

“Wriggling parasite inside the bladder” : case report in Semarang, Indonesia

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Abstract

Introduction & Objectives: Finding "worm-like" parasite inside human bladder is rare. Most possible causes are parasitic helminths and myiasis. They may cause cystitis and/or urethritis symptoms : dysuria, haematuria, urethral discharge, and abdominal pain. The pathogenicity results from inflammation and toxin secreted by the larvae. Progressive and continuous bladder-wall necrosis may occur associated with larval growth and invasion. Knowing the causal parasite, its clinical manifestation, and the treatment is important to discuss.

Material & Method: We present a case report of 60 years-old-man experiencing moving suprapubic pain for a month, especially when urinating (dysuria), and had pinkish urine color. Surprisingly, during performing cystoscopic and bladder evacuation, 2 mm-long worm-like pinkish-white moving object was found inside the bladder. Bloody urine sample was sent to the laboratory but no adequate larvae found in the urine. It made the parasitologists difficult to mention what was the exact species of the larvae. There were pinkish color, microhematuria, and no suspected helminth's eggs found from urinalysis. The patient showed better improvements after surgery. His complaints gradually reduced, there was no more hematuria and dysuria.

Discussion: Urinary helminth infection leads to permanent urogenital problems, renal failure and malignancy. Echinococcosis creates cysts, Filariasis involves lymphatic system obstruction. Helminths lay their eggs inside the urinary organs and excrete them through urine. These characteristics were not found in this case. Myiasis was more relevant with the involvement of worm-like creature. Microhematuria was found on laboratory examination. Major symptoms were moving abdominal pain with no exact location and pinkish urine. Recommended treatment was to remove the larvae and treat associated infection with antibiotics. Afterwards, there was significant improvement from the patient's condition.

Conclusion: Knowing the urinary tract parasite is important for its treatment. Further studies to analyze the larvae, prevent its infection, and decide the best treatment are necessary.

Key Words: parasite, larvae, bladder, cystoscopy.

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INTRODUCTION

Finding a "worm-like" parasite inside the human bladder accidentally is a rare case. In such case, we may think about what possible creature it is. Based from literatures, two most possible causes are the presence of parasitic helminths or accidental myiasis.

Parasitic helminths of urinary system diseases such as schistosomiasis (bilharziasis) affects lots of people and often give rise to renal and lower urinary tract diseases. Echinococcosis and filariasis rarely affect urinary system. Schistosomiasis gives rise to the disease by finding its way into bladder veins in human who is final host. It leads to unintended consequences such as permanent urogenital problems, renal failure and malignancy because of its chronicity and tissue damage in the part of body it locates.¹

Beside the parasitic helminths, there is myiasis, a case with the contribution of *larvae*. Myiasis is defined as the infestation of vertebrate hosts with the larval or pupal stage (maggots) of certain diptera flies.² The diagnosis is categorized as obligate, deliberate egg-laying in or on tissues, or as facultative, opportunistic infestation by occupying wounds for larval incubation.³ The condition has been studied widely in humans, farm animals, and pets. Most of these forms are usually associated with poor general health and hygiene.⁴

The nose, ears, tracheostomy-wounds, face, oral cavity, and serous cavities are commonly involved.⁵ Genital and urinary myiasis is exceptionally rare, as sites usually protected by clothes, inaccessible for the flies.⁶ However, urinary myiasis may occur whilst human urinate in unsanitary toilets or at night in warm weather whilst peoples (usually females) sleeping without covering. Urogenital discharges, or soiled or unbathed pubic area may attract fly

oviposition around the external genitalia and urethral orifices, then hatched *larvae* may pass through urethra and enter the bladder.⁷

