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Case Report

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Urinary schistosomiasis misdiagnosed clinically as Aadvanced bladder malignancy at a tertiary hospital in South Eastern Nigeria: A case report

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Abstract

Background: Schistosomiasis is an uncommon but important cause of haematuria, particularly in children. **Objective:** To present a case of urinary schistosomiasis misdiagnosed clinically as advanced bladder malignancy. **Case report:** A 19year old male Nigerian presented with a 5year history of intermittent terminal haematuria. Finding on cystoscopy was a tumor on the dome of the bladder extending to the upper part of the left wall of the bladder. With an impression of bladder cancer, this was abandoned and cystectomy carried out on the patient. An incidental finding of two sessile masses on the wall of the sigmoid colon; one measuring 2x1cm, the other 0.5cm in diameter was also made. The masses were resected and sent for histological diagnosis with a provisional diagnosis of bladder cancer with metastasis to the sigmoid colon. Histological diagnosis was schistosomal granuloma. **Conclusion:** Urinary schistosomiasis is an important differential of haematuria in children and adolescents.

Keywords: Schistosomiasis, Haematuria, Surgery, Misdiagnosis.

INTRODUCTION

Haematuria is a serious symptom of urological disease. Although the microscopic is as important as the macroscopic or gross form, patients often present only when they notice gross haematuria. The commonest causes of haematuria in adult Nigerians are nodular prostatic hyperplasia, bladder carcinoma, and carcinoma of the prostate[1]. An uncommon but important cause in this age group is schistosomiasis accounting in some studies for as much as 12-14.2% of causes of hematuria [2-4]. However, in children and adolescents, schistosomiasis remains a major cause of haematuria [5,6].

CASE REPORT

A 19 year old male presented at a tertiary hospital in south eastern Nigeria with a 5 years history of intermittent terminal hematuria which occasionally occurs in clots. There were also dysuria and penile, suprapubic and left iliac fossa pain. He was apparently well until a few months after a deep swim in a river when he was 14 years of age. Physical examination findings were essentially normal. A preliminary diagnosis of urinary tract infection (UTI) to rule out schistosomiasis made.

Full blood count results were as follows: PCV- 39%; WBC- 8.7x109/L; Neutrophils- 38%; Lymphocytes- 60%, Eosinophils- 02%. Erythrocyte sedimentation rate and Prothrombin time were normal. Genotype was AA. Urinalysis showed blood- ++; other parameters were normal. Urine m/c/s showed only 3-4 pus cells/ hpf and yielded no bacterial growth. Cytology of urine was negative for malignancy. Serum electrolyte/ urea/ creatinine values were normal. Intravenous Urogram (IVU) showed dilated distal ureters with surrounding haloes giving the so- called cobra- head appearance. The IVU diagnosis was bilateral pseudo ureteroceles due to schistosomiasis, to rule out bladder tumor. Abdominal ultrasound and Chest x-ray were normal.

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Based on these, the patient was commenced on praziquantel and levofloxacin and prepared for cystoscopy. Finding on cystoscopy was a tumor on the dome of the bladder extending to the upper part of the left wall of the bladder. Attempt at biopsy led to significant hemorrhage. With an impression of bladder cancer, this was abandoned and patient booked for partial cystectomy.

At operation for the cystectomy, there were intraluminal tumor masses seen on the dome of the bladder extending to the left side of the bladder. An incidental finding of two sessile masses on the wall of the sigmoid colon; one measuring 2x1cm, the other 0.5cm in diameter was also made. The masses were resected with 2cm margin and sent for histological diagnosis with a provisional diagnosis of bladder cancer with metastasis to the sigmoid colon.

Examination of routinely stained hematoxylin and eosin slides from both sites (bladder and sigmoid colon) showed numerous ova of Schistosoma hematobium in a fibrotic background containing numerous eosinophil polymorphs.

The patient is currently on follow up.

DISCUSSION

After malaria and intestinal helminthiasis, schistosomiasis is the third most devastating tropical disease in the world, being a major source of morbidity and mortality in developing countries. Recent World Health Organization (WHO) reports estimate that at least 240 million people, 85% of who live in Africa, are infected with schistosomiasis. Of these, 120 million are symptomatic, with 20 million having severe clinical disease. More than 200,000 deaths per year are due to schistosomiasis in sub- Saharan Africa[7]. At-risk persons include those who live in or travel to areas where schistosomiasis occurs and who come into contact with fresh water where the appropriate type of snail intermediate host is present. Women washing clothes in infested water are at risk. Hygiene and playing in mud and water make children vulnerable to infection. In endemic areas the infection is usually acquired as a child. Exposure to infection can start in utero. In fact, approximately 10 million women in Africa have schistosomiasis during pregnancy, schistosomiasis has been detected in the placenta and newborns have been diagnosed with the disease, thus confirming congenital infection[8]. The risk of infection is highest among those who lived near lakes and rivers. Males have a higher incidence, most likely due to increased exposure to infected water via bathing, swimming, and agriculture activities. This agrees with the presented case. The intensity and prevalence of infection rises with age and peaks usually between 10 and 19 years of age. The age of our patient also falls within this range. In older adults, no significant change is found in the prevalence of the disease, but the parasite burden decreases. The lower prevalence in adults is possibly due to partial immunity and decreased exposure to infected water.

Schistosomiasis is due to immunological reactions to *Schistosoma* eggs trapped in tissues. Antigens released from the egg stimulate a granulomatous reaction comprised of T cells, macrophages, and eosinophils that results in clinical disease. This granulomatous inflammation causes nodules, polypoid lesions as our patient had, and ulcerations of the lumen of the ureter and bladder, which results clinically in urinary frequency, dysuria and terminal haematuria[9].

S hematobium only rarely causes intestinal or liver disease with dyspepsia, flatulence, abdominal pain, diarrhoea, and dysentery.

Urinary excretion of eggs is not uniform. The urine is most likely to be positive for *S hematobium* between 10AM-2PM. Urine microscopy was negative for the parasite in this case, even though it cannot be ascertain whether the urine sample was collected within the above time frame.

Though urine culture yielded no growth in our case, a *Salmonella* urinary tract infection should always make the clinician suspect schistosomiasis.

Acute illness is often associated with eosinophilia in the blood and tissues. With chronic illness, peripheral eosinophilia may be minimal or absent while tissue eosinophilia persists. This may explain the absence of eosinophilia in our patient.

Cystoscopy may be necessary to obtain mucosal biopsy for diagnosis and to assess complications such as bladder cancer. Bladder mucosal biopsy is effective for visualizing eggs when urine samples are negative, or in light infection. Obtaining multiple biopsies and crushing them between slides increases egg-detecting sensitivity.

Praziquantel is the treatment of choice for all species of schistosomiasis. Cure rate ranges from 65-90% after a single treatment. Clinical studies show that arthemether,which is used as an antimalarial treatment, is also active against all 3 major schistosome parasites (mainly schistosomula) [10]. In addition, the combination of artemether and praziquantel can kill schistosomula during the first the weeks of infection and is synergistic in killing adult worms.

CONCLUSION

Government and concerned bodies must take steps to control schistosomiasis in endemic areas through population-based chemotherapy, providing a safe water supply, and health education, while every effort must be made by clinicians to exclude schistosomiasis as a cause of haematuria in children and adolescents before malignant pathologies are entertained and unnecessary heroic surgeries undertaken.

Conflict of interests

The authors have none to declare.

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