic class in a remote village. From the past medical history he had only to point alcoholic habits. The patient denied of other symptoms namely fever or vomits. He had no other history such as tick exposure, contact with sickness or recent travel. There was no history of taking corticosteroids, diabetes mellitus, malignancy or any other immunosuppressive state including HIV.

At the time of admission, on general examination the patient was afebrile. His blood examination revealed Hb 5.6gm/dl. Total counts were within limits but differential count showed eosinophilia. Platelet count was adequate. Complete peripheral blood picture revealed microcytic hypochromic anaemia with eosiniphilia. Random blood sugar, blood urea, serum creatinine and electrolyted levels were normal. Serum iron level was decreased 42µg/dl. His UGC abdomen and cheat X – ray were normal. Serology for HIV, acute hepatitis, B, C were negative, thyroid function was in normal range.

Stool samples examination: the specimen was semi liquid, green coloured and foul smelling with mucous. Stool for

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occult test was positive. Stool examination for parasites revealed numerous actively motile larvae of Strongyloides stercoralis. Treatment with albendazole was immediately started and a parasitological cure was observed slowly. Even though the person had high parasitic load, parasitological examination of all members of his family were negative.

DISCUSSION

The control of enteroparasite infection is still a challenge in developing countries due to susceptibility of the host, favorable conditions of the environment, low socioeconomic level and precarious hygienic sanitary conditions [9,10]. It is a parasite that is very prevalent in the tropical and subtropical regions of the world [11]. Strongyloides is unique amongst intestinal nematodes in its ability to persist in humans for many years through autoinfective cycle [12].

Strongyloidiasis is caused by 2 species of the intestinal nematode *Strongyloides*. The most common and of greater clinical importance is *Strongyloides stercoralis.* The main mode of infection is through contact with soil that is contaminated with free-living larvae [13]. When larvae come into contact with skin, they are able to penetrate and migrate through the body. They eventually find their way to the small intestine where they lay their eggs. Most of these larvae will be excreted in the stool [13].

Low socioeconomic status, alcoholism, race, and male gender have been associated with higher prevalence of *Strongyloides* stool positivity [14]. The infection occurs after skin penetration by filariform larvae from the soil or by larvae on fomites, food, waste or feces. Human to human spread has been reported after anal sexual contact [15]. The clinical manifestation of hyperinfection syndrome varies widely and the onset may be acute or insidious. There is no quantitative definition, but it is characterized by an increase in gastrointestinal or pulmonary symptoms with an increased larval load in the stool or sputum. GI syndrome manifestations include watery diarrhea, weight loss, vomiting, and occasional bleeding.

Strongyloidiasis is commonly reported in immunocompromised patients; however, our patient was immunocompetent as his HIV status was negative, the history of alcoholism may have induced some imunosupression contributing to susceptibility to hyperinfection. The patient responded well to albendazole therapy and there were no *Strongyloides* larvae in the stool when examined after therapy, however Ivermectin is the choice of drug for treatment.

CONCLUSION

Strongyloidiasis is a major global health challenge that is underestimated in many countries. The best approach for the prevention & control of Strongyloides stercoralis is by improvement in sanitation. Strongyloidiasis is a curable disease. Early diagnosis and appropriate therapy will reduce the mortality and morbidity [16].Unless severely infected, the clinical signs and symptoms are generally not severe and frequently nonspecific. Albendazole is effective with minimal side effects. However, Ivermectin is considered to be the gold standard recommended therapy for Strongyloidiasis.

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TABLE

PATIENTS LAABORATORY RESULTS			
TEST	**RESULTS**	**HIGH/LOW**	**REFERENCE RANGE**
Haemoglobin	**5.6 gm/dl**	**Low**	14 - 18
WBC count	5,700 cells/ cumm		4.5 – 11.5
WBC differential			
Neutrophils	40%	Normal	50 - 70
Lymphocytes	30%	Normal	18 - 42
Eosinophils	**26%**	**Increased**	1 - 3
Monocytes	04%	Normal	2- 11
Stool for Occult blood	**POSITIVE**		
RBS	98 mg/dl		
Blood urea	30 mg/dl	Normal	8 – 40 mg/dl
Serum creatinine	1.8 mg/dl	Normal	Males 0.1 – 1.2 mg/dl
Serum electrolytes			
Sodium	136 mEq/l	Normal	135 – 145 mEq/l
Potassium	4.2 mEq/l	Normal	3.5 5 - mEq/l
Serum Iron	**42 µg/dl**	**Low**	60-175 µg/dl
HIV test	Negative	-	-
HBs test	Negative	-	-
HCV test	Negative	-	-

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FIGURES

Fig 1: Strongyloides adult filled with eggs

Fig 2

Fig 3

Figure 3 and 4: Strongyloides larvae in stool

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