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(CASE REPORT)

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A case report of urogenital schistosomiasis

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Abstract

Schistosomiasis, a parasitic disease widespread in tropical regions, is primarily caused by Schistosoma haematobium. Although rare in Western countries like France, it remains a major public health issue. Diagnosis relies on detecting the parasite's eggs in urine and bladder biopsies. Prevention involves awareness campaigns, annual treatment with praziquantel in high-prevalence areas, and treatment of infested waters. The case of a 17-year-old Senegalese girl presenting with lower urinary tract symptoms (LUTS) was reported. Analyses revealed the presence of schistosomiasis eggs in her urine. After treatment with praziquantel and corticosteroids, she developed acute urinary retention requiring catheterization. Further examinations confirmed urogenital schistosomiasis, necessitating surgical intervention.

Keywords: Schistosomiasis; Acute urinary retention; Uroscanner; Partial cystectomy

1. Introduction

Schistosomiasis, the second most prevalent parasitic disease worldwide after malaria with nearly 200 million people infected globally according to the WHO (2010), poses a significant public health problem in tropical regions worldwide. Urogenital schistosomiasis is classically caused by Schistosoma haematobium. In France and other Western countries, encounters with this "imported" disease are rare. Diagnosis is based on parasitological examinations by detecting eggs in urine and bladder biopsies. Prevention efforts rely on mass communication to the population, treatment of at-risk populations with annual single-dose praziquantel in high-prevalence rural areas, and treatment of infested waters with a molluscicide, niclosamide. We report the case of a patient presenting with lower urinary tract symptoms (LUTS) revealing urogenital schistosomiasis, in whom cystoscopy revealed a lesion suggestive of schistosomiasis.

2. Patient and Observation

A 17-year-old Senegalese girl with a history of obstructive lower urinary tract symptoms (LUTS) progressing for 2 months, complicated by acute urinary retention (AUR) 1 month ago, for which she was catheterized. Biological tests revealed schistosomiasis eggs on urinalysis, with the rest of the workup being normal (no signs of inflammation, normal renal function). The patient was treated with praziquantel (40 mg /kg) combined with corticosteroid therapy. A weaning trial was attempted after one successful week, but she presented to the emergency department in DAKAR for a second episode of AUR, with a preserved general condition. Clinical examination revealed a tender and palpable distended bladder with inability to urinate. The patient underwent bladder catheterization, yielding clear urine. Due to the recurrence of the same symptoms, an uroscanner was performed, revealing a hyperdense budding process on the anterior wall of the bladder. Cystoscopy showed a budding swelling developed on the anterior wall, the presence of eggs beneath the mucosa, and a "rice grain" cystitis indicative of urinary schistosomiasis. Clinical follow-up after 2 weeks revealed the resolution of LUTS, with good diuresis.

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3. Discussion

Infection in humans occurs when parasite larvae, released by freshwater snails, penetrate the skin during contact with infested water. Transmission occurs when individuals infected with schistosomiasis contaminate freshwater sources with their feces or urine containing parasite eggs, which then hatch. Within the body, the larvae develop into adult schistosomes. The adult worms live in blood vessels, where females lay their eggs. Some of the eggs are expelled in feces or urine, allowing the parasite to continue its life cycle. Others become trapped in tissues, causing immune reactions and progressive organ damage. The incubation period corresponds to the penetration of cercariae through the skin, causing itching and transient erythematous reactions for a few hours. The invasive phase involves the migration of schistosomula through the body, secreting antigens responsible for allergic reactions. Symptoms include a plateau fever with headaches, myalgias, arthralgias, diarrhea, urticarial rash, cough, and dyspnea. Urogenital schistosomiasis manifests as hematuria, initially microscopic then macroscopic, terminal or total. It may be almost painless or accompanied by hypogastric heaviness, lower back pain, dysuria, polyuria, or urinary burning. It is so common that it is considered "physiological" in Africa and rarely leads to consultation. Therefore, it can be postulated that "hematuria in a subject of African origin = urinary schistosomiasis" until proven otherwise. Infection with S. haematobium causes strictures and dilatations of the ureters leading to hydronephrosis resulting in pelvic pain or renal colic. Genital lesions in men include orchitis, epididymitis, funiculitis, prostatitis, or invasion of the seminal vesicles. Diagnosis is confirmed by detecting eggs in excreta or organ biopsy. In urine, S. haematobium eggs are found in the sedimentation pellet of urine, either in the morning upon waking or after physical exertion (jumping). Abdominal X-ray without preparation may reveal bladder calcifications: either partially, in an eggshell pattern, or complete, giving the image of a "porcelain bladder," a characteristic image of bilharzial bladder. Pelvic ultrasound shows irregular thickening of the bladder wall, sessile or pedunculated polyps, or vegetating tumors. Hypotonic pyelocaliceal cavities, irregularities in calyx wall, and sometimes hydronephrosis, with occasional ureteral dilation, are visible on renal ultrasound. Non-contrast computed tomography (CT) is the preferred examination to confirm bladder, ureter, and lower seminal tract calcifications. In our patient, CT revealed a hyperdense budding formation located on the anterior wall of the bladder (Figure 1,2).