Myiasis caused by screwworm of *Chrysomya bezziana* fly has been widely distributed in Indonesia for years.⁸ However, there are more than 50 species of flies can induce myiasis in human.⁹ Genitourinary myiasis itself can be caused by large number of flies species, but *Fannia scalaris* flies are mostly reported as the most common agents for this problem. Other fly genera *Musca*, *Sarcophaga*, *Lucilia*, *Wohlfahrtia* or *Calliphora* were also associated with cases of urinary myiasis.⁶ There were few cases of urinary myiasis, caused by *Eristalis*, *Psychoda* and *Megaselia* flies.¹⁰ In urinary myiasis case, the *larvae* inside the urinary tract may produce symptoms of cystitis and/or urethritis that may include dysuria, haematuria, urethral discharge, and abdominal pain. Urinary myiasis may be associated with underline urinary tract pathology or surgical intervention. The pathogenicity results from inflammation and toxin secreted by the *larvae* which prevents healing. Progressive and continuous necrosis of bladder wall may occur associated with larval growth and invasion.⁷

CASE REPORT

A 60 years-old-man came to our emergency unit, experiencing lower abdominal pain for a month. There was no exact location of the pain since it changed continuously. The pain was getting worse in the latest 3 days especially in *suprapubic* area when the man was urinating. The man also admitted having pinkish urine color. He had diabetes and consumed Metformine everyday. His other past medical histories were good (no urinary stones or infections). There was no allergic experience in this patient. He worked as a gardener and seemed to have medium to low economical condition.

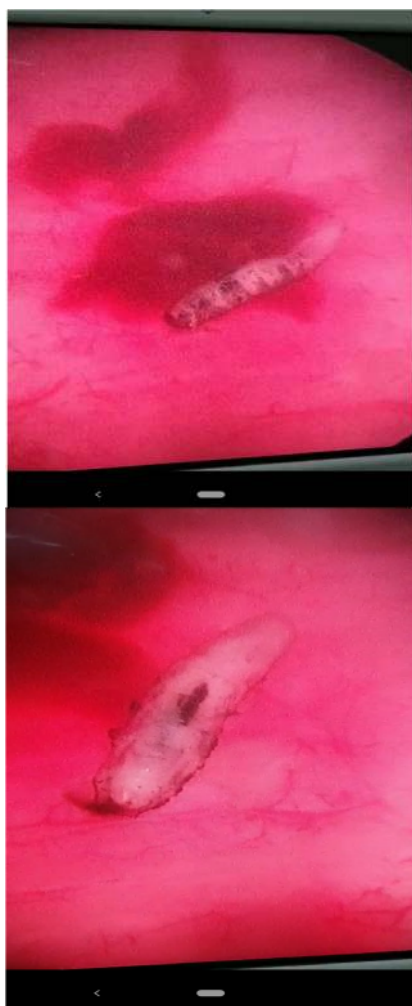


Figure 1. The "wriggling larvae" viewed during cystoscopy

From physical examinations, his vital signs and hemodynamic were normal, but there was suprapubic pain, especially when urinating (VAS 4/10). There was no scrotal and legs swelling. No mass palpated in abdomen and genital area. The laboratory parameters: Urea (43.7), Creatinine (0.83), Hemoglobin (12.8), Leucocyte (7700), Calcium (1.98), blood glucose (142 mg/dl), HbsAg (-), and the other parameters were normal. Electrocardiography (ECG) was normosinus rhythm. After consulting to the urologist, the patient was asked to undergo a plain abdominal x-ray photo and that

was found an image of radioopaque stone in the right abdominal cavity in the L-3 level. There was a suspicion of left nephrolithiasis in this patient.

The patient was then treated with intravenous ceftriaxone, analgesic ketorolac, ranitidine, gluconate calcium, and tranexamic acid injection. Urinary Catheter was inserted and there was about 600 cc of "bloody urine" excreted.

Because of the remaining pain (VAS 4/10), cystoscopic and bladder evacuation operation needed to be performed. Surprisingly during the operation, a moving object inside the bladder was found. It was too small for our inspection so that the detail of the object was hard to examine. The object looked like a worm with around 2 mm long and pinkish-white color. It seemed like *larvae* of unknown species of fly but there was still possibility that it was a species of parasitic helminth.

After undergoing the evacuative cystoscopic operation, the sample of bloody urine from this procedure was sent to the laboratory for the urinalysis examination. However, there was no *larvae* found in the urine and it made the parasitology laboratory examination difficult to mention what was the exact species of the *larvae*.

