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Case Report

Urogenital Schistosomiasis in Libya, A Case Report and Evaluation of the Current Situation

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Abstract

Urogenital Schistosomiasis is a parasitic worm disease caused by *Schistosoma haematobium* and transmitted through the penetration of the human skin by swimming infective larva (Cercaria). Here, we report a new sporadic case of Urinary schistosomiasis in Ubari city in South-West Libya. A 25-year-old male was presented with a history of hematuria, backpain, abdominal, and kidney pain since 2017. The diagnosis of urogenital Schistosomiasis was confirmed by microscopic identification of terminal-spined schistosome eggs and red blood cells in urine samples. The patient was treated with a single dose of 40 mg/kg Praziquantel. By follow-up, a complete recovery of urinary symptoms was observed with no evidence of schistosome eggs in urine. In conclusion, the local health authorities should take proper measures to establish new elimination programs of schistosomiasis, and to increased awareness of this especially in old endemic areas where reemerging of schistosomiasis is most likely.

Keywords: Enzyme-linked immunosorbent assay, *Schistosoma* IgG, Ubari-Libya, urogenital schistosomiasis

INTRODUCTION

Schistosomiasis (Bilharzia) is a parasitic disease characterized as either intestinal or urogenital, depending on where the adult flukes are located. *Schistosomes* require the presence of suitable aquatic intermediate snail hosts to complete their life cycle.^[1] The species *Schistosoma mansoni* and *Schistosoma japonicum* live in venules surrounding the gut, progressively enlarge the liver and spleen, and cause intestinal damage, and portal hypertension. While *Schistosoma haematobium* lives in the vessels around the urogenital system and progressively causes damage to the bladder, ureters, and kidneys. The adult worm pairs produce eggs that migrate through the surrounding tissue to be excreted primarily in the feces or urine.^[2] *S. haematobium* infection is responsible for the majority of deaths in the world. The disease is found in Africa and the Middle East.^[3]

Libya has an old history of Schistosomiasis infections. The first reported case was in 1925 in Ghat district followed by another report in 1932 from Wadi Shati in Fezzan region in Southern part of Libya.^[4] Both *S. haematobium* and *S. mansoni* are endemic in Libya. The prevalence has been estimated at 5% since 2003.^[5] The country is dominated by vast tracts

of hot, dry, and sandy areas with high-salinity water. These conditions are not favourable to widespread colonization of the snail intermediate hosts, so their distribution is sporadic.^[6]

The snail intermediate hosts for *S. haematobium* in Libya are *Bulinus truncatus* and *Bulinus globosus*. These hosts were first identified in the Ghat district in 1957 with no human infection being recorded for many years. However, *B. truncatus* is known to be endemic in one area in the Alfogaha district and *S. mansoni*, transmitted via *Biomphalaria alexandrina* snails, is currently locally endemic at the Taourga district.^[7,8]

Despite the low endemicity of the disease in Libya and the WHO elimination programs, there are still some new sporadic cases that appear from time to time. In this report, we discuss a case of 25-year-old Libyan male resident in Ubari city at

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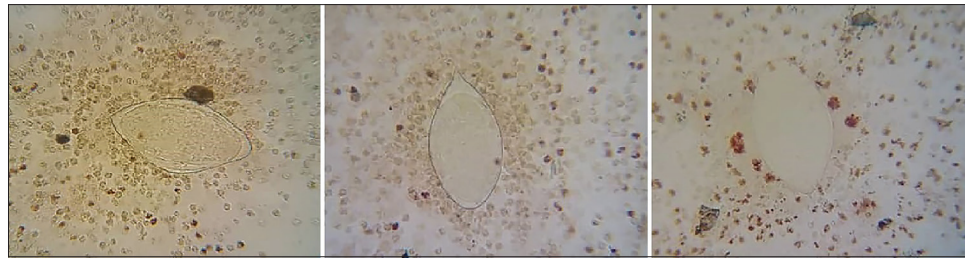


Figure 1: Three eggs of *Sichistosoma hematobium* with a terminal spine in urine sample

the Southwest of Libya, who was diagnosed with urogenital schistosomiasis caused by *S. haematobium*.

CASE REPORT

A 25-year-old man living in Ubari city in Sebha district at the South-Western of Libya, was referred to Khadra Hospital, in Tripoli in 2017. The patient presented with a history of hematuria, kidney pain, and abdominal and back pain. The patient had a history of swimming in Gaberoun Lake near Ubari city. Complete blood count showed normal white blood cell count ($7.9 \times 10^3/\text{ul}$), hemoglobin level of 11.7 g/dl, and platelet counts of $236 \times 10^3/\text{ul}$. Renal function tests were normal. Chemical examination of urine with urine strip showed 3+ blood and 3+ proteins. Diagnosis of urinary schistosomiasis was done using microscopic examination of urine which showed few eggs of *S. haematobium* with the characteristic terminal spine, with the presence of numerous red blood cells, 50–70 pus cells, and few epithelial cells were seen [Figure 1]. The diagnosis was confirmed with Schistosoma IgG enzyme-linked immunosorbent assay test. The patient was treated with a single dose of 40 mg/kg Praziquantel. Two month later a complete recovery of urinary symptoms was observed with no evidence of schistosome eggs in urine.

DISCUSSION

Schistosomiasis remains a public health problem in several parts of the world, particularly in Africa, where 92% of all the populations requiring preventive chemotherapy for schistosomiasis.^[9] Treatment of schistosomiasis by administration of the anti-helminth drug Praziquantel is the main control strategy employed in endemic areas.^[10] The disease has been eliminated from many countries in the region including Iran, Lebanon, Morocco, and Tunisia. However, low endemicity has been recently described in Egypt, Iraq, Jordan, Libya, Oman, Saudi Arabia, and Syria.^[5] The prevalence of *S. haematobium* and *S. mansoni* in focally endemic areas in Libya has been estimated at 5% in 2003.^[7] In 1990, Libya started control program which included screening and treatment of the whole population with praziquantel chemotherapy, snail control, and health education and as of 2007, the disease prevalence in the community declined to 3%. Whole population treatment and biological control of snails were planned to continue on an annual bases until disease elimination is achieved.^[7,8] However, information and

reports are scant and inconsistent on overall schistosomiasis trends in Libya. Moreover, as of 2013, Libya did not require the use of preventative praziquantel chemotherapy to treat schistosomiasis as peer WHO PCT databank.^[11] Clinically, Haematuria and proteinuria can resemble many kidney diseases like kidney infection, bladder or kidney stones, cancer or glomerulonephritis. Urogenital Schistosomiasis was not suspected in our patient; hence, urologists should remember this rare clinical condition for proper diagnosis and management of this infection.

Schistosomiasis has been restricted to a few focal areas and oases in the South-Western regions of Libya for a long time. The incidence of this infection has been declining since 2013 and preventative chemotherapy was stopped.^[7] However, new sporadic cases have been reported recently. Praziquantel remains the first choice for the treatment of all forms of schistosomiasis and a single dose of 40 mg/kg was sufficient to quire urogenital schistosomiasis.^[12]

CONCLUSION

Urogenital schistosomiasis caused by *S. haematobium* remains hypoendemic in some areas of Libya. This case is one of the new sporadic cases emerging in the country. However, control program and surveillance system to detect and control these cases are crucially needed. This can be achieved by removing the adult worms by Praziquantel chemotherapy, control of the snail intermediate host, health education to change human behaviors, and providing safe and clean water supplies. Schistosomiasis should be remembered in the differential diagnosis of kidney and bladder diseases.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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