Cough and alterations in semen after a tropical swim

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ABSTRACT

This case report describes a patient with cough and haematospermia shortly after visiting a Schistosoma endemic area. Numerous S. haematobium eggs were found in the ejaculate, while no eggs were seen in the urine.

KEYWORDS

Cough, genital, male, schistosomiasis, Schistosoma haematobium, semen

INTRODUCTION

Schistosomiasis is a parasitic disease caused by the blood dwelling trematode of the genus Schistosoma. People get infected in tropical areas through contact with fresh water containing the skin-penetrating infectious larvae.1 In the area of Lake Malawi, where several popular tourist resorts are situated, Schistosoma haematobium is the predominant Schistosoma species.2 In humans, the adult worm of this species is normally hosted in the perivesical venous plexus and eggs are excreted via urine. Haematuria is one of the main clinical signs of an established S. haematobium infection. However, a majority of affected individuals are initially free of symptoms,1 with substantial risk of developing serious complications many years after infection. Due to relatively low worm burden, infections are easily missed in travellers, in particular if examination is limited to the detection of eggs in urine only. Determination of specific antibodies significantly increases the sensitivity of diagnosis.1 Here, we describe an uncommon presentation of a S. haematobium infection in a traveller shortly after visiting Lake Malawi.

CASE REPORT

A 26-year-old Dutch medical student consulted his general practitioner with a five to six weeks' history of persistent dry cough accompanied by general malaise and periods of slight fever. Two months before the patient had travelled through Southern Africa where he visited several hospitals in Zambia and was in contact with fresh water at Cape Maclear, Malawi. Besides mild hay fever there was no medical history of relevance. On physical examination wheezing was heard over the lungs. Chest radiography showed enlarged hili, but no nodular lesions. Laboratory examination revealed eosinophilia (1.73 x 10⁹/l). Allergic asthma was hypothesised and cetirizine was prescribed to suppress the cough with moderate effect.

Three weeks later, the patient noticed watery, rust-coloured semen and scrotal tenderness. Micturition was normal and no perineal trauma had occurred. His testes were of normal size and consistency. Rectal examination did not show signs of prostatitis. Because of the contact with fresh water in a Schistosoma endemic area, a parasitologist from Leiden University was consulted. Microscopic examination of ejaculate, collected after refraining from sexual activities for 36 hours, revealed about 1000 S. haematobium eggs in total (figure 1). Number and motility of spermatozoa were normal, but many leucocytes were seen, 60% were eosinophils. Low numbers of S. haematobium eggs were found in the stool, and none in urine. Schistosoma-specific antibody levels against adult worm and soluble egg antigen were highly positive. Both serum and semen samples were negative for the schistosome circulating antigen CAA.3

The patient was treated with praziquantel 40 mg/kg bodyweight given in one dose. During intensive follow-up the macroscopic aspect of the semen returned to normal within 11 days and no more viable eggs were demonstrated from four weeks after treatment. Specific antibody levels
hardly changed in four months; eosinophilia decreased to $0.48 \times 10^9/l$. The initial cough persisted and was ascribed to bronchial hyperreactivity. Successful treatment with inhalation glucocorticosteroids was installed.

**DISCUSSION**

This is the first report describing an extremely high number of *Schistosoma* eggs (1000) in the ejaculate of a traveller with a Katayama syndrome and haematospermia. On average, an adult worm pair produces a few hundred eggs per day. More than half of these eggs do not reach the environment, but get trapped in the host tissues. Our finding therefore suggests that this ectopic localisation is not limited to a few eggs, or to a single worm pair that has lost its way. Rather, it seems that a cluster of several worm pairs had settled in the seminal vasculature. In our case no eggs were found in urine and only a few in faeces, implying that no worms had reached the commonly inhabited perivesical venous plexus yet.

*Schistosoma* infections affecting the male genital tract have been described before, both in travellers and endemic patients. One of the first cases was reported in 1949 when Claude Barlow infected himself with larvae of *S. haematobium* and observed the development of haematospermia and *Schistosoma* eggs in his own semen. Only a small number of case reports describe lesions of the male genital tract caused by the *Schistosoma* infection, some simulating malignancy or sexually transmitted disease. Male infertility from such lesions seems rare, but has never been well defined. Still, the presence of *Schistosoma* eggs in semen does cause inflammation and release of inflammatory cytokines. As a result, infected men constitute an additional risk factor for the transmission of HIV, which is a great burden in endemic areas.

Cough is one of the symptoms commonly seen in *Schistosoma*-infected non-immune persons presenting with acute schistosomiasis (Katayama fever). It is most likely mediated by an immunological response, not by the schistosomal migration through the lungs. Persistent bronchial hyperreactivity in our patient is probably a result of eosinophilic inflammation in the airway mucosa through hypereosinophilia, although histamine bronchial responsiveness was not tested. A chest X-ray one year after treatment did not show any abnormalities and there were no signs of asthma.

**CONCLUSION**

*Schistosoma* infections should be considered in any traveller showing seminal abnormalities who visited an endemic area during the previous year. In our patient, settlement of *Schistosoma* adult worms in the seminal vasculature seems more likely than migration of *Schistosoma* eggs. The semen returned to normal within weeks, demonstrating the efficacy of praziquantel in this compartment.

**REFERENCES**


