Strongyloid Hyperinfection Syndrome in a Renal Transplant Recipient

Sir,

A 40-year-old male who presented with chronic kidney disease secondary to diabetic nephropathy underwent renal transplant surgery with his spouse as donor. Induction therapy was given with injection basiliximab (20 mg - two doses) and immunosuppression with tacrolimus (3 mg twice a day), prednisolone (20 mg), and mycophenolate mofetil (1.5 g).

After 3 months, he presented with complaints of abdominal pain, vomiting, and decreased appetite of two weeks duration. Biochemical analysis revealed serum creatinine 0.8 mg/dl, hemoglobin of 9 g/dl; total leukocyte count of 9500/µl with normal differential and platelet count. Blood and urine cultures were sterile. Blood cytomegalovirus polymerase chain reaction was negative.

Roentgenogram of the abdomen revealed distended bowel loops. Esophageal endoscopy done for odynophagia revealed ulcerations in the esophagus. Small pin head-sized white patches in the duodenum were biopsied and they revealed Schistosomal larvae and adult forms [Figure 1]. Wet mount of stool demonstrated *Strongyloides* larvae. He developed breathlessness in the 2nd week of hospital stay. Roentenogram of the chest showed right lower lobe infiltrates. Fiber-optic bronchoscopy revealed fresh blood in both main bronchi with normal mucosa. Bronchoalveolar lavage (BAL) showed motile *Strongyloides* larvae with Gram's stain positive for *Candida*. BAL culture grew *Klebsiella*. He was treated with tablet ivermectin (200 mcg/kg/day) and tablet albendazole (800 mg/day) along with injection meropenem (1 g thrice a day) and liposomal amphotericin B to cover secondary infections. Chest roentgenogram in the 3rd week revealed clearing of infiltrates. Antifungal and antibacterial treatment was given for a total of 2 weeks. The patient was discharged in a stable condition. Anti-parasitic drugs were continued for 12 weeks. He is on follow-up with normal graft function (serum creatinine 1.0 mg/dl) and good general condition. Stool examination was negative for larvae at 4 weeks of treatment and it was reconfirmed at 12 weeks.

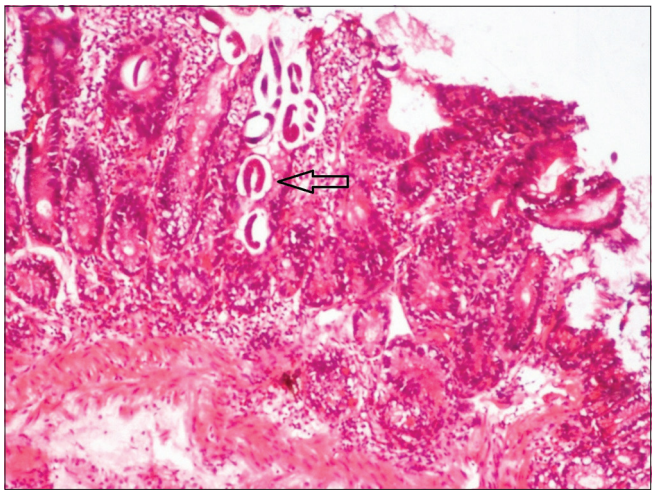

Figure 1: Biopsy from the duodenum revealing numerous rhabditiform larvae and eggs of *Strongyloides* (black arrow) with inflammation in the lamina propria

The prevalence of *Strongyloides* in India is 12.7%.[1] *Strongyloides stercoralis* is an intestinal nematode. The unique feature is its ability to continue life cycle in humans itself (autoinfection)[2]. Transplant recipients are at risk for developing *Strongyloides* hyperinfection syndrome due to immunosuppression. It is frequently complicated by infections with Gram-negative bacilli which migrate from bowel.[3]

Prevention is the best modality to reduce incidence of this disease. Routine preoperative screening in case of solid organ transplantation is advised either by ELISA (IgG) method or stool examination. Chronic infection should be treated before transplant to decrease high risk of relapses once immunosuppression is started.[4-6]

Diagnosis of this condition can be made by stool examination on wet mount, stool culture, serology, biopsy of duodenal mucosa or skin lesions, or wet mount of body fluids.[7] Ivermectin is the treatment of choice in a dose of 200 µg/kg. In chronic infection, the drug is given in two doses, followed by a third dose after 2 weeks. Immunosuppressed patients are prescribed longer courses till negative samples are obtained.

Hyperinfection syndrome is a rare condition, and high degree of suspicion is required for diagnosis. Early detection is essential as it is curable. Secondary bacterial infections can complicate this entity.

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Conflicts of interest

There are no conflicts of interest.

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References

1. Schär F, Trostdorf U, Giardina F, Khieu V, Muth S, Marti H, *et al. Strongyloides stercoralis*: Global distribution and risk factors. PLoS Negl Trop Dis 2013;7:e2288.
2. Roxby AC, Gottlieb GS, Limaye AP. Strongyloidiasis in transplant patients. Clin Infect Dis. 2009;49:1411–1423
3. Igra-Siegman Y, Kapila R, Sen P, Kaminski ZC, Louria DB. Syndrome of hyperinfection with *Strongyloides stercoralis*. Rev Infect Dis 1981;3:397-407.
4. Ashraf M, Gue CL, Baddour LM. Case report: strongyloidiasis refractory to treatment with ivermectin. Am J Med Sci 1996;311:178-9.
5. Screening of donor and recipient prior to solid organ transplantation. Am J Transplant 2004;4 Suppl 10:10-20.
6. Centers for Disease Control and Prevention; Infectious Disease Society of America; American Society of Blood and Marrow Transplantation. Guidelines for preventing opportunistic infections among hematopoietic stem cell transplant recipients. MMWR Recomm Rep 2000;49:1-125, CE1-7.
7. Segarra-Newnham M. Manifestations, diagnosis, and treatment of *Strongyloides stercoralis* infection. Ann Pharmacother 2007;41:1992-2001.

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