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Disseminated strongyloidiasis in a 70-year-old lady

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Objectives To describe a case of disseminated strongyloidiasis in an old age lady with non-specific clinical manifestations.
Methods and Results A 70-year-old lady was admitted to Merjan Teaching Hospital on 28th of July 2008 with 2 months history of generalised abdominal pain. Presence of numerous *S. stercoralis* larvae during intestinal mucosal biopsies confirmed the diagnosis of hyperinfection syndrome in this patient. Albendazole therapy did not cure the effects; and the patient died due to this severe illness. The most important clue to prevent such fatal consequences is high index of suspicion, early diagnosis and proper management.
Conclusion Disseminated strongyloidiasis needs high index of suspicion especially in immunocompromised patient who presents with vague gastrointestinal manifestations.
Keywords disseminated strongyloidosis, gastrointestinal biopsy, old age

Introduction

S. stercoralis is distributed in tropical areas and other hot, humid regions like our country. Globally between 30 and 100 million people are infected[1,2] with disseminated strongyloidiasis, particularly in patients with unsuspected infection who are given glucocorticoids. Humans acquire strongyloidiasis when filariform larvae in the fecally contaminated soil penetrate the skin or mucous membranes; so sanitation will not prevent infection.[3,4] The larvae then travel through the bloodstream to the lungs, where they break into the alveolar spaces, ascend the bronchial tree, and are swallowed, thereby reach the small intestine. There the larvae mature into adult worms that penetrate the mucosa of the proximal small bowel. The larva repeats the migration that establishes ongoing internal reinfection. This autoinfection cycle allows strongyloidiasis to persist for decades.[5] Strongyloidiasis can thus persist for decades without further exposure of the host to exogenous infective larvae. In immunocompromised hosts, large numbers of invasive Strongyloide larvae can disseminate widely and can be fatal. We describe a fatal disseminated intestinal strongyloidiasis in a 70-year-old lady.[6,7]

Case Report

A 70-year-old lady was admitted to Merjan Teaching Hospital on 28th of July 2008 with 2 months history of generalised abdominal pain described as heaviness sometime vague in nature. The pain does not radiate to other sites but on few occasions she feels backpain which is dull in nature also the pain was associated with mild distension and flatulence. During the last 2 weeks prior to her last admission to hospital, she developed anorexia, nausea and repeated vomiting and daily low grade fever, with generalised weakness and lassitude to extent that she was unable to do her usual daily activities due dizziness and inability to walk alone for a short distance. She also described a right-sided lower chest pain non-pleuritic dull in nature aggravated by movement, and her bowel motion passed only twice during the last 2 weeks. She is not a smoker, with negative past medical and surgical history. No history of allergy to drugs or abuse of medicine were noted. On physical examination she was very ill, tired lady , mild pallor, dry tongue, no jaundice with signs of generalised wasting, without clubbing of the fingers, but there were bilateral mild leg swelling particularly noticed on her feet associated with mild, non-pruritic evanescent erythema. Cardiorespiratory examination was normal. There was a mild distension of her abdomen with no rigidity or guarding, but she had some tenderness on deep palpation of her epigastric and upper right side area of her abdomen, bowel sounds could be heard two times per minute. She was conscious and drowsy with no focal neurologic signs, no neck rigidity. Temperature was 38°C, pulse rate was 118/min, and her BP was 95/60 mmHg. At the day of her admission, she was given IV fluid glucose saline, Cefatoxime 500 mg qds, Ranitidine injection, Metoclopramide on need, paracetamol and one alpha hydroxyl cholecalciferol per oral. The following were the investigations: RBS 6.3 mmol/L, FBS 5.2 mmol/L, B. urea 7.2 mmol/L, S. creatinine 108 mmol/L, S. bilirubin 10 µmol/L, ALT 13 U/L, AST 9U/L, Na 124 mmol/L, K 4.2 mmol/L. Urine examination showed no proteinuria, RBC 8–10/HPF, WBC 6–8/HPF, blood picture; PCV 34%, WBC 6 × 10 (78% neutrophil, 20% lymphocytes, 1% monocytes, 1% eosinophil), film normochromic normocytic erythrocytes normal leucocytes, platelets 320 × 10. ESR 7 mm/hr, SPO_2 95%, ECG & echo studies were reported as normal. CXR and skull X-ray and U/S, plain X-ray of abdomen showed normal findings, CT scan of brain and abdomen also were normal. The next day she remained ill and was febrile – BP 90/50 mmHg, PR 99/min, Temp 37.8°C. The patient was advised to continue IV normal saline, salt free albumin, stop oral fluids and made arrangement for OGD which showed moderate oesophagitis with reflux, pangastritis with signs of ulcerative duodenitis in the first and second part, multiple gastroduodenal biopsies taken on histopathological examination showed marked chronic superficial gastritis, no malignancy, duodenal mucosal tissues, moderate inflammatory cells infiltration with infestation of the mucosa by helminth *Strongyloides* spp. We put the patient on NGT according to the surgeon's advice and Albendazole (400 mg twice daily for 3 days) was given, IV fluids and PPI were added but the patient remained very ill hypotensive and died on 3 August 2008 6 am. Fig. 1a–f shows histopathological and some clinical signs.

