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Case Report

Strongyloidiasis in a newly diagnosed patient living with HIV – A case report

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ABSTRACT

Strongyloides stercoralis has a unique free-living stage in addition to the parasitic life cycle causing dissemination and hyperinfection syndrome. Clinical manifestations ranges from asymptomatic presentation in the immunocompetent host to disseminated disease and even septic shock in immunocompromised host. The non-specific presentation, risk factors, and complications of strongyloidiasis often require multiple tests for screening and diagnosis to increase the sensitivity of the tests. Here, we present a case report of a newly diagnosed patient of HIV with overlapping symptoms of respiratory and gastrointestinal tract involvement who was treated successfully. This emphasizes the need for strong clinical suspicion and screening of patients with the risk factors of strongyloidiasis.

Keywords: HIV, *Strongyloides stercoralis*, Rhabditiform larva, Autoinfection

INTRODUCTION

Strongyloidiasis is a parasitic infection of humans caused by *Strongyloides stercoralis* and very rarely by S. fuelleborni.[1] The disease is seen in tropical and subtropical countries but also in temperate regions during the summer.[2] The parasite has a unique life cycle including an autoinfection cycle which adds to the morbidity and mortality of the patient.[3] The clinical presentation varies from asymptomatic to acute, subacute, or chronic. The complications include hyperinfection syndrome and disseminated strongyloidiasis predisposed by immunosuppressive therapy, organ transplant, malignant disease, HIV infection, malnutrition, and diabetes mellitus.[4] It is often underdiagnosed because many cases are asymptomatic and due to lack of sensitive testing methods. Definitive diagnosis is made with the demonstration of larvae in stool examination or duodenal aspirate.[5] Early diagnosis and treatment can prevent the fatal course of the disease especially in the immunocompromised.[6] We here with present a case of *S. stercoralis* in a newly diagnosed patient with HIV.

CASE REPORT

A 50-year-old-male came with the complaints of fever for 2-month duration, cough with expectoration, abdominal discomfort, and vague abdominal pain for 1 month. The patient was a tobacco chewer and an alcoholic for more than 25 years and had abstained from alcohol for the past 5 years. Patient was not a known diabetic or hypertensive. On examination, patient

was thin built, pale and left cervical lymph nodes were enlarged. His pulse rate was 72/min and blood pressure was 90/60 mm of Hg. On palpation, the abdomen was soft with no local tenderness. The patient was conscious and coherent. Coarse crackles along with normal vesicular breath sounds were found over the left mammary region. Examination of cardiovascular system was unremarkable.

On admission, random blood sugar was 107 mg/dL, blood urea 30 mg/dL, creatinine 1 mg/dL, hemoglobin 8.6 g/dL, total WBC count of 18,600 cells/mm,[3] differential count of P84%, L7%, E01% M04%, and B04%. Erythrocyte sedimentation rate was 100 mm and 130 mm at ½ h and 1 h, respectively. ECG showed normal sinus rhythm. Peripheral smear showed microcytic hypochromic anemia and neutrophilic leukocytosis with mild left shift with absolute reticulocyte count of 0.5%. Serum sodium was 137 mEq/L and serum potassium was 5 mEq/L. Patient's serum sample tested positive for HIV I antibodies. Ultrasound of abdomen and pelvis showed multiple enlarged para-aortic, aortocaval, and mesenteric lymph nodes. Fine needle aspiration cytology (FNAC) of the right cervical lymph node showed necrotizing granulomatous lymphadenitis with secondary suppuration. Occasional foci of atypical cells were seen for which biopsy was suggested to rule out lymphoproliferative disorder. Sputum for acid fast bacilli was negative for spot and early morning samples. Chest x-ray posterior-anterior view showed dense homogeneous opacity of the middle lobe of the left lung. The Venereal Disease Research Laboratory test for syphilis was non-reactive. Stool microscopy showed moderate numbers of rhabditiform larvae with blunt and notched tail suggestive of *S. stercoralis* [Figures 1 and 2]. Stool occult blood was negative. The patient was empirically started on Azithromycin 500 mg bd/oral at admission and Ivermectin 12 mg/oral OD for 2 days was added after the sample was sent for stool examination. Stool and sputum samples collected on 2 consecutive days following the day of administration of Ivermectin was negative for *S. stercoralis* larva. Patient was referred to a higher center for management of HIV.

