CASE REPORT

Strongyloidiasis: A Presentation of an Unusual Case of Adult Malnutrition

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Abstract

Malnutrition is a pathological state due to either excess or deficient intake of one or more essential nutrient. It can be undernutrition or overnutrition (obesity). Adult undernutrition is often underestimated and undertreated. There are many causes of undernutrition in adults like poverty, malabsorption syndrome, chronicinfection, immunocompromised state, and worm infestation in adults. This is a case report of immunocompetent adult malnutrition due to worm infestation. Strongyloidiasis is often underestimated due to its subclinical presentation. It may present as acute respiratory distress syndrome (ARDS), AGE, and hyperinfection syndrome based on different phases; it acquires in the host. This patient was presented with hyperinfection syndrome and diagnosed with *Strongyloides stercoralis* infestation by upper gastrointestinal endoscopic biopsy and histology and stool examination. Patient was treated with specific antihelminthic and supportive therapy and recovered substantially.

Keywords: Immunocompetent, Malnutrition, Strongyloidiasis.

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Introduction

Malnutrition is a pathological state due to either excess or deficient intake of one or more of essential nutrient. It is estimated that 14% of Indian population is undernourished. According to Asian specific criteria, BMI of <18.5 is considered as underweight.

Strongyloides stercoralis is an intestinal nematode that infects about 100 million people worldwide.[1] Its infection is seen in tropical, subtropical, and less temperate areas.[2–4] This parasite has a distinct lifecycle that involves direct, auto-infective, and a nonparasitic-free living growth cycle. The global prevalence of strongyloidiasis in 2017 was 8.1% and SE Asia, African, and Western Pacific regions accounted for 76.1% of infections [5] Few cases were reported from central India and Assam and few were of cattle strongyloidiasis reported from Tripura, India.[6] But no human cases were reported in Tripura, North East India.

Case Description

A 27-year-old male patient, a farmer by occupation residing in a village of Tripura state, came with complaints of decreased appetite, vomiting soon after taking food, and pain abdomen all day long for the last 3 months. He also gave history of significant weight loss (10 kg) in last 3 months. No history of breathlessness, hemoptysis, or blood in stool or black-colored stool or blood vomiting.

No past history of long-term steroid intake, radiotherapy, and chemotherapy for any carcinoma. No history of organ transplantation.

On general examination, the patient was cachexic with sunken eyes, weight of 45 kg and height of 163 cm with BMI of 16.98 kg/m^2. Blood pressure was 100/60 mm Hg and pulse rate of 98 bpm. He had moderate anemia, no icterus, cyanosis, or lymphadenopathy. Systemic examination showed scaphoid abdomen, no organomegaly, and no palpable mass per abdomen, and his respiratory system examination showed loss of subcutaneous fat and muscle mass over supraclavicular region and intercostal regions. Trachea was central in position and bilateral vesicular breath sounds were heard. On CNS examination, the patient was depressed and had decreased response to verbal commands, but other higher mental function tests were normal. Overall power of the muscles was decreased probably due to undernutrition but tone was maintained. Cardiovascular system examination was normal.

Investigations like X-ray showed no features of TB and his USG of abdomen showed grade II fatty liver. His complete blood count showed microcytic hypochromic anemia with eosinophil count of 2%, neutrophil count of 73%, and lymphocyte count of 22%. HIV and other viral markers were negative.

Then patient was subjected to upper gastrointestinal (GI) endoscopy, which showed multiple hemorrhagic and whitish spots over gastric mucosa and duodenal mucosa. Multiple biopsies were taken from gastric mucosa and D2 part of duodenum and sent for examination (Fig. 1).

The microscopic report showed the presence of eggs and larval form of *S. stercoralis* within crypts. The lamina propria shows mixed inflammatory cell infiltration. No epitheloid granuloma was seen and no features of malignancy were seen.

Stool examination showed larvae of *S. stercoralis*. Sputum, urine, and CSF examination were normal (Figs 2 and 3).

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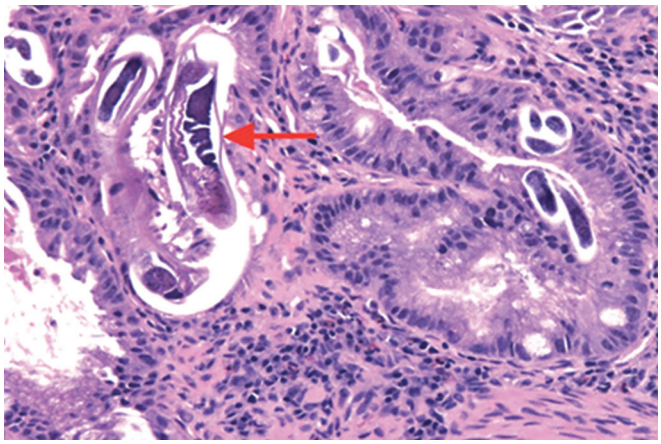

Fig. 1: Histology slide showing *Strongyloides* infection of duodenum. The background mucosa shows mixed inflammatory cell infiltration

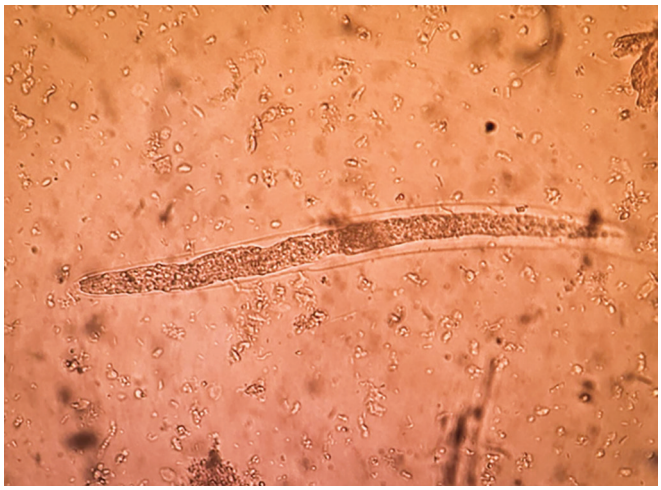

Fig. 2: Stool examination showing *S. stercoralis* larva

Fig. 3: Patient diagnosed with *S. stercoralis* infestation

Discussion

S. stercoralis is a nematode that is prevalent in tropical and subtropical regions of the world. They can infect both cattle and humans.[6] In humans, they infect transcutaneously with filariform larvae from the soil. Most of the time the infection is asymptomatic but can present cutaneous, gastrointestinal, or pulmonary symptoms.[5] It is commonly seen in immunocompromised patients, receiving immunosuppressive drugs, long-term steroid therapy, chemotherapy for cancer, and hematologic malignancies and in patients with organ transplantation, HTLV1, and HIV.

Hyperinfection Syndrome

It represents an acceleration of normal life cycle of *S. stercoralis*, leading to excessive worm burden within traditional reproductive route (skin, gut, lungs).

The clinical presentation of hyperinfection syndrome includes nausea, vomiting, diarrhea, weight loss, abdominal pain, GI hemorrhage, cough, fever, and dyspnea.[2–4]

Disseminated Strongyloidiasis

It represents widespread dissemination of larvae outside of the gut and lungs, often involving the liver, brain, heart, and urinary tract.[7–9]

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