

Case report

Strongyloides stercoralis infection in an immunocompetent patient presenting with shock and leading to acute renal failure – Case report

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Date of submission: 07 November 2014 ; Date of Publication: 15 December 2014

Abstract

Strongyloides stercoralis is a soil transmitted helminth, endemic in tropical and subtropical countries. Hyperinfection syndrome is more common in immunocompromised patients. In immunocompetent patients, the infection is generally benign and asymptomatic; larvae in stool being the only indication of infection. Rarely, it can present as shock in immunocompetent patients. We are reporting a rare case of this kind in an immunocompetent patient. A 24 year old male presented with acute gastroenteritis with hypovolemic shock. He reported passing watery and foul smelling stool and had 4-5 episodes of vomiting since previous night. He also gave history of chronic diarrhoea since four months. His stool examination revealed large number of Strongyloides stercoralis larvae. The patient's condition deteriorated very fast. His renal function deteriorated and succumbed due to acute renal failure. We report this case for its rarity.

Keywords: Strongyloides stercoralis, Immunocompetent, Shock

Introduction

Strongyloidiasis is a common cause of morbidity and mortality in tropical and subtropical countries. It is caused by the intestinal nematode Strongyloides stercoralis. In immunocompromised patients it mainly causes intestinal disease and can disseminate widely to extra intestinal sites such as lung, kidney or brain (Hyperinfection syndrome). However, in immunocompetent patients, it causes low grade chronic infection which may persist upto decades.

We report a 24 year old immunocompetent male presenting with acute gastroenteritis and hypovolemic shock. He also had history of chronic diarrhoea and weight loss. His stool examination showed numerous larvae of Strongyloides stercoralis. The patient developed acute renal failure and died.

Case Report

A 24 year old male labourer presented to casualty with acute gastroenteritis and hypovolemic shock.

He had a history of chronic diarrhoea of 4 months duration. He was afebrile with lower abdominal pain, loss of appetite and loss of weight. There was no history of taking corticosteroids, diabetes mellitus, autoimmune diseases, malignancy or any other immunosuppressive state including HIV.

At the time of admission, on general examination, patient was afebrile and appeared emaciated. There was no lymphadenopathy or clubbing. Systemic examination, including abdominal examination was unremarkable. His BP was 90/60 mm Hg, pulse 94bpm, RR 30/min. Pallor was present and peripheral pulse was feeble. His blood examination revealed Hb 10.5gm% and TLC of 16000/cmm. There was no eosinophilia. The patient was negative for HIV serology. His kidney function tests were normal at the time of admission with normal urine output. His USG abdomen was normal. Chest X-ray was normal at admission. His stool was sent for Hanging drop preparation. Stool was liquid in consistency; green coloured. There

was no blood, mucus or pus in stool. Test for Occult blood was negative. Microscopic examination of stool was negative for *Vibrio cholerae* but revealed numerous actively motile larvae of *Strongyloides stercoralis*. Anthelmintic treatment was started. The patient's urine output decreased and kidney function deteriorated. Blood urea was 180 mg/dl, serum creatinine was 9.6 mg/dl and his condition worsened further. BP, pulse was unrecordable and patient died because of acute renal failure.

Discussion

Strongyloides stercoralis is an endemic human intestinal nematode in the tropical and subtropical regions. The larva enters through skin in persons walking barefoot on contaminated soil. Most of these infections are asymptomatic. It can also disseminate to extra intestinal sites such as lung, kidney and brain (Hyperinfection syndrome). The clinical manifestations of Hyperinfection syndrome varies widely. The onset may be acute or insidious. In immunocompetent host, it leads to low grade infection lasting for decades(1). Different case reports describe *Strongyloides stercoralis* in immunocompetent patients. Atul S. et. al. described an unusual cause of malabsorption in an immunocompetent patient(1). Marathe A, Date V. in their case report described Hyperinfection in an immunocompetent patient with extreme eosinophilia (2). Another case was reported by Tiwari et.al. in an immunocompetent male who presented with features of malabsorption due to Hyperinfection of *Strongyloides stercoralis* (3).

This report describes the case of an immunocompetent male labourer with *Strongyloides stercoralis* infection presenting to the casualty with features of shock and eventual death due to acute renal failure. Similar study was presented by Dalela et. al. in a 29 year female labourer from Chhattisgarh with features of

diarrhoea and shock but responded to anthelmintic treatment (4). Our patient was a 24 year old male labourer, belonged to lower socio economic status and gave history of walking barefoot. These probably are risk factors for acquiring infection. Our patient had neutrophilic leukocytosis with no eosinophilia. Different studies have shown that only 70% of the patients with Strongyloidiasis have eosinophilia (5). In another study, only 22% of patients had eosinophilia (6). Hence, eosinophilia cannot be considered a reliable screening parameter for *Strongyloides* infection even in immunocompetent patients.

Our patient due to parasitic infection was emaciated, had weight loss and was in shock. Laboratory test of the patient did not show any of the abnormality except for the presence of numerous *Strongyloides stercoralis* larvae in the stool sample. Thus his emaciated look and weight loss could be due to chronic infection by the helminth. Diagnosis of *Strongyloides* is usually on the basis of detection of larvae in the stool. A single stool microscopy has been reported to be 30% sensitive for the diagnosis of intestinal Strongyloidiasis infection (7). In the present case, larvae of *Strongyloides stercoralis* were seen in the first stool sample. This is similar to the finding of Panigrahi et.al. In their study on case series, 100% of the patients were diagnosed with Strongyloidiasis on their first stool microscopy itself (6). Our patient was male. Similar association was noted in previous studies (8). Higher infection rate in males could be due to their outdoor work and therefore higher chances of exposure to infective larvae of the helminth.

Conclusion

Strongyloidiasis can present with severe life threatening diarrhoea even in immunocompetent patients which may cause hypovolemic shock and death due to renal failure. Therefore in tropical

countries, clinicians should maintain high index of suspicion while treating immunocompetent patients presenting with gastrointestinal symptoms even in

absence of eosinophilia. Timely diagnosis and specific antihelminthic treatment is necessary to prevent mortality.

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