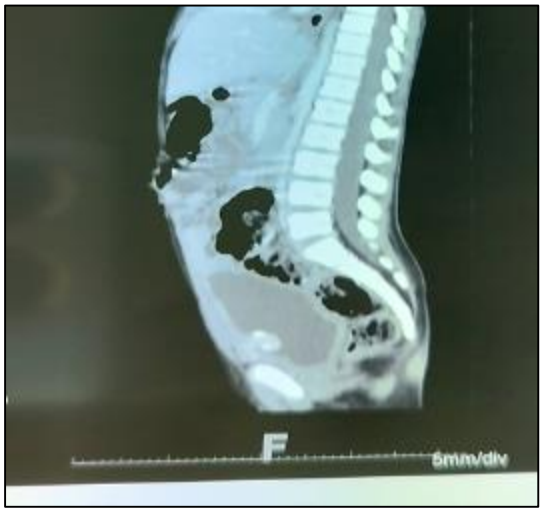

Figure 1 Sagittal section of a Uroscanner

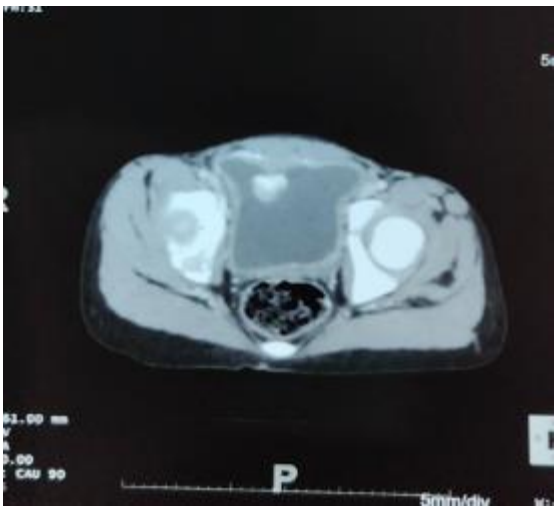

Figure 2 Transverse section of a Uroscanner scan

Cystoscopy, performed preoperatively, allows visualization of the responsible lesions in situ, classified into three stages: — erythematous bladder mucosa with fine white points resembling "powdered sugar" (corresponding to bilharzial granulomas); — congestive mucosa with erythematous lesions centered by a white "acne-like" center; — sessile or pedunculated raspberry-like tumor, bleeding upon contact, pseudo-membranous or ulcerative hemorrhagic cystitis resembling neoplasia. In our patient, cystoscopy revealed a budding lesion on the anterior wall of the bladder. Currently, the only drug used is praziquantel. This quinoline derivative, well-tolerated, induces intrahepatic migration and lysis of adult worms and also acts at the beginning of the invasion phase on young schistosomula, but is less effective at this stage. The dosage is 40 mg/kg as a single dose for S. haematobium. If there is tissue damage, therapeutic management should be adjusted based on the stage and grade of the tumor, as well as the patient's age, general condition, and symptoms. Intervention options include peroperative abstention, endoscopic resection, partial cystectomy with RUV, biopsy, and partial cystectomy, as in the case of our patient (figure 3,4).

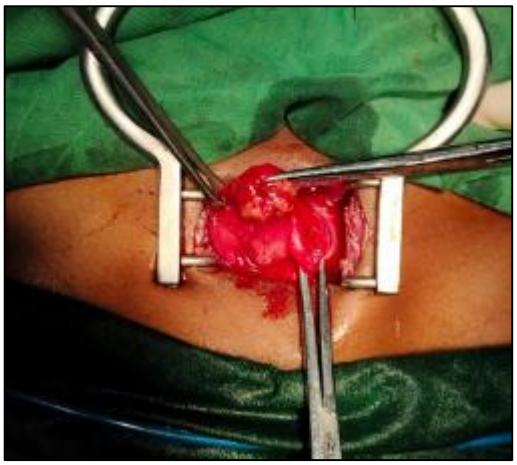

Figure 3 Partial cystectomy

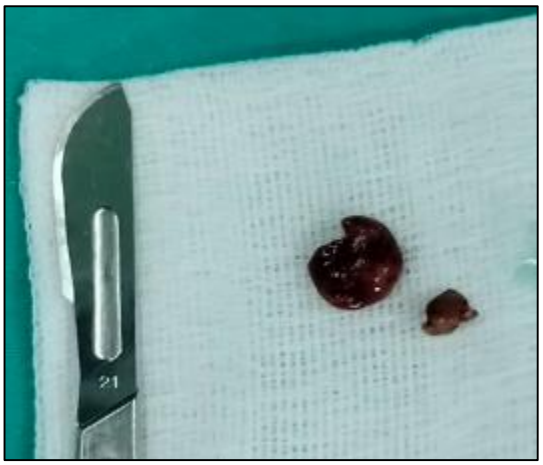

Figure 4 Specimen of a partial cystectomy

4. Conclusion

Urogenital schistosomiasis should be considered in the presence of lower urinary tract symptoms (dysuria, pollakiuria, hematuria), especially in endemic countries, but also in individuals originating from these areas, justified by the risk of contamination after a single exposure. Early treatment can prevent the occurrence of complications and the need for surgical intervention.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study

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