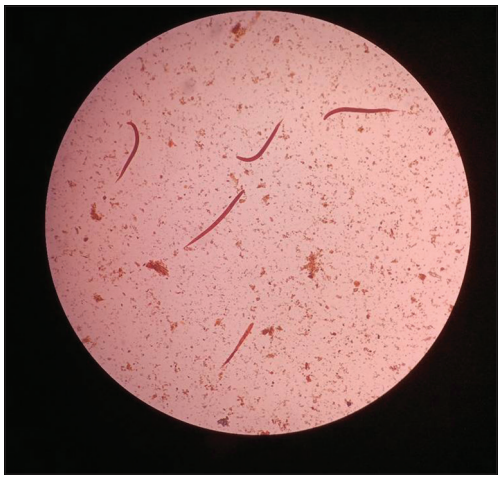

Figure 1: Rhabditiform larvae in iodine mount (×10).

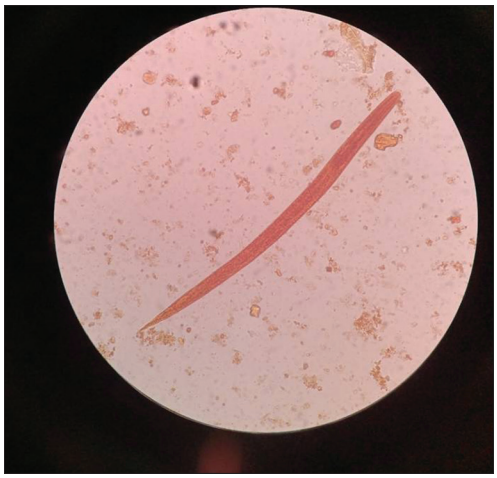

Figure 2: Rhabditiform larva in iodine mount (×40).

DISCUSSION

S. stercoralis, a soil transmitted helminth, is endemic in rural areas of tropical and subtropical regions and sporadic in temperate areas of the world.[1] Unlike other soil transmitted helminths, *S. stercoralis* is more complicated because of its free-living stage in addition to the parasitic lifecycle. Free-living adults produce eggs that hatch as rhabditiform larvae (L1) that moult twice to become third stage infective filariform larvae (L3). Filariform larvae then penetrate the skin, enter the circulation, and through the lungs, oropharynx reach the gut to develop into adults. The adults produce eggs that hatch into the first-stage "rhabditiform larva" which are shed in the feces. Autoinfection occurs when eggs from adult parasites hatch into rhabditiform larvae that become filariform larvae while still in the gut. The filariform larvae can complete the lifecycle in the gut, or disseminate, migrating to other organs and tissues.[2]

Clinical manifestations range from asymptomatic presentation in the immunocompetent host to disseminated disease and even septic shock in immunocompromised host. This patient presented with overlapping symptoms of respiratory and gastrointestinal tract involvement. The possibility of a malignancy was also considered in this patient considering the FNAC of the cervical lymph node. The risk factors for disseminated and hyperinfection syndrome include therapy with steroids, HIV infection, age more than 65 years, chronic lung disease, and antacid use. Auto-infection can manifest as asthma, chronic bronchitis, hemoptysis, eosinophilia, and pulmonary infiltrates.[4,5]

Diarrhea, constipation, abdominal pain, cough, and skin rashes are the common presenting symptoms of *S. stercoralis* infection and should always be considered as a differential diagnosis in such patients. Screening for *S. stercoralis* may be required in hemophiliacs, PLHIV, diabetic patients on steroids, individuals infected with Human T Cell Lymphoma Virus, tuberculosis, and malnourished individuals.[4,7,8] Absolute eosinophil count which is considered as a marker of for various parasitic infections was within normal range in this patient.[9] The possibility of strongyloidiasis causing low birth weight in pregnant women is still questionable and hence can be considered a screening criteria.[10] Treatment involves administration of Ivermectin and/or Albendazole as in this patient.

CONCLUSION

Considering the non-specific presentations and impending complications, a strong clinical suspicion along with meticulous laboratory work up is required for the diagnosis of strongyloidiasis. Along with microscopy, additional tests such as serology and PCR can also be considered to increase the diagnostic yield and to follow-up the patient.[11]

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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