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Case Reports

Strongyloides Stercolaris Infection: A Case Report for Raising Awareness

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Abstract:

Strongyloidiasis is a helminthic disease which is common in the tropics, subtropics and especially prevalent in far east. It is rarely reported in Bangladesh probably due to the low index of suspicion in common practice. We are reporting a case of strongyloidiasis that was found in a middle-aged patient presenting with diarrhoea, weight loss and generalized itching. He was treated in different hospitals and undergone extensive investigation. We diagnosed him as a case of strongyloidiasis on the basis of stool microscopy examination and treated with Ivermectin.

***Keywords*:** *Strongyloidiasis, Strongyloides Stercolaris, Awareness.*

Introduction:

Strongyloidiasis is one of the most important helminthic infections affecting humans. It may manifest clinically as mild or asymptomatic disease persisting for decades. It also can have life-threatening manifestations. In Bangladesh, it is not frequently reported. Here, we present a case of strongyloidiasis in a 40 years old gentleman in a picture of diarrhoea, severe weight loss and generalized itching for 6 months.

Case presentation:

A 40 years old gentleman got admitted with complaints of frequent episodes of diarrhea, anorexia and weight loss approximately 30 kg and generalizes intense itching associated with skin eruption and scaling for 6 months. He took treatment from local physician several times for this illness but his condition didn't improve and he became bed ridden for last 2 months.

On physical examination, he was cachexic and lethargic, moderately anaemic and oedematous. Vitals were within lower normal limit. There was generalized itchy, dry, hyperpigmented and scaly lesion. Gastrointestinal system examination revealed angular stomatitis and smooth tongue. Abdomen was soft and non-tender. No organomegaly was present. Sentinel tag was found at 6 o'clock position and anal fissure at midline posteriorly on digital rectal examination.

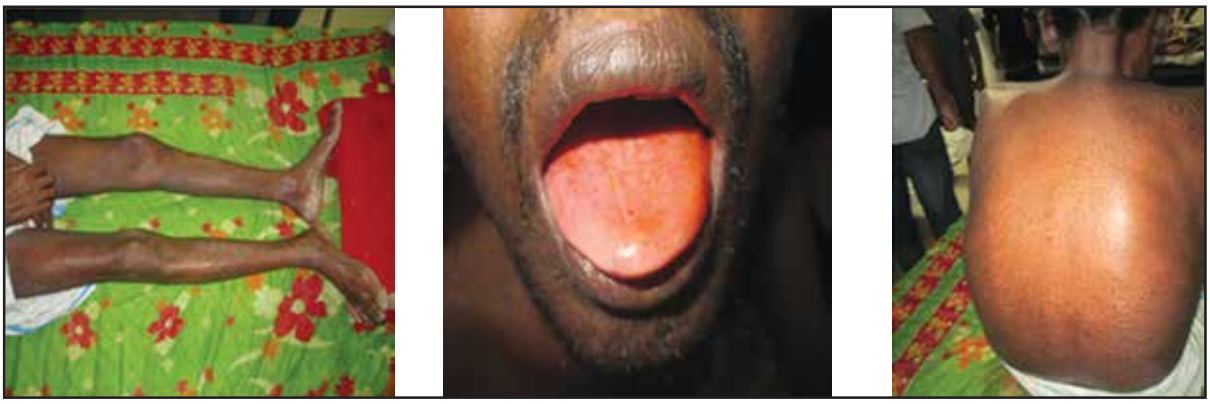

Figure 1: General condition of the patient

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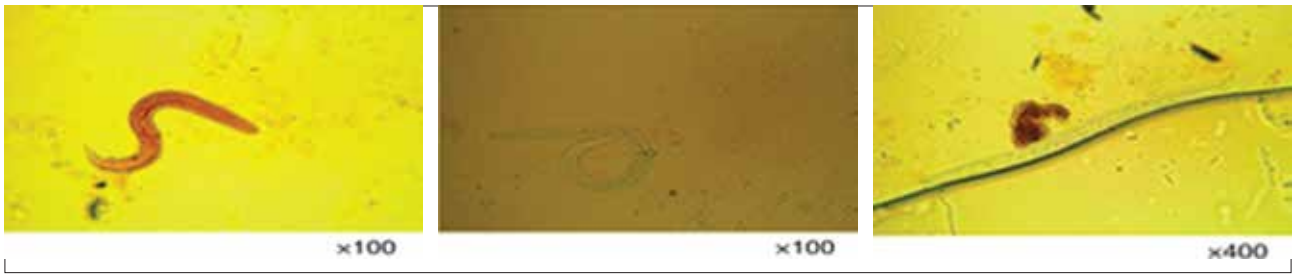

Figure 2: Stool microscopy showing strongyloidiasis larvae

Central nervous system examination showed evidence of peripheral neuropathy and proximal myopathy manifested as Gower's sign and diminished all modalities of sensation as glove and stocking pattern. Respiratory system and cardiovascular system examination reveal normal findings.

