

## CASE REPORT

**Urinary Schistosomiasis Detected by Chance in India: A Case Report**

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**Abstract:**

Schistosomiasis is a parasitic trematode that is less commonly seen in India. The clinical manifestations range from acute, sub acute and chronic phases. A granulomatous type of lesion formed by *Schistosoma hematobium* in the lower urinary tract. We present a case of rare neglected tropical infection in this part of Dakshin Kannada. A 66-year-old man presents with history of irritative voiding symptoms, urgency, incontinence, and nocturia of 2 months duration. CT Urogram showed bladder wall thickening. Cystoscopy showed granuloma in the posterolateral wall of the bladder. Urine microscopy picked up *Schistosoma hematobium* eggs. Bladder biopsy showed chronic inflammatory type of lesion. This is a case of confirmed chronic granulomatous urinary schistosomiasis in a non-endemic region, and successfully treated. Clinicians should become aware of the existence of this parasite in few pockets in India.

**Keywords:** Schistosoma, Bladder Fluke, Vesicle Fluke, Schistosomiasis

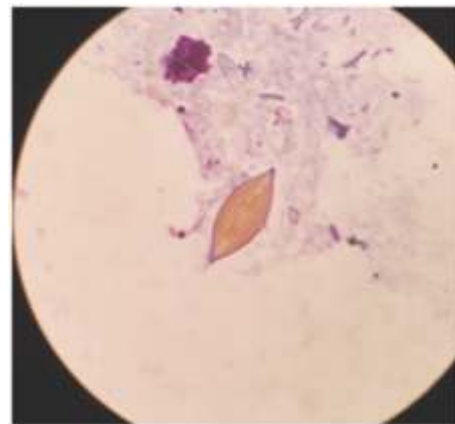
**Introduction:**

Schistosomiasis is one of the most important tropical parasitic disease caused by a trematode and is endemic to many parts of Africa, South America and Asia, affecting at least 262 million people [1-2]. Though incidence of human schistosomiasis in India is not clear, India is considered a non-endemic country for schistosomiasis. The reason for this is considered to be the absence of intermediate hosts of schistosomes affecting the humans in India [3]. The diagnosis is mainly by demonstration of *Schistosoma* eggs in

urine or stools [4]. We present a case of urinary schistosomiasis in voided urine cytology in an unsuspected patient in a non-endemic region in India.

**Case Report:**

A 66-year old man presented to urology outpatient department, Kasturba Medical College hospital, Mangalore, India with irritating voiding symptoms of urgency, urge incontinence and nocturia for two months. However, there were no obstructive voiding symptoms, fever or abdominal pain. Hemoglobin was measuring 9.8gm/dl. Urine cytology was performed as a routine procedure to rule out malignancy. 40 ml yellow coloured urine received in the lab was subjected to centrifugation and cytospin smear stained with Papanicolaou stain (Fig. 1).



**Fig.1: Papanicolaou Stain showing Eggs of *Schistosoma hematobium***

On wet mount microscopic examination, the smears showed presence of spheroid structures with semi-translucent outer shell. Characteristic terminal spines were identified (Fig. 2). The background showed the presence of occasional urothelial cells, few squamous cells, and few uric acid crystals. A repeat follow-up urine wet mount revealed eggs of schistosoma with a terminal spine.



**Fig. 2: Urine Wet Mount Examination revealed the Terminal Spine of *Schistosoma hematobium***

Thus a diagnosis of urinary schistosomiasis was rendered. Retrospectively, the patient provided the history of travel to middle-east, 20 years ago which is not significant for this episode. Hence this is a case coming from a non-endemic region. And also no reports of the Schistosoma infestation received from where he stayed. Following this diagnosis, the patient underwent imaging and cystoscopy. Computer tomography revealed thickening of the bladder wall. The cystoscopy showed trabeculations in the bladder. The patient was found to have double ureteric orifices on the left side. However, characteristic sandpaper patches seen in Schistosomiasis of urinary bladder were not seen. Cystoscopy guided biopsy was performed to rule out any insitu carcinoma component.

Histopathology revealed no carcinoma in situ or Schistosoma granulomas. The patient was started

on Praziquantal. On followup, he was treated successfully.

#### **Discussion:**

India is often considered as non-endemic for human schistosomiasis, though three endemic foci have been described which includes Gimvi village of Ratnagiri, Maharashtra, Tirupparankundaram village of Madras and Lahager village of Madhya Pradesh [3]. This is due to absence of the intermediate host which is snail of *Bulinus* species and also resistance of common snail to *Schistosoma hematobium*.

The clinical symptoms vary from intermittent hematuria, dysuria, abdominal pain to being asymptomatic. This depends on the stage of the infection which is classified into five stages by Smith. Stage 1 includes classic "Swimmers' itch" characteristic pruritic, papular rash. This may last for few hours post-exposure to few days. Stage 2 is a phase of acute illness occurring 4-8 weeks after exposure with clinical symptoms of fever, vomiting, diarrhoea and lymphadenopathy which is proposed to be due to allergic reaction to egg antigens. Stage 3 is when deposition of eggs into bladder wall occurs and is considered the active stage. This stage is also characterised by excretion of eggs in urine stages 4 and 5 and chronic phases of activity and inactivity respectively. The excretion of eggs in these stages was minimal [1]. The present case presented with urgency, urge incontinence and nocturia with no fever or lymphadenopathy. The urine also demonstrated presence of eggs making it a stage 3 infection.

The gold standard for the diagnosis of schistosomiasis is demonstration of eggs in the urine or rarely stools. The appearance of the eggs can be used to arrive at the diagnosis of the species. Typical eggs of *Schistosoma* are nonoperculate, embryonated eggs with transparent shell. The eggs are large and elongate with a lateral spine in *S.*

*mansoni*, whereas they are with terminal spine in *S. haematobium* and *S. intercalatum*. The eggs of *S. japonicum* and *S. mekongi* are round with small inconspicuous spine. The eggs could be confused to be an artefact especially in the presence of uric acid crystals. The identification of miracidium inside the eggs confirms the diagnosis [5]. The eggs in the present case were elongate with terminal spine.

The presence of eggs in urine can be identified on wet mount preparation or on Papanicolaou stain following centrifugation and cytopspin preparation [6]. The yield can be increased by collecting the urine samples between 10 a.m. and 2 p.m. making use of the property of diurnal excretion of eggs [1]. The demonstration of eggs is not limited to urine and stool specimens alone. They can be demonstrated in the urinary bladder, rectal biopsies as well as routine gynaecological cervical smear screening. The histopathology in biopsy specimen reveals granulomatous response around the eggs.

It is recommended to perform a cystoscopy and bladder biopsy if suspicious areas are identified to rule out squamous cell carcinoma of the urinary

bladder as *Schistosoma* is associated with it [7]. In the present case, CT was performed which revealed bladder thickening. This was followed by cystoscopy to rule out the presence of associated malignancy wherein no frank malignant areas were identified. A random bladder biopsy was performed to rule out carcinoma in situ which showed no evidence of carcinoma or granulomatous response. The absence of characteristic lesions on cystoscopy and granulomatous response on histopathology may be attributed to the early diagnosis of schistosomiasis on urine cytology which curtailed the time and costs associated with bladder carcinoma [8].

### Conclusion:

This case highlighted the importance of identifying the eggs of *Schistosoma* which is one of the neglected tropical diseases in voided urine cytology in unsuspected cases and differentiating it from the artefacts and crystals. This leads to early diagnosis and prevention of the sequelae of chronic infestation.

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