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Ultrasonographic Appearance of Urinary Bladder Schistosomiasis in an Adolescent Male: A Case Report

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ABSTRACT

Schistosomiasis is a disease predominantly caused by Schistosoma haematobium particularly in endemic areas with ultrasound identified as a valuable tool in its identification.

The features of urinary bladder schistosomiasis may include bladder wall thickening, polypoid lesions or masses, bladder wall calcification, reduced bladder capacity, bladder mass mimicking malignancy, hydroureter and hydronephrosis, echoes and debri with strands in urine.

Urinary bladder schistosomiasis is diagnosed by detecting the eggs of Schistosoma haematobium in urine parasitologically. The use of ultrasound is for assisted diagnosis, monitoring treatment and detecting complications.

This is an 18-year-old male patient who was referred from a health facility for abdominal and pelvic ultrasound on account of dysuria, increased frequency of micturition, passage bloody urine for a period of more than 1 year.

The ultrasound demonstrated a urinary bladder with circumferential wall thickening of about 12mm, circumferential wall calcification, and multiple areas of mucosal thickening with multiple mucosal pedunculated polys measuring between 10-12mm in length. Multiple mobile echoes were also noted in urine most likely hematoma. The kidneys and both ureters appeared normal.

The patient had a laboratory report confirming the presence of eggs of Schistosoma hematobium in urine. The presence of the clinical history, laboratory report and ultrasonographic features prompted the diagnosis of urinary bladder schistosomiasis.

We present a case of urinary bladder schistosomiasis with classical ultrasonographic features in an 18-year-old male.

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KEYWORDS:
Urinary Bladder, Ultrasound, Schistosomiasis, Bladder wall.

INTRODUCTION

Schistosomiasis is an important public health problem in Africa and Middle East especially from Schistosoma haematobium[1]. The adult worms are located within the venous plexus of the urinary bladder and morbidity is caused by deposition of the eggs in and around the urinary tract causing inflammation and lesions[1].

Schistosomiasis is endemic in tropical and subtropical areas and it's becoming more prevalent in temperate non-endemic countries due to immigration and international travels, early identification and treatment are necessary to avoid concomitant grave sequelae like bladder cancer, hydronephrosis resulting to renal failure and reproductive complications[2].

Schistosomiasis affects more than 207 million people in endemic areas, of which about 85% reside in Africa, and responsible for about 200,000 deaths yearly from the infection and complications like urinary bladder carcinoma, renal failure and haematemesis as reported by World health Organization[2,3].

Schistosoma infection is clinically divided in to two main diseases; these are the urogenital form caused by S. haematobium and the hepatointestinal form caused by S.

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mansoni, S. japonicum, S. mekongi, S. intercalatum, and S. guineensis[2,3,4].

Bladder involvement in urinary schistosomiasis is frequent, once the organism is deposited, this triggers a granulomatous inflammatory reaction at the submucosal level of the bladder base leading to haematuria, while chronicity leads pseudopolyps, calcifications, bladder ulcers and fibrosis which are essential steps in squamous metaplasia or leukoplakia, leading to formation of squamous cell carcinoma[2,5].

Clinically, genitourinary schistosomiasis may be asymptomatic for years, but may present early with dermatitis due to skin penetration, bronchopulmonary and gastrointestinal manifestations, associated weight loss, fever, dysuria, suprapubic pain, haematuria and haemospermia(lower urinary tract symptoms) mimicking cystitis and prostatitis[2,5,6,7,8].

Ultrasound in vast majority of cases is regarded as a useful tool for the identification of morbidity associated with infection by S. haematobium in endemic areas; some of the features are bladder wall thickening, bladder polyps, bladder wall calcification, ureteric dilatation and hydronephrosis[9].

CASE REPORT

This is an 18-year-old male patient who was referred from a health facility for abdominal and pelvic ultrasound on account of dysuria, increased frequency of micturition, passage bloody urine for a period of more than 1 year.

On examination, an adolescent male oriented, conscious and alert, not dehydrated, mildly pale, anicteric, acyanosed and not malnourished

The ultrasound demonstrated a urinary bladder with diminished volume, circumferential wall thickening of about 12mm, circumferential wall calcification, and multiple areas of mucosal thickening with multiple mucosal pedunculated polys measuring between 10-12mm in length. Multiple mobile echoes were also noted in urine most likely hematoma (Figure 1).

The kidneys and both ureters appeared normal. The patient had a laboratory report confirming the presence of eggs of Schistosoma hematobium in urine.

The presence of the clinical history, laboratory report and ultrasonographic features prompted the diagnosis of urinary bladder schistosomiasis.

We present a case of urinary bladder schistosomiasis with classical ultrasonographic features in an 18-year-old male.

