FUNICULITIS DUE TO SCHISTOSOMA HAEMATOBIUM: UNCOMMON DIAGNOSIS USING PARASITOLOGIC ANALYSIS OF SEMEN

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Abstract. Schistosomal funiculitis is one of the rare localizations of longstanding chronic infection with schistosomiasis. We report a case of a 24-year-old-man who experienced iliac fossa pain and weight loss eight years after his last trip to Mali. Clinical diagnosis of lesions in the genitourinary tract due to schistosomiasis and biologic analysis are required to diagnose this uncommon localization of schistosomiasis.

INTRODUCTION

Schistosomiasis (bilharziasis) is endemic in many areas of Africa and the Middle East and is second in importance to malaria among the major tropical diseases. In fact, 200 million people are infected worldwide with this disease, with 20 million seriously ill.

Schistosoma haematobium is responsible for schistosomiasis of the genitourinary tract. After cutaneous penetration, the larvae of S. haematobium develop in the veins of the human host before becoming adults and reaching sexual maturity. They mate in the veins of the bladder and pelvic plexuses where females begin to lay eggs. The urinary bladder and lower ends of the ureters and seminal vesicles, which have a rich venous circulation, are most commonly affected. However, other organs can be infected, and uncommon localizations of bilharziasis have been reported in the literature. Lesions in the central nervous system, spinal cord, appendix, lung, epididymis, and testis due to S. haematobium have been reported. However, only two cases have been reported in the spermatic cord and it is unclear whether this is because diagnoses have not been made, have not been reported, or have been overlooked.

The geographic distribution of schistosomiasis, the travel history of the patient, and hematuria constitute the common clinical description of infection with S. haematobium. In genital schistosomiasis, hematuria has been reported. Lesions caused by the infection or inflammatory processes in the prostate gland or seminal vesicles can explain this finding. The genitourinary tract may be the site of granulomatous response to the eggs and may explain longstanding chronic infection. Usually, these pathologic lesions are located in the ureters or bladder, and obstructions, hydronephrosis, and hydroureters can occur after several months if there is no treatment. If eggs are found in the urine, a definitive diagnosis can be made, but in the case of uncommon localization of schistosomiasis, both serologic tests and microscopic examination of uncommon specimens are useful for diagnosis.

We report the case of a man who had been living in France for several years who developed funiculitis due to S. haematobium, an isolated uncommon localization.

CASE REPORT

A 24-year-old man, a student at the University of Grenoble, reported to the Centre Hospitalier Universitaire de Grenoble on November 30, 2001 with inguinal pain he had experienced for three months. The patient had been in good health until the summer of 2001, when he began having pain in the testis and right iliac fossa, especially during sexual intercourse. He did not consult a physician and did not take any drugs for this pain.

A native of Mali, he came to France when he was 13 years old and his last trip to Mali was in 1993. In 1997 and 2000, his urine became red but he never experienced hemospermia or perineal discomfort. He did not have fever or acute symptoms such as headache, myalgia, or chills, but he lost five kilograms in the three months prior to consultation. He did not have hematuria once his symptoms began.

His temperature was 37.4°C. On physical examination, no skin lesion was present. The lungs and heart were normal. He showed no splenic tip, hypertrophy of the liver, or lymphadenopathy. The genitalia were normal, but examination of the right spermatic cord identified pain and a hardened area. The results of testis ultrasonography and genitourinary tract suprapubic ultrasonography were normal.

A diagnosis of right funiculitis was made and a laboratory examination showed a white blood cell count of 4,400 cells/µL with a normal differential count. His serum level of C-reactive protein was normal. The results of liver function tests were within normal limits, and levels of both α-fetoprotein and β-human chorionic gonadotropin were normal.

The urogenital signs, a childhood in Mali, and a history of hematuria suggested a diagnosis of schistosomiasis. Specific serologic results for S. haematobium were positive in an immunofluorescence assay (titer = 1:40), but microscopic examination of urine was negative. In addition, no lesion was found in the patient’s urinary tract by an intravenous urographic study, cystoscopy, and ultrasonographic study of the prostate gland and seminal vesicles. Funiculitis due to S. haematobium was a probable diagnosis, but a specimen containing eggs of S. haematobium was required to confirm this diagnosis. Semen was collected and numerous eggs of S. haematobium were found in this rarely used specimen. At this time, few eggs were present in the urine. Thus, a definitive diagnosis of right funiculitis due to S. haematobium was made and the patient was then treated successfully with antimicrobial (praziquantel) and anti-inflammatory (prednisolone) drugs.

DISCUSSION

In our hospital, travelers and immigrants from endemic countries are concerned about schistosomiasis. The case reported in this study is an uncommon localization of infection with S. haematobium. In addition, semen, a rarely used speci-
men for parasitologic studies, is necessary for a diagnosis of funiculitis due to *S. haematobium*. Indeed, in the case we describe here, semen was the specimen in which eggs of *S. haematobium* were found. Some eggs were found in the urine of this patient, but the specimen was collected at the same time as the semen and there were less eggs in the urine than in the semen. Therefore, we suggest that the semen probably contaminated the urine. However, other points regarding this case remain unclear.

First, it is not known why this localization of schistosomiasis is not often described in literature. Is it underreported or really rare? A recent review of bilharziasis of the genitourinary tract had not mentioned the involvement of spermatic cord. In our case, the patient did not have hematuria or hematospermia at the time of diagnosis. Lesions in the urinary tract, prostate gland, or seminal vesicles were not detected, and eggs were not found in the first sample of urine. This supports the hypothesis that in this patient, the spermatic cord is indeed the main and isolated location of the infection. We suggest that this localization is the consequence of an uncommon migration of female worms in pelvic plexuses before eggs were laid or an erratic migration of eggs from the site where females usually lay eggs (bladder, prostate gland, seminal vesicles).

As previously reported, prostate and seminal vesicles can be involved in schistosomiasis, and potential infertility problems could be related to infection with *S. haematobium*. The involvement of the spermatic cord suggests the same problem in our patient, and infertility could occur after this longstanding chronic infection. Searching for *S. haematobium* eggs in the semen of patients with a clinical history of schistosomiasis could lead to a definitive diagnosis and help prevent infertility problems.

Thus, we conclude that when clinicians are faced with a traveler showing hemospermia or perineal discomfort, parasitologic studies of semen are required. Furthermore, the case we report suggests that symptoms of funiculitis after traveling in tropical areas also require an investigation of semen and parasitologic studies. With the increased numbers of people who travel to tropical countries and who have contact with fresh water, the possibility of the genital organs being affected in travelers should not be underestimated, and a parasitologic examination of the ejaculate should be conducted.

Received July 1, 2003. Accepted for publication October 2, 2003.

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