Laboratory investigation results showed hemoglobin 9.6 mg/dL, WBC count 12,300/ml, with 71% neutrophils, 17% lymphocytes, 3% monocytes, 8% eosinophil and 1% basophil and the platelet 6,50,000/ml and ESR 6 mm in 1st hour. PBF showed normocytic normochromic anaemia with eosinophilia with reactive thrombocytosis. Serum albumin was low (1.21 gm/dl). Serum electrolyte showed hyponatremia (Na: 125 mmol/l) and hypokalemia (K:2.7mmol/l). Serum ALT was 236 U/l. Other biochemical test reports including renal function, thyroid function test and serum iron, calcium, magnesium, vit B12 and folic acid were within normal limit. Addison's disease, AIDS and coeliac disease were excluded by serum cortisol, ACTH, anti HIV (ICT) and tissue transglutaminase IgA reports respectively. Chest X-ray, Ultrasonogram of whole abdomen, endoscopy of upper GI, CT scan of whole abdomen and barium follow through of small intestine were normal. Biopsy from distal duodenum showed infiltration of a few inflammatory cell, predominantly lymphocyte (3-5 in number) in each villi. The villi and crypts are normal in height with no atrophic changes. No evidence of gland destruction and goblet cell depletion in other areas. Ileocolonoscopy revealed rectal polyp, otherwise normal colon and terminal ileum. Stool R/E report showed moderate amount of Strongyloides Stercolaris larvae. We diagnosed the patient as a case of strogyloidiasis and treated with Ivermactin for 7 days. His abdominal symptoms and generalized well-being were improved and he was discharged.

Discussion:

Strongyloidiasis is a helminthic disease caused by Strongyloides Stercoralis, a soil transmitted nematode. It affects 30–100 million people globally[1] being hyperendemic (>5%) or endemic (1–5%) in many tropical and subtropical areas including Sub-Saharan Africa, Latin and South America, and South-East Asia and sporadic (<1%) in other temperate areas.[2]

S. Stercoralis is acquired by contact with contaminated soil, human waste, or sewage. Conditions such as poor hygiene and crowding, as well as some occupations such as farming and coal mining, may increase the risk of infection.[3] The parasite has a complex life cycle, which consists of two predominant larval forms – rhabtidiform, a free-living, and filariform, which is the infective form.[4] The filariform larvae enter the skin and travel to the lungs either hematogenously or through the lymphatic system. The larvae proceed up the bronchial airways, are swallowed into the gastrointestinal tract and make their way to the duodenum and proximal jejunum. They settle in the intestinal mucosa and mature into adult females. Through asexual reproduction, the adult females lay eggs, which hatch and give rise to the rhabtidiform larvae. These larvae may auto-infect the host by penetrating the intestinal mucosa or perianal skin or they are freely excreted in feces.[5,6] The parasite thrives in the host and replicates for decades. Sometimes the larvae may travel to other organs outside the pulmonary and GI systems, which results in a disseminated infection and may lead to sepsis, if gram negative bacteria are translocated. This process is associated with a high mortality rate. Immune deficiency, hematologic infection, HTLV-1 infection, renal failure and transplant, steroid use and chronic alcoholism are

predisposing factors for disseminated infection.[7]

The classic triad of symptoms consist of abdominal pain, diarrhea and urticaria.[4] During chronic autoinfection, patients may remain asymptomatic or may experience mild waxing and waning gastrointestinal, respiratory, or dermatologic symptoms with peripheral eosinophilia.[3] Hyperinfection syndrome may have a wide range of clinical manifestations that increase in severity in parallel with the parasitic dissemination rate. Gastrointestinal symptoms are common including diarrhea, abdominal pain, and vomiting. Prolonged malabsorption and protein losing enteropathy may also be present leading to severe hypoalbuminemia and refractory peripheral edema.[8] Skin involvement may present as pruritic rash that has sometimes a pathognomonic migratory serpiginous aspect termed "larva currens." More severe disseminated disease may involve the CNS, the pancreas, the liver, and the heart, and it may be associated with Gram negative septicemia secondary to simultaneous bacterial seeding through the GI tract.[9]

Peripheral eosinophilia is strong indicator for strogyloidiasis infection. An absolute eosinophilia >0.4 x 10^9 eosinophils/L (>400 eosinophils/microlitre) or relative eosinophilia >5% of the WBC differential cell count, will be present in 80% to 85% of chronically infected individuals. Relative eosinophilia 8% was documented in our patient. A single specimen of stool is <50% sensitive for detecting strongyloides larvae. Three stool specimens collected on different days should be examined as shedding of larvae may be intermittent. Patients presenting with hyperinfection or disseminated infection may have strongyloides larvae detectable in stool or sputum specimens.[10] Serologic tests are also useful for strongyloidiasis diagnosis as was shown in our case. Enzyme Linked Immuno Sorbent Assay (ELISA) method is highly sensitive for antibody detection.[11] Enterotest or String test is also sensitive for larvae detection but is cumbersome for patients.[12] Molecular testing using PCR for DNA detection on stools samples also appears efficient.[13]

A course of two doses of ivermectin 200 microgram/ kg, administered on successive days is effective in uncomplicated infection. Alternatively, albendazole is given in a dose of 15 mg/kg body weight twice daily for 3 days. A second course may be required. In hyperinfection syndrome, ivermectin is given for 5-7 days.[14]

Post-treatment eradication should be confirmed to prevent further autoinfectious cycles. Improved eosinophilia, repeated stools examination in 2 weeks, and decreased antibody titer after 6 to 12 months may be useful methods for monitoring in this setting.[15,16]

Conclusions:

Early detection and treatment of strongyloidiasis are extremely important due to increased risk of developing disseminated disease or hyperinfection syndrome. A high level of clinical suspicion is required to make the diagnosis of strongyloidiasis in at-risk patients presenting with diarrhea, peripheral eosinophilia and skin rash.

Conflict of interest: None.

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