Case Report

*Strongyloides stercoralis* infection in an HIV positive patient – A Case Report from RIMS, Imphal, Manipur

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Abstract

*Strongyloides stercoralis*, a nematode parasite in human with free living and autoinfective cycles, is often an asymptomatic infection of the upper small intestine. If the host becomes immunocompromised, autoinfection may increase the intestinal worm burden and lead to disseminated strongyloidiasis. We report a case of a 33 year old male HIV positive patient admitted on 2/6/08 in male medical ward, Regional Institute of Medical Sciences, Imphal, Manipur with complaints of loose stools, pain abdomen, nausea, vomiting, generalized weakness, loss of appetite and loss of weight for past one month with fever off and on. Stool examination reveals larvae of *Strongyloides stercoralis*. The patient was successfully treated with Ivermectin 200 µgm/kg daily for 2 days.

Key words : HIV, *Strongyloides stercoralis*.

INTRODUCTION

*Strongyloides stercoralis* is an intestinal nematode in humans, distributed through tropical and subtropical regions of the world. In most individuals, the infection has a chronic nature due to autoinfection at the low level. Accelerated autoinfection, mainly after an alteration in immune status, can cause a syndrome of severe hyperinfection or potentially fatal disseminated strongyloidiasis. Manipur being a subtropical area with a humidity ranging from 65% to 78%, favour the transmission and prevalence of intestinal helminthes. This parasite is common in South East Asia, Sub-Saharan Africa and Brazil. It is also endemic in residents who practice poor hygiene. *Strongyloides stercoralis* infections are often light and associated with...
few or no signs and symptoms, particularly during initial migration through the body. However, certain persons are at risk of severe, clinically significant disease. The manifestations of hyperinfection syndrome are divided, based on the system of origin, into intestinal and extra intestinal disease mainly involving the respiratory tract. Unfortunately, *S. stercoralis* hyperinfection is seldom diagnosed until late in the course of the disease, which contributes to high death rate. S. stercoralis has the ability to replicate in the human host. This capacity permits ongoing cycles of autoinfection as infective larvae are internally produced. Strongyloidiasis can thus persist for decades without further exposure of the host to exogenous infective larvae. Inside the host, this nematode may remain silent for many years. The importance of publishing this case report is that this parasite can cause fatal course of infections and there is always chance of further spread of the parasite among the population if not timely treated and prevented. The case has been reported because *S. stercoralis* infection in HIV seropositive patient is uncommon nowadays in Manipur. It might be due to health consciousness among the population. Moreover, the patient responded to Ivermectin therapy successfully inspite of its fatal course and the patient was discharged. Further study is to be undertaken to find out the prevalence of such infection among the population and treat to prevent further spread of the parasite.

**CASE REPORT**

A 33 year old male HIV seropositive patient was admitted in Male Medical Ward, RIMS, Imphal, Manipur with the chief complaints of profuse watery diarrhoea three to four times a day for 3 weeks. The patient was febrile with intermittent history of vomiting for the past one month, loss of appetite and marked weight loss. On examination, the patient had a temperature of 100°F, a pulse rate of 120 beats / min, and a blood pressure of 90/60 mm of Hg. The patient was well oriented, thin and dehydrated. Abdominal examination at the left lumbar region revealed mild tenderness but there was no organomegaly. Cardiovascular (CVS) examination revealed S1 S2(+) with no murmur and respiratory examination (RS) reveals normal vesicular breath sounds. Laboratory examination of hematological, immunological and biochemical parameters revealed that the patient had a haemoglobin (Hb) of 8.0 gm/dl, erythrocyte sedimentation rate (ESR) of 100 mm/1st hour (Normal 0-20mm/1st hour), total leucocyte count of 6000/cumm, lymphocyte count of 34%, eosinophil count of 3%, polymorph 60%, monocyte count of 3%, platelets count of 1.8 lakhs/cu.mm., RBCs morphology are predominantly of normocytic and normochromic with mild anisocytosis. HIV positivity was detected by 3 E/R using different principles. His CD₄+ T-lymphocyte count and CD₃+ T-lymphocyte count were 273 (cells/µl) and 63(cells/µl) respectively and its estimation was done by FACS count system. Liver function test (LFT) revealed serum alkaline phosphatase 470 KAU (3-13 KAUunits), serum bilirubin total 1.5 mg % (normal value 0.1-0.6 mg/dl), serum bilirubin direct 6.2 mg % (0.1-0.4 mg % normal value ), serum protien total 1.6 mg% (normal value 6-8 gm%), serum protien albumin 4.6 mg% (3.7-5.4 gm% normal value), SGOT 51.0 IU/L (5-40 units normal value), SGPT 32.0 IU/L (5-30 units normal value). His kidney function test (KFT) revealed serum creatinine 0.7 mg% (0.6-1.6 mg%), serum urea 14.0mg% (20-40 mg% normal value), serum sodium 135.0 mEq/L (130-145 mEq/L normal value) and serum potassium 3.4 mEq/L (3.6-5 mEq/L normal value ). His blood sugar random was 119.0 mg%. Three consecutive sputum samples for AFB were found negative. Rhabditiform larva in the sputum was not detected. Paragonimiasis, giardiasis, isosporiasis etc.
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were ruled out. Chemical analysis of urine showed acidic urine, protein (+1) and sugar nil. Chest X-ray did not reveal any abnormality. Ultrasound of abdomen showed normal echotexture with no abnormal foci. Both kidneys, ureters and urinary bladder were normal. But the patient gave previous history of right sided pleural effusion.

