

## Urogenital Myiasis in an Immunocompetent Female

### ABSTRACT

Myiasis refers to parasitic infestation of body tissues by larvae of several fly species which thrive by feeding on, and occupying the host. Myiasis can infect the skin, eyes, nasal tract, gastrointestinal, and urogenital tracts. In human urogenital myiasis is commonly associated with unhygienic and poor environmental and sanitation habit and with lack of knowledge about urinary problems. In this clinical scenario, patient came with complained of intermittent passage of small, motile, and black worm kind of thing in her urine. Urine was collected and studied microscopically and detailed structures were described using microscope. It was concluded by this study that regardless of the fact that urinary myiasis is less common in humans; we should think about it in patients with urinary complaints. In this case, we were able to do successful outpatient treatment of urinary myiasis in an immunocompetent female.

**Key words:** Immunocompetent, Larva, Urogenital myiasis

### INTRODUCTION

Urogenital myiasis is defined by infestation of the urinary bladder, urethra, etc. by flies and their larva. After infection germ can set down into matrix (e.g., injured or breach in mucous membrane), and after hatching, these germ cause digging and breeding within affected tissues. Further, this nidus with inflammatory cells form micro abscess at tissue site and gradually over time form granuloma. Urogenital myiasis of any type is less common and usually affects the immunocompromised persons, those with poorly sanitized water resources, bad genitourinary hygiene, and those living in humid places. Urogenital myiasis cases presented with haematuria, bladder irritative symptoms, itching, dysuria, fever, and passing larvae in urine directly. For identification of infestation requires morphological study of larvae in urine sample.

### CASE PRESENTATION

A 41-year-old female presented to gynecology clinic reporting 3 months of intermittent passage of small, motile, and dark-colored worm-like organisms in urine. Symptoms included intermittent dysuria with c/o passage of worm like moving structure in urine with itching in periurethral region on and off. About 3–4 larvae were seen in each urine sample. There was no fever, no hematuria. The patient was living in chawl in average hygienic conditions. She denied any knowledge of a source of infection, denied recent urethral catheter placement, or prior genitourinary pathology. She underwent D&C Hysteroscopy with Mirena insertion done 18 months ago i/v/o Menorrhagia. Procedure went uneventful.

On physical examination, the patient was well oriented and stable. She complained only minimal suprapubic tenderness.

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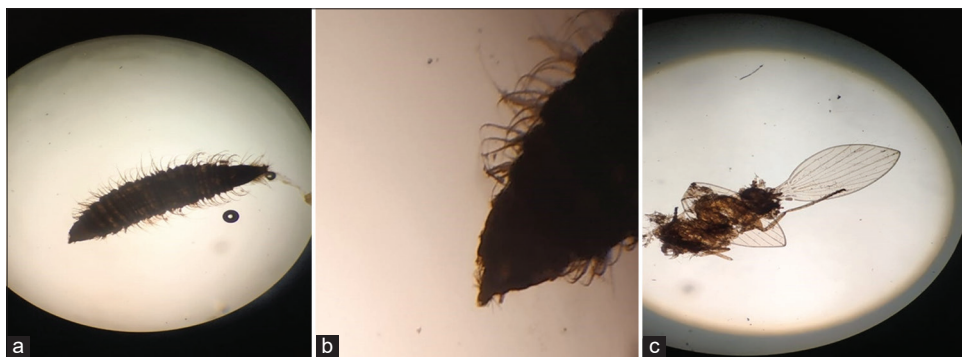
Vaginal speculum examination before the collection of urine did not reveal any evidence of worms and mirena thread seen.

### Investigations

The patient was told to collect urine samples in clean tightly covered containers at time of larval passages. The urine sample given by patient at first visit had tiny, dark, and blackish moving objects. In second urine sample adult fly was found. Complete urine analysis was performed which were normal, that is, red blood cells (3–4/HPF) and pus cells (1–2/HPF) in sample. Collected larvae and flies from sample were examined grossly and microscopically at the microbiology lab of Holy Spirit Hospital, Mumbai. Urinalysis show that few bacteria with urine culture show colony count  $10^5$  CPU/mL. With organism, *Enterococcus gallinarum* which was sensitive to Nitrofurantoin.

