

## INTESTINAL MYIASIS CAUSED BY *CLOGMIA ALBIPUNCTATA