Discussion

Strongyloides is one of the parasitic infections which has the ability to autoinfect the host without soil or intermediate host.

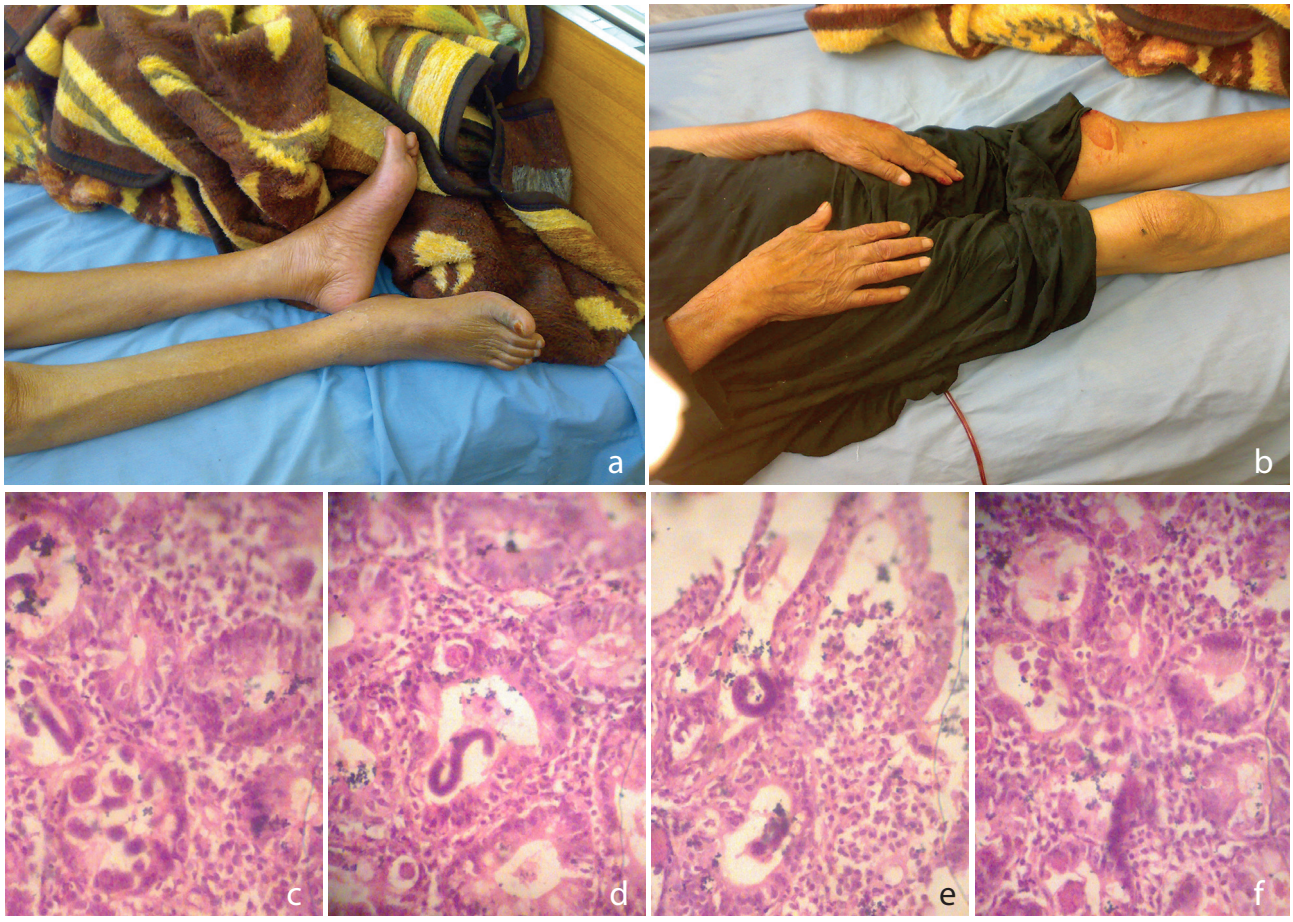

Fig. 1 **a-f: Histopathological and some clinical signs.**

It is often complicated by infections caused by gut flora that gain access to intestinal sites, presumably through ulcers induced by the filariform larvae,[8,9] as we had noticed in our case report who presented with severe toxic manifestation. Strongyloidiasis can occur without any symptoms or as a potentially fatal hyperinfection or disseminated infection. Immunocompromised patients are at an increased risk of dissemination because impaired cellular and humoral immunity alter parasite proliferation, resulting in increased parasitic burden and possible dissemination to other organs. In this accelerated phase of autoinfection, enormous numbers of larvae are released into the venous circulation and disseminate throughout the body. As we had noticed in our patient not only having AIDS or being treated with corticosteroids and/or other immunosuppressive drugs, but possibly she is an elderly patient with disturbed immune function. The patient presented in this case report lived in an endemic area with warm climate area in Babylon Iraq and her infection with *S. stercoralis* was undiagnosed till her hospitalization. In some cases of hyperinfection and disseminated strongyloidiasis, eosinophilia is the most important laboratory finding in patients infected with *S. stercoralis*,[10,11] but in our patient eosinophilia is not documented and this might be due to disturbed cellular immune function or possible underlying abuse of non-reported corticosteroid abuse. Treatment with ivermectin resulted in remarkable clinical improvement and reversion of eosinophil count to normal.[12] We treated our patient by using albendazole antihelmintic which is less effective than ivermectin therapy and it was not available at that time. In this reported case, the initial presentation was C/W features of malabsortion and possible septicemia and the ultimate were made after tissue diagnosis and in strongyloidiasis diagnosis it is important as the infection may persist for decades and immunosuppressed patients with chronic strongyloidiasis are at high risk of developing strongyloides hyperinfection syndrome, a fatal life-threatening complication whereby larval proliferation leads to systemic sepsis and multiorgan failure. If strongyloidiasis is diagnosed early, however, it is easily treatable with oral antihelmintic drugs. Therefore, as clinical symptoms and endoscopic findings are non-specific, a high level of suspicion is required for diagnosis especially in patients who present with a vague clinical presentation.[13–16] In conclusion, we should know that individuals with disturbed immunity, particularly with cell-mediated immunity defect, hematological malignancy, steroid usage, malnutrition, diabetes and organ transplantation, in addition to elderly subjects are predisposed to this infection. Early diagnosis and timely therapy in case of hyperinfection syndrome can have a marked impact on the disease outcome. Also endoscopic findings of GIT could be non-specific, a high level of suspicion is required for diagnosis.

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