Here were the other urinalysis result: colour (bloody, muddy); Oxalate crystal (+), erythrocyte (15-20/large field of view, normal : 0-1), leucocyte (0-2/large field of view, normal : 0-4), no suspected helminth's eggs found through urinalysis.

The latest diagnosis for this patient was Intravesical Parasite. The patient showed better improvements after surgery and after two days he was allowed to go home, followed by outpatient treatments switched to be oral medications (levofloxacin 500 mg once and mefenamic acid 500 mg three times a day). After three days, the patient's complaints gradually reduced, there was no more

hematuria and dysuria when controlled at urology polyclinic.

DISCUSSION

There will remain a question about what was swimming inside the patient's bladder since there were lack of datas and samples. However, we still can try to get something from this case. From the video that we have, we suspect that was a kind of worm, *larvae* from any kind of fly or parasitic helminths.

The most common helminths affecting the urinary system are *Schistosoma*, *Echinococcus*, and *Filaria*. Schistosomiasis gives rise to the disease by finding its way into bladder veins in human who is final host. It leads to unintended consequences such as permanent urogenital problems, renal failure and malignancy because of its chronicity and tissue damage in the part of body it locates. Echinococcosis is known as an endemic zoonotic parasitic disease which infects to humans from animals and grows up in humans evolved in agriculture and stock rising and it may involve in kidney sporadically and create cysts in the kidney or other urinary organs that lead to some problems. Filariasis involves lymphatic system obstruction, that leads to elephantiasis which may involve in scrotum and legs. The parasitic helminths lay their eggs inside the urinary organs and excrete them through urine.¹

Because of the datas about this patient's clinical symptoms and findings do not really match in the involment of other systemic organs and the severity, it is needed to look for other possibilities. Beside parasitic helminths, myiasis is more relevant disease in this case with the involvement of worm-like creature.

Myiasis is the term that describes infestation of live vertebrates (including humans) with dipterous *larvae*.² Cavitary myiasis indicates the presence of *larvae* in a natural body cavity, as was the case in

this patient.¹¹ More than 50 species of flies could contribute in myiasis case.⁹ Unfortunately in this case we could not mention the exact species which lived inside the patient's bladder because of the absent of the *larvae* inside the sample of urine. We just inspected the *larvae* from the video which was taken during the cystoscopic operation but still could not determine what species it was since there were too many possible flies contributing to this case.

Internal urogenital myiasis is a rare event, considered as 'accidental myiasis' when a *larvae* reaches an internal genitourinary organ but will not be able to fully developed in the host.¹¹ It is more common in patients with precarious hygienic practices, psychiatric disturbances, diabetics, those with immunodeficiency, and in patients on a low economic level.¹² Predisposing factors may be the existence of suppurative lesions that attract and stimulate the deposition of eggs or *larvae* by the female insect, the habits of the population, such as sitting or lying on the ground in a state of undress, poor personal hygiene, and certain climatic conditions suitable for the flies.¹³

In this case, the patient worked as a gardener and it related to the open space and ground where the flies and larva could live. Moreover, Indonesia is a tropical country habited by many species of insects including flies. This patient also had a diabetes which may be one of many predisposing factors.

Possible symptoms are dysuria, lumbar pain and ureteric obstruction. Sometimes, the condition only causes psychological distress. Microhematuria, albuminuria, and leukocyturia may be found on laboratory examination.¹¹ The major symptoms in this case are moving abdominal pain with no exact location which got worse and pinkish urine. This type of pain, referred pain, usually happens in the complicity of inner organs

such as urinary organs like kidneys, ureters, and urine bladder.

Myiasis is generally self-limiting and thus mostly not dangerous for the host. The recommended treatment is to remove the *larvae* and to treat any associated infection with antibiotics. By doing such treatments, we could find a significant improvement from the patient's condition. It is match with the term of this patient which got so much better after being treated with the *larvae* evacuation, painkiller, and antibiotics.

CONCLUSION

Knowing the urinary tract parasite is important for its treatment. Further studies to analyze the larvae, prevent its infection, and decide the best treatment are necessary.

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