Gross examination of stool specimen showed watery consistency with no mucus. Stool specimen was concentrated using formalin ether concentration technique. The detection and recovery of Strongyloides larvae were done by employing Baermann modified funnel technique. Microscopic observation of wet mount preparation of stool concentrate with saline revealed numerous rhabditiform larvae of *Strongyloides stercoralis* that were identified by the characteristic morphology (200µl-250µl in length) as shown in figure 1. Stool cultures were not performed. The patient was given supportive therapy. Ivermectin 200 µg/kg twice daily x 2 days was given and clinical symptoms were resolved successfully and the patient was discharged. The patient is under follow up for primary care and ART therapy.

**DISCUSSION**

*Strongyloides stercoralis* being opportunistic parasites often associated with diarrhoea in HIV positive subjects may be held as the prime suspects of severe diarrhoea and weight loss. Mortality with this syndrome approaches 100% without treatment and has been about 25% with treatment. Most healthy people are not susceptible to *Strongyloides stercoralis* infection but with debilitating disease of any sort, patients with immune based disorders, susceptibility can increase. The common factor throughout is suppression of cell mediated immunity, or may be a reactivation of clinically dormant disease. In the present case, the patient is HIV seropositive with CD4 and CD3 count of 273 cells/µl 637 cells/µl respectively and there was past history of suffering from right sided pleural effusion. The spread of AIDS in the early 1980s was followed by occasional reports of strongyloidiasis. In Manipur, case of strongyloidiasis associated with HIV infection have been reported. Worm infestation are normally associated with eosinophilia but in the immunocompromised patients, eosinophils count may not be raised like lymphocytes. In the present study, the eosinophil count was 3% which is within normal range Occasionally, the helminth is seen in gastric, tracheal aspirates, pleural fluid and urine. In the present case, it was detected exclusively from stool. The clinical findings of strongyloidiasis are skin lesions, pulmonary lesions, intestinal lesions and blood changes. In the present study, the haemoglobin was on the lower side i.e. 8.0 gm% and B.P was 90/60 mm of Hg. But there were no skin, pulmonary and intestinal lesions and it is known that upto 30% of the infected patients are asymptomatic. So, this patient may be treated as the asymptomatic case. Early detection of *S. stercoralis* may alter the often fatal course of infection. Severe infections with *Strongyloides stercoralis* occur in immunocompromised patients. Increased awareness of this infection, which may also be sexually transmitted, is recommended when caring for patients with AIDS who are homosexual or have resided in areas endemic for strongyloidiasis. Multiple stool examinations should be performed routinely for such patients. Examination of sputum for the parasite is recommended if pneumonia is present. Prompt diagnosis and therapy is essential for prevention of fatal dissemination. In the present case, the patient was treated with Ivermectin (200 µg/kg) daily for 2 days and the response was good where the symptoms are resolved successfully and the patient was discharged. The patient is under follow up for primary care.
REFERENCES