### Treatment

Treatment was initiated with an Ivermectin 12 mg oral tablet for 3 days with plenty of fluid intake 3 L/day. Ivermectin is



**Figure 1:** (a-c) Microscopic images of larvae

semi synthetic macrocyclic lactone drug with antihelminthic activity.

#### Outcome and follow-up

After 1 week completing ivermectin, the patient denied passage of larvae. She did not had complain about any symptoms like painful or burning micturation and perineal itching. For further diagnosis, she underwent cystoscopy and demonstrated bladder musosa was regular and non-inflamed and free of any infective focus ureteric slits were open and normal in anatomy. Follow-up urine culture and microscopy after 4 weeks show no evidence of larvae.

#### DISCUSSION

*Telmetoscopus albipunctatus* is a primitive dipteran of the family Psychodidae commonly found in sewage, bathrooms, and toilets whose breeding environment is partial to rotten and wet vegetation.<sup>[1]</sup> Urinary myiasis was documented from Egypt (El-Dib *et al.*, 2017),<sup>[1]</sup> the Palestinian Territories, and from India (Sarkar *et al.*, 2018).<sup>[2]</sup> *Clogmia albipunctata* was found to be associated with urinary myiasis.<sup>[3]</sup> Although this insect not often infect humans but it still common cause of infection in humid countries, particularly in rustic regions with unhygienic environment and bad sanitation habits. If the maggots opportunistically like in superinfection infiltrate body cavities such as the nasal tract, genitourinary organs and bowel and these organs become nest for development of infective focus and larva breed in that focus.<sup>[4]</sup> Another cause of these urogenital infection in females is anatomically and physiological short urethra and unhygienic sanitation habits which act a aggravating factor.<sup>[5]</sup> Urogenital infection occurs by inflammatory toxic products, microorganisms, and viruses which released by the larvae, and cause abscess and necrosis of bladder wall due to the larval migration in bladder. Risk factors for miyasis infestation include unhygienic sanitation habits, long standing disease, decubitous ulcers, morbid conditions like uncontrolled diabetes and chronic immunosuppression, and sexually transmitted infections cause frequent infections. Any genitourinary obstruction which reduce urine flow

allows infections to occur. However, some patients with myiasis are seen without any risk factors and history of infection.<sup>[6,7]</sup> Symptom presentation of infection differs in various anatomic location. Internal urogenital myiasis may present as flank pain, dysuria, frequency, obstruction, and presence of larva in the urine directly. External urogenital myiasis presents as pain, itching over periurethral area, skin ulcers, and direct visualization of larva in a wound. Diagnosis of urinary myiasis is made by electroscopic or microbiological visualization of the larvae within a urine sample. Urogenital myiasis treatment is usually started with Ivermectin, an antihelminthic oral agent, which has activity against arthropods such as flies and ticks. This drug act on parasites and arthropods by binding to glutamate-gated chloride channels in nerve and muscle cells which cause paralysis of insect and expel out of body. One article reported a middle-aged male with chronic hepatitis B with complain of urgency, frequency and dysuria with concurrent passage of larvae and he was treated with oral Ivermectin, with improvement in symptoms after 6 weeks.<sup>[8]</sup> There have been a few cases which had spontaneous recovery from infestation without any treatment. In female of reproductive age to elderly, there were few cases of genital myiasis have been reported so far. Wadhwa *et al.* in their study have addressed this thing in 45-year-old female with urinary incontinence with cervical carcinoma with urinary myiasis.<sup>[9]</sup> Sometimes, this condition in a female with persistent symptoms can cause psychiatric disturbance. Saldarriaga *et al.*<sup>[10]</sup> have reported in a uterine cavity infestation in an elderly female with genital prolapse. However, in this case, we were able to demonstrate successful treatment of a case of urinary myiasis in a healthy and immunocompetent female.

#### CONCLUSION

Urogenital myiasis has low incidence and had poorly explained epidemiology which may cause misdiagnosis of condition if on examination urine sample is clear with no evidence of larva. A thorough history of patient should ask and if history creates doubt of maggot infection should investigate

to diagnose the condition and if diagnosed, clinician should attempt to describe structure and species. Patients should be aware about factors such as good hygiene and sanitation, if infection occurs need complete diagnosis and treatment. Patients can be educated about these from community service.

### Consent

For this case, report informed and verbal consent obtained by the patient.

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