**Case Report**

**Malabsorption Syndrome Caused By Strongyloides Stercoralis Infestation: A Case Report**

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**Abstract:**

Malabsorption syndrome refers to a number of disorders in which the intestine’s ability to absorb certain nutrients, such as vitamin B12 and folic acid and iron, into the bloodstream is negatively affected. Chronic diarrhea is a feature of malabsorption syndrome. Chronic diarrhea due to Strongyloidiasis is a well recognized entity especially in immunocompromised individuals. We report a case of intestinal Strongyloidiasis in a case of Bronchial asthma.

**Key words:** Malabsorption, Strongyloides stercoralis, chronic diarrhea.

**INTRODUCTION:**

Malabsorption syndrome refers to a number of disorders in which the intestine’s ability to absorb certain nutrients, such as vitamin B12 and folic acid and iron, into the bloodstream is negatively affected. Chronic diarrhea is a feature of malabsorption syndrome. Chronic diarrhea due to strongyloidiasis is a well recognised entity especially in immunocompromised individuals. Strongyloides stercoralis is a ubiquitous soil transmitted intestinal nematode of humans that is endemic in many areas throughout the tropical and temperate regions. Strongyloides stercoralis hyperinfection syndrome has increased in frequency during the past decades as a result of immunosuppressive therapy used in the treatment of organ transplant recipients, collagen vascular diseases and cancer. Corticosteroids are the most widely used and the most specifically associated with transforming chronic strongyloidiasis to hyperinfection. We report a case of intestinal strongyloidiasis in a case of Bronchial asthma.

**CASE REPORT**

A 52 year old male with a history of bronchial asthma came to medical OPD with complaints of intermittent diarrhea, nausea, vomiting, poor intake of food and colicky abdominal pain since three months. He was treated with norfloxacin, tinidazole, loperamide and ranitidine at a small clinic. Patient was taking self medication with drugs such as prednisolone and theophyllin since one year for asthma. The patient was thin built. His vital signs were stable. The physical examination was normal. Routine laboratory investigations were shown in the table (Table 1). Peripheral smear showed macrocytosis and eosinophilia. Stool examination performed at that time did not show any parasite. Upper GI endoscopy showed mucosal edema of the duodenum. Biopsy from the duodenum revealed numerous parasitic eggs and larvae of Strongyloides stercoralis within the mucosa with inflammatory cells (figure 1). A diagnosis of Strongyloides stercoralis induced malabsorption syndrome was arrived and treated appropriately.

Patient responded well with ivermectin, Vitamin B12 and folic acid. He was also advised not to take self medication (steroids) unnecessarily without physician’s consultation.

**DISCUSSION**

Strongyloides stercoralis, also called threadworms, is a nematode helminth parasite that causes strongyloidiasis. There are an estimated 100 million to 200
milllion people infected with Strongyloides stercoralis residing in 70 different countries. The true prevalence of a Strongyloides stercoralis infection is underestimated because a majority of the cases are sub-clinical. Strongyloides Stercoralis was first revealed in the feces of French soldiers in 1876. The soldiers returned from Indochina (Vietnam, Cambodia, and Laos) with severe diarrhea. Strongyloides stercoralis is most prevalent in warm climates but has the ability to survive in colder climates. There is a high prevalence of Strongyloides stercoralis in Brazil, Central America, and Australia. It is endemic in Africa, South and Southeast Asia, South America, Italy, Papua New Guinea, and the Pacific Islands such as Fiji. Low socio-economic status, alcoholism, being Caucasian, male gender and occupations requiring contact with soil contaminated by human waste such as farming, coal mining etc. increase the risk of infection. The infection occurs after skin penetration by filariform larvae from the soil or by larvae on fomites, food, waste or feces.

Strongyloides stercoralis is unique among common helminthes for its potential for autoinfection and persistence. The rhabditiform larvae formed are transformed into infectious filariform larvae before being excreted in stools. They re-infect the host through the intestinal mucosa or perianal skin. Extraintestinal infections may occur in the lungs, liver, spleen, pancreas, gall bladder, kidneys, thyroid, brain, meninges, skin, mesenteric lymph nodes, ovaries and skeletal muscle in hyperinfection.

Hyperinfection is associated with old age, chronic corticosteroid therapy for COPD, malignancy, acquired immunodeficiency syndrome, achlorhydria, use of H-2 blockers, gastrointestinal disorders and malnutrition. Secondary bacterial infection with bacteremia and meningitis may occur due to breach of the bowel mucosa by the worms allowing gut organisms access to the blood stream. Culture techniques are much more sensitive than routine stool microscopy, with an accuracy rate up to 96% for the agar plate method. However, these methods are expensive and time consuming. In the duodenum, endoscopy shows edema, brown discoloration of the mucosa, erythematous spots, subepithelial hemorrhages and megaduodenum.

The histological diagnosis from the biopsies or surgical specimens taken from the duodenum is usually diagnostic. Different stages of maturation of the parasite can be demonstrated on microscopy of the biopsy material. Adult female worms, eggs and larvae are seen in the epithelium of the crypts with acute or chronic inflammation in the mucosa with eosinophilis. Damage of the surface epithelium with hyperplastic reactive changes are noted in most of the cases. Eosinophilia is common in strongyloidiasis ranging from 25 -35% in acute cases and 6-8% in chronic cases. But sometimes, eosinophil count may be low in some immunosuppressed conditions. Our case also showed eosinophilia. Treatment is usually with antihelminthic drugs such as ivermectin, thiabendazole, mebendazole and albendazole.

The laboratory diagnosis of strongyloidiasis is usually made by demonstrating rhabditiform larvae in fecal specimen. The sensitivity of a single stool sample microscopy is only 30% and a routine stool examination may fail to find larvae when the intestinal worm burden and output of larvae is minimum. Larvae may not be detected in a cursory examination of small quantity of feces. To improve the chances of finding the parasite, repeated examination of stool specimen should be performed, preferably with concentration techniques.

<table>
<thead>
<tr>
<th>Table 1 showing routine laboratory investigations</th>
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<tbody>
<tr>
<td>Hemoglobin</td>
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<td>Total WBC Count</td>
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<td>RBC Count</td>
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<tr>
<td>Differential count:</td>
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<tr>
<td>Neutrophils</td>
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<td>Lymphocytes</td>
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<td>Monocytes</td>
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<td>ESR</td>
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<tr>
<td>Urea</td>
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<tr>
<td>Creatinine</td>
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<td>HIV</td>
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</table>

Figure 1 showing mucosal villi with entrapped Strongyloides stercoralis eggs and larvae (arrows). Hematoxyline and Eosin stain (low power view 100).
CONCLUSION:

Strongyloidiasis is a curable disease and is usually overlooked by the physicians as the clinical signs and symptoms are nonspecific and less severe. Early diagnosis and appropriate therapy will reduce the mortality and morbidity. Hence, it is prudent to look for strongyloidiasis in high risk patients if they are immunocompromised.

REFERENCES: