

Urinary Myiasis in a Child Caused by *Psychoda* Species- A Rare Case

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ABSTRACT

Human myiasis is infestation of human living tissue with dipterous larvae. Urinary myiasis is quite rare, because the fly has to bypass the clothing/reach the inaccessible site (genitals) to lay egg, larva has to hatch and migrate to urinary bladder. It may occur in immunocompromised individuals and in people who maintain poor personal hygiene. Authors hereby, present a case of 10-year-old female child with complaints of passing of small worm like structures in urine for one month. The structure of worm was examined macroscopically and microscopically, and was identified as larvae of *Psychoda* species. She was started with tablet ivermectin and passage of worms was stopped. The present study highlighted the importance of awareness of clinicians about urinary myiasis condition as well as its management. Maintenance of good personal hygiene is important in prevention of such infestation.

Keywords: Anthelmintic agents, Larva, Worm

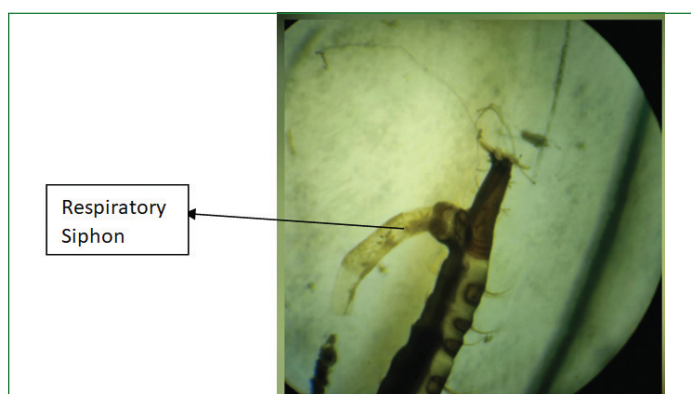
CASE REPORT

A 10-year-old female child was presented to Paediatric Department with passage of worms in the urine for one month. She was apparently well one month back, started passing worm like structure at irregular intervals in the urine which was noticed by her mother with no signs of dysuria, urgency or fever. Her father gives history of about 15 to 20 worm like structure were passed in last one month. She was shown to a local doctor for whom she was advised complete urine analysis and ultrasound scanning. Urine sample was centrifuged and sediment was analysis by wet mount examination under low/high power microscope which showed pus cells 1-2/hpf, epithelial cells 3-4/hpf and nothing significant. Ultrasonography showed bladder wall thickening with cystitis. She was given syrup citralka for five days and tablet albendazole stat and one tablet after 15 days, but the passage of worms persisted even after treatment. They consulted the other doctor and he prescribed tablet mebendazole for three days. After one month

of not diagnosing, she comes to paediatrician with urine sample containing worms. The paediatrician advices for urine analysis at our hospital. The urine sample was submitted to the laboratory. Macroscopically two worm like structures were found in the urine sample of which one was alive [Table/Fig-1]. Morphologically based on macroscopic [Table/Fig-2] finding, preliminary diagnosis was made as urinary myiasis and based on microscopic features it was confirmed that the larva was of *Psychoda* species [Table/Fig-3,4]. Repeat urine sample on the next day also demonstrated the same larva. Stool examination was normal. Patient was given tablet ivermectin 6 mg single dose, syrup citralka (urinary alkaliniser) and tablet amoxycillin clavulonic acid double strength (DS) for five days, asked to drink plenty of fluids for hydration (2-3 liters/day) and maintain personal hygiene. After one week, passage of larvae in the urine stopped. She was advised to follow-up with Urologist if larvas' passing continues. Further she was followed-up for one month and she didn't pass any larvae later.



[Table/Fig-1]: Worm like structure in Urine sample. **[Table/Fig-2]:** Macroscopic view of *Psychoda* species Larva. **[Table/Fig-3]:** Microscopic view showing anterior aspect of Larva (Segmented body with hairs). (Images from left to right)



[Table/Fig-4]: Microscopic view of posterior aspect of larva (showing respiratory siphon).

DISCUSSION

The word myiasis is derived from Greek language "myia" means the earlier stage of flies life. The flies grow and reproduce at proper places like hay and straw barn during winter. Female flies lay their eggs on decaying plants, greenhouses, mixed and wet hay and straw. On ideal conditions the larval stage is for 6 to 8 days, but in cold weather or food shortage it may take 4 to 5 weeks or more [1]. Myiasis can be classified into different types based on the tissue involved. Cutaneous myiasis is the most common type. Body cavity myiasis like nasopharyngeal, ocular, aural, gastrointestinal tract and urogenital tract are less common [2].

Urinary myiasis is caused by *Eristalis* and *Psychoda* flies. It is due to flies laying the eggs near the urethra and the larvae migrate

upwards in urinary tract [3]. The fourth stage larvae infest in the urine of humans. Its gross appearance is of whitish-grey, measuring about 3-5mm diameter and slightly flattened worms. They are covered with short hairs and denticles on the edges. There is a double knob, long hairs and a siphon at the end [4]. The body is made up of 11 segments. The siphon is seen in the posterior end which is 7 to 8 times as long as broad, tapering from the expanding base to tip [5].

The larva of *Psychoda albipennis* are found in moist, filthy areas like decaying fruits, vegetables and in piled up garbage and in places where irrigation of plants with canalisation is done [4]. Urinary myiasis is quite rare. The risk factors are severely immunocompromised, poor hygiene, restricted mobility, chronic debilitating illness and those who live or visit environment with poor sanitation [6,7]. Our Patient was from poor socio-economic background and used to play in filthy environment like cow dung.

Treatment is usually initiated with ivermectin, an antihelminthic oral agent, with known activity against arthropods such as flies and ticks. It acts to eliminate parasites and arthropods by binding to glutamate-gated chloride channels in nerve and muscle cells of invertebrates resulting in paralysis and expulsion [6]. Maintenance of good personal hygiene and living in well-sanitised environment are important to prevent from getting such infestation [8].

Urinary myiasis cases previously have been reported from other countries. A 10-year-old female from Turkey, also had history of moving worms in the urine but was associated with dysuria and itching which was identified as larva of *psychoda albipennis* [9]. Another report from Saudi Arabia reported moving worm like structures in a 42-year-old man for three weeks and it was later identified as *psychoda albipennis* under microscopy [10].

A 50-year-old female was reported with intermittent passage of larvae in urine, since 3 months and got recovered after ivermectin treatment [6]. Another case from Canada was reported in a 57-year-old male who presented with passing of worm like structures. He gave history of recent travel to Iraq and Afghanistan where he resided in a house with poor sanitary condition and fly infested pit latrines [11].

From India, very few cases have been reported. A 19-year-old female presented with repeated passage of live worms in urine for

2-3 years. She also had symptoms like dysuria, fever and itching in the periurethral and genital regions which was later identified as *Psychoda albipennis* [2]. Another case from Hyderabad was reported in 24-year-old immunocompetent female who presented with passage of worms in urine, which was identified as *C. Albipunctata* (family Psychodidae) [8]. Poor hygiene and compromised health conditions, low mobility are the major risk factors in urinary myiasis which should be considered and managed. Chances of reinfection can be reduced by improving the personal sanitary conditions.

CONCLUSION(S)

The present study highlights the importance of awareness on Urinary myiasis condition to the clinicians and also the early management of such cases to prevent complication.

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