

Image Quiz: A Bladder Biopsy from a Child with Hematuria

Samir Kahwash

Department of Pathology and Laboratory Medicine, Nationwide Children's Hospital and The Ohio State University, Columbus, Ohio, USA

CLINICAL CONTEXT

Figure 1. Is an H&E stained section of a bladder biopsy taken from a child who presented with hematuria. The patient spent a few months at a

refugee camp by the Nile in Ethiopia before arriving in the USA.

QUESTION

What is your diagnosis?

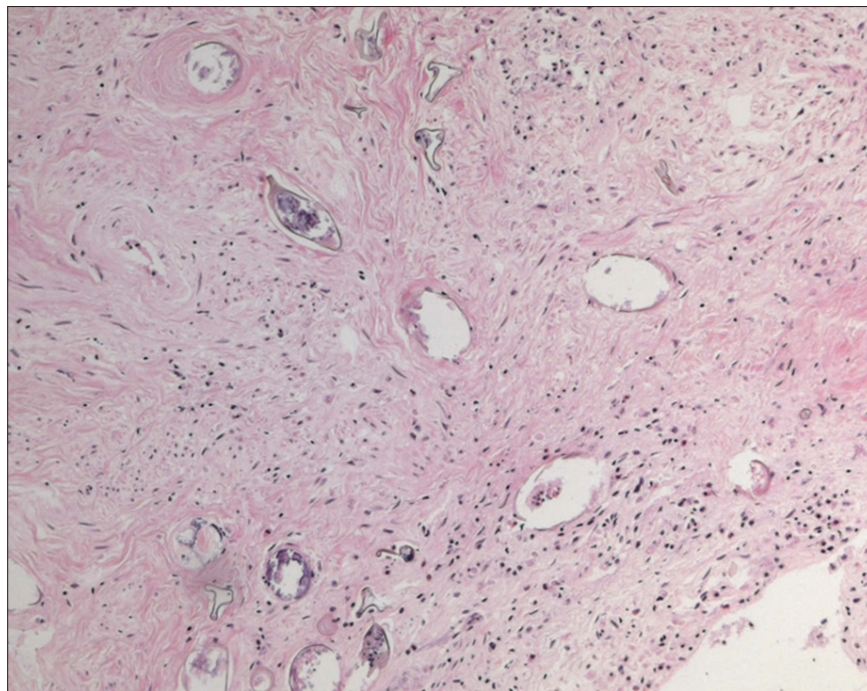


Figure 1: H&E stained biopsy of the bladder

Address for correspondence: Prof. Samir Kahwash, Department of Pathology and Laboratory Medicine, Nationwide Children's Hospital and The Ohio State University, Columbus, Ohio, USA. E-mail: samir.kahwash@nationwidechildrens.org

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ANSWER TO IMAGE QUIZ

The diagnosis is Schistosomiasis

Figure 1 featured a section from a fibrotic area of the bladder wall infested with eggs of *Schistosoma haematobium* highlighted by the arrows in the demarcated image below [Figure 2]. This parasitic infection is endemic to the Nile Valley from Ethiopia and Sudan and Egypt. Ancient archival material proves the prevalence of this disease there since the dawn of recorded history. The earliest case of human Schistosomiasis diagnosis (confirmed by immunologic ELISA method) was found in the mummified body of an Egyptian adolescent dating back to more than 5,000 years ago^[1]. In a study by Miller *et al.*, 15 out of 23 mummies tested showed evidence of schistosomiasis^[2]. Apparently, hematuria, likely due to schistosomiasis, was so prevalent in ancient Egypt that in a papyrus

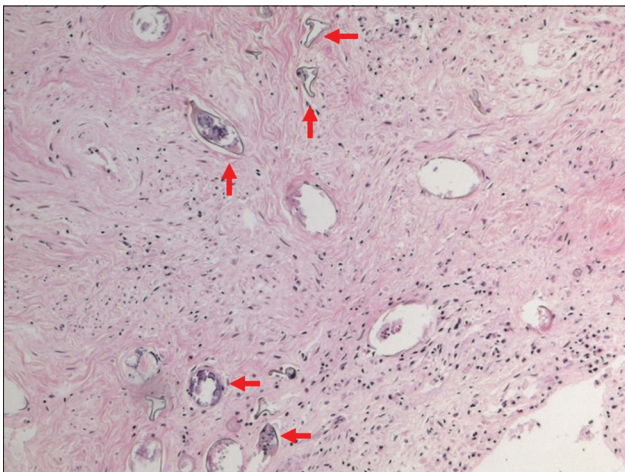


Figure 2: A representative section from bladder mucosa with arrows pointing to *Schistosoma* eggs in a fibrotic background. Note the terminal spine (arrowhead) that help separate *Schistosoma Haematobium* from *S. Mansoni* and *S. Japonicum*

dated to the Pharaonic era, a palace physician expressed concern if an adolescent boy reaches puberty and reported no blood in his urine; similar to the concern encountered in females reaching adolescent age with no sign of blood or menstruation!

Schistosomiasis (also known as Bilharzia) is one of the most prevalent parasitic diseases. *Schistosoma haematobium* is the prevalent species in Africa and the Nile valley. *Schistosoma Mansoni* is encountered – in addition to Africa- in South America, while *Schistosoma Japonicum* occurs in Japan, China and South East Asia. The eggs of these parasites are helpful in designating the species at the microscopic level. *Schistosoma haematobium* eggs are oval and show a terminal spike. *Schistosoma Mansoni* eggs are also oval but show a lateral spike. The eggs of *Schistosoma Japonicum* are smaller, round and show a very small lateral spike or no spike.

Author's contribution

None.

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Conflicts of interest

There are no conflicts of interest.

Compliance with ethical principles

Not required.

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1. Deelder AM, Miller RL, de Jonge N, Krijger FW. Detection of schistosome antigen in mummies. *Lancet* 1990;335:724-5.
2. Miller RL, Armelagos GJ, Ikram S, De Jonge N, Krijger FW, Deelder AM. Palaeoepidemiology of *Schistosoma* infection in mummies. *BMJ* 1992;304:555-6.

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