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Case Report
Urinary Schistosomiais in Sebha, Libya

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Abstract A 13 years old Libyan male Child was admitted to the Pediatric Department, Sebha medical Center in September 2017. The patient lives in Sebha- AL-Menshia, he presented with *haematuria*, loin pain and fever. An Ultrasound examination was normal. Examination of urine of patient showed 2 to 3 eggs of *S. haematobium* per low-power (10X) field with pus cells. The cause of *haematurie* in this patient is due to eroding of blood vessels of urinary bladder by the terminal spine of eggs of parasite. The patient has never been abroad.

Introduction: *Schistosomiasis* (bilharziasis) being the second after malaria most common infectious disease worldwide. An estimated 207 million people may have *schistosomiasis* worldwide, almost 250,000 die, mostly in consequence of portal hypertension. The disease is endemic in tropical and subtropical areas. It is most prevalent in sub-Saharan Africa, where more than 90% of those infected live. *Schistosomiasis* is a disease caused by parasites belonging to the *Schistosoma* group. An infection with *Schistosoma* was first described in ancient Egypt. Several types of *Schistosoma* are human pathogens, such as *S. mansoni*, chiefly occurring in South America, Central Africa and the Near East. It mostly attacks the gastrointestinal tract and the liver. *S. haematobium,* is endemic in Africa (predominantly in Egypt) and in the Near East, and most often involves the urinary bladder; *S. japonicum* encountered in the Far East and Philippines, as well as *S. mekongi* and *S. intercalatum is* observed in Africa and Indochina. The first recorded case of schistosomiasis in Libya dates back to 1925. Focally endemic in Libya *are Schistosoma haematobium* and *S. mansoni.* Prevalence has been estimated at 5% since 2003. The geography of the country, dominated by vast tracts of dry, sandy areas with high-salinity water, is not conducive to widespread colonization of snail intermediate hosts, so their distribution is patchy.

S. haematobium, transmitted via the snail intermediate hosts *Bulinus truncatus* and *B. globosus* in Libya, was first identified in Ghat in 1957, but no human infection was recorded for many years. *B. truncatus* is known to be endemic in Alfogaha. More recently, Darnah has been identified as a localized area of risk for *S. haematobium. S. mansoni*, transmitted via *Biomphalaria alexandrina* snails, is currently locally endemic at the Taourga oasis. In Sebha 2007 and 2017 also *S. haematobium*.

Case Report:
In September 2017, the patient was admitted to pediatric ward, due to loin pain, hematuria, and fever. Laboratory tests aimed at detecting *Schistosoma haematobium* eggs and other diagnostic indicative tests of a parasitic infection, such as peripheral blood eosinophil level, were negative.

Parasitological examination:
10 ml of urine was collected in a clean dry container. The urine contained blood and appeared red. 10 ml of well-mixed urine was transferred to a conical tube and centrifuged to sediment the *schistotome* eggs. Centrifuge to greater force was avoided because this can cause the eggs to hatch. The supernatant fluid was discarded, and all the sediment was transferred to a slide and covered with a glass cover. The entire sediment was microscopically examined. The number of eggs was counted in the preparation, and the reported number was per 10 ml of urine. In the early stages of urinary *schistosomiasis*, the egg count is an indicator of the severity of the disease.

Discussion:
Schistosomiasis (snail fever or bilharzia) is an infectious tropical illness that people can develop when they come into contact with fresh water contaminated by certain snails carrying the disease-causing parasites, which penetrate the skin and spread through the body. Infection primarily affects the urinary or intestinal system, causing chronic ill-health and in some cases death. Poor hygiene and water-based activities (such as swimming and fishing) make school-age children the most vulnerable, with infection responsible for malnutrition, absenteeism, and impaired intellectual development. Children suffering from persistent and severe *schistosomiasis* infections are also likely to have chronic irreversible diseases later in life, such as scarring (*fibrosis*) of the liver, bladder cancer, or kidney failure.
Schistosomiasis is a parasitic disease that leads to chronic ill-health. People infected with schistosomes expel the parasite's eggs in their faeces or urine depending on the type of the infecting parasite. *Schistosomiasis* is characterized as either intestinal or urogenital, depending on where the adult flukes are located. In intestinal *schistosomiasis*, adult worms occupy mesenteric veins, and their eggs pass into the lumen of the intestine and reach the faeces.
There are four species that cause intestinal schistosomiasis; *S. intercalatum*, *S. japonicum*, *S.*

mansoni and *S. mekongi*. *S. haematobium* causes urogenital *schistosomiasis*, and adult worms reside in veins draining the urinary tract. The eggs pass out of the body in the urine. In the Eastern Mediterranean Region, Somalia, Sudan and South Sudan remain the most endemic countries. The disease is considered eliminated in Islamic Republic of Iran, Lebanon, Morocco and Tunisia. Low endemicity has been reached in Egypt, Iraq, Jordan, Libya, Oman, Saudi Arabia and Syria. In Yemen, a project is being implemented by the Ministry of Public Health to eliminate *schistosomiasis* from the country. The project is funded by the World Bank, and supported by WHO and *Schistosomiasis* Control Initiative.