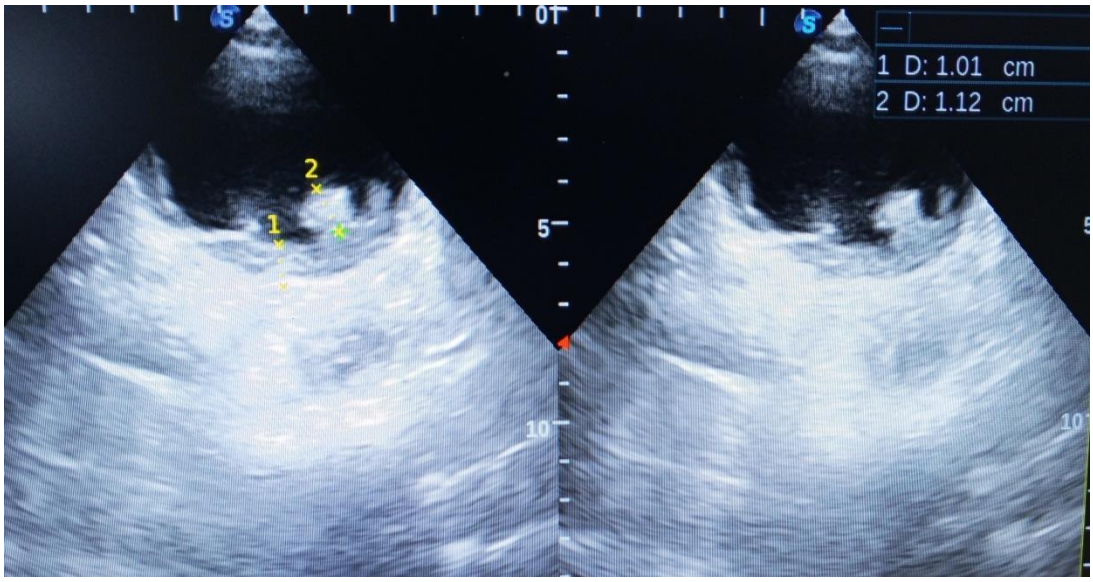

Figure 1: Ultrasonogram of the urinary bladder demonstrating a diminished bladder, with circumferential wall thickening, wall calcification, mucosal thickening, polypoid masses projecting in to the bladder lumen with suspended mobile echoes most likely from haematoma and infective process.

DISCUSSION

Schistosomiasis is an important public health problem in Africa and Middle East especially from Schistosoma haematobium[1]. The environment in which the case under review resides is in Africa, thereby conforming to this literature.

The adult worms are located within the venous plexus of the urinary bladder and morbidity is caused by deposition of the eggs in and around the urinary tract causing inflammation and lesions[1]. The characteristic changes demonstrated in the urinary bladder of the index case are consequent of deposition of the eggs of S. haematobium within the bladder wall, thereby conforming to this literature.

In schistosomiasis, early identification and treatment are necessary to avoid concomitant grave sequelae like bladder cancer, hydronephrosis resulting to renal failure and reproductive complications[2]. The case under review though had some features of UB schistosomiasis, some of the

complications like hydronephrosis and renal failure are yet to set in, the patient had been advised to consult a urologist for expertise management.

Schistosoma infection is clinically divided in to two main diseases; these are the urogenital form caused by S. haematobium and the hepatointestinal form caused by S. mansoni, S. japonicum, S. mekongi, S. intercalatum, and S. guineensis[2,3,4]. The case under review had the eggs of S. haematobium in urine, therefore belonging to the urogenital form, agreeing to these literatures.

Bladder involvement in urinary schistosomiasis is frequent, once the organism is deposited, this triggers a granulomatous inflammatory reaction at the submucosal level of the bladder base leading to haematuria, while chronicity leads pseudopolyps, calcifications, bladder ulcers and fibrosis which are essential steps in squamous metaplasia or leukoplakia, leading to formation of squamous cell carcinoma[2,5]. The case under review had features of chronicity which are polyps, wall calcification and fibrosis, thereby conforming to these literatures.

Clinically, genitourinary schistosomiasis may be asymptomatic for years, but may present early with dermatitis due to skin penetration, bronchopulmonary and gastrointestinal manifestations, associated weight loss, fever, dysuria, suprapubic pain, haematuria and haemospermia(lower urinary tract symptoms) mimicking cystitis and prostatitis[2,5,6,7,8]. The patient under review had most of these features like haematuria, suprapubic pain and features of cystitis, thereby agreeing to these literatures.

Ultrasound in vast majority of cases is regarded as a useful tool for the identification of morbidity associated with infection by S. haematobium in endemic areas; some of the features are bladder wall thickening, bladder polyps, bladder wall calcification, ureteric dilatation and hydronephrosis[9]. The case under review had ultrasonography of the UB, and most of the aforementioned features were demonstrated, thereby contributing to the diagnosis of schistosomiasis, these are in agreement with the aforementioned literature.

In schistosomiasis, chemotherapy with praziquantel (PZQ) has been the cornerstone of the disease control over the last two decades and being the only drug for the treatment of over two hundred million patients worldwide[10], the case under review is no exception, as he might also benefit from same treatment by a specialist urologist.

CONCLUSION

Urinary bladder schistosomiasis is endemic in our environment, once suspected; ultrasound examination with urine microscopy will establish the diagnosis, enabling prompt intervention to prevent morbidity and complications associated with the disease.

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