Summary:

The incidence of *Schistosoma* haematobium in Libyan population is not very common. Genitourinary *schistosomiasis* is produced by *Schistosoma* haematobium, a species of fluke that is endemic to Africa and the Middle East, and causes substantial morbidity and mortality in those regions. It may also be seen elsewhere, as a result of travel or immigration. *S haematobium,* one of the five fluke species that account for most human cases of *schistosomiasis,* is the only species that infects the genitourinary system, where it may lead to a wide spectrum of clinical symptoms and signs. In the early stages, it primarily involves the bladder and ureters. Later, the kidneys and genital organs are involved. It rarely infects the colon or lungs. A definitive diagnosis of genitourinary *schistosomiasis* is based on finding of parasite ova at microscopic urinalysis. Clinical manifestations and radiologic imaging features may also be suggestive of the disease, even at an early stage: Hematuria, dysuria, and hemospermia, early clinical signs of an established *S haematobium* infection appear within 3 months after infection. On imaging, fine ureteral calcifications that appear as a line or parallel lines on abdominopelvic radiographs and as a circular pattern on axial images from computed tomography (CT) are considered path on gnomonic of early-stage *schistosomiasis*. Ureteritis, pyelitis, and cystitis cystica, conditions that are characterized by air bubble-like filling defects representing ova deposited in the ureter, kidney, and bladder, respectively, may be seen at intravenous urography, intravenous ureteropyelography, and CT urography. Coarse calcification, fibrosis, and strictures are signs of chronic or late-stage *schistosomiasis*. Such changes may be especially severe in the bladder, creating a predisposition to squamous cell carcinoma. Genital involvement, which occurs more often in men than in women, predominantly affects the prostate and seminal vesicles. Drug administration using praziquantel have been implemented in the project which started in 2010.

References:

[1]- Lengeler C., Utzinger J. and Tanner M. (2002), *Bull World Health Organ,* 80(3): 235-242.

[2]- Zhou X.N., Yang G.J., Yang K, Wang X.H., Hong Q.B., Sun L.P., Malone J.B., Kristensen T.K., Bergquist N.R. and Utzinger J. (2008), *American Journal of Tropical Medicine and Hygiene,* 78(2):188–194.

[3]- Shope R.E. (1992) *Global Climate Change:Implications, challenges and mitigation measures, Ed. Majumdar, S.K., Kalkstein, L. S.,Yarnal, B., Miller, E.W., Rosenfeld, L.M. and Easton, P.A. The Pennsylvania Academy of Science,* 1992: 363-370.

[4]- Van der Werf M.J., de Vlas S.J., Brooker S., Looman C.W.N.,Nagelkerke N.J.D., Habbenma J.D.F., Engels D. (2003) *Acta Tropica*, 86(2-3):125-139.

[5]- Cheesebrough M. (2005) *District laboratory practice in tropical countries. 2 edn. Cambridge University Press: New York,* 236-239.

[6]- Blas B.L., Lipayon I.L., Tormis, L.C., Portillo L.A., Hayashi M. and Matsuda H. (2006), *Southeast Asian Journal of Tropical Medicine and Public Health.* 37(1): 26-32.

[7]- King C.H., Dickman K. and Tisch D.J. (2005), *Lancet*, 365(9470): 1561-1569.

[8]- Taylor M. (2008) *Bull World Health Organ,* 86(10): 738.

[9]- Nsowah-Nuamah N.N., Mensah G., Aryeetey M.E., Wagatsuma Y. and Bentil G. (2001), *American Journal of Tropical Medicine and Hygiene,* 65(5): 484-490.

[10]- Aboagye I.F. and Edoh D. (2009) *West African Journal of Applied Ecology,* 15: 4.

[11]- Wagatsuma Y., Aryeetey M.E., Nkrumah F.K., Sack D.A. and Kojima S. (2003) *Central African Journal of Medicine*, 49(1–2): 16–9.

[12]- Useh M.F. and Ejezie G.C. (1999) *Annal of Tropical Medicine & Parasitology,* 93(7): 711–720.

[13]- Zakhary K. (1997) *McGill Journal of Medicine,* 3: 93-101.

[14]- Yeboah S.K. (1981) *The problem of Bilharziasis transmission on River Boku, Kumasi, MSc. Thesis, KNUST Printing Press, Kumasi, Ghana.*1-77.

[15]- Clennon J.A., King C.H., Muchiri E.M., Kariuki H.C., Ouma J.H., Mungai P. and Kitron U. (2004), *American Journal of Tropical Medicine and Hygiene,* 70: 443-448.

[16]- Mbata T., Orji M. and Oguoma V. (2008) *The Internet Journal of Epidemiology,* 6(1).

[17]- Kloos H., Fulford A.C.A., Butterworth A.E., Sturrock R.F., Ouma J.M., Kariuki H.C., Thiongo F.W., Dalton P.R. and Klumpp R.K. (1997), *Social Science & Medicine,* 44: 949–968.

[18]- Okolie I. and Odaibo A.B. (1999) *Tropical Medicine & International Health,* l4(4): 308-315.

[19]- Agnew-Blais J., Carnevale J., Gropper A., Shilika E., Bail R. and Ngoma M. (2010), *Journal of Tropical Paediatrics,* 56(4): 247-253.

[20]- Chimbari M.J. and Chirundu D. (2003) *African Journal of Medicine,* 49(1-2):8-12.

[21]- Nmorsi O.P.G., Egwunyenga O.A. and Okholo O.E. (2001) *South-East Asian Journal of Tropical Medicine & Public Health,* 3(3): 570-574.

[22]- Yapi Y.G., Briet O.J., Diabate S., Vounatsou P., Akodo E., Tanner M. and Teuscher T. (2005), *Acta Tropica* 93(2): 201-211.

[23]- Kariuki H.C., Clennon J.A., Brady M.S., Kitron U., Sturrock R.F., Hoffman O., Hamburger J., Ouma J., Tosha S., Ndzovu M., Munga P., Pelligreni C., Muchiri E. and King C.H. (2004), *American Journal of Tropical Medicine and Hygiene,* 70(4): 443-456.

[24]- WHO (2002) World Health Organ Technical Report Series, 912: i-vi, 1-57.

[25]- Elderdery A., Eltoum M., Babiker A. and Hani B. (2008), Urological Cancer, 3(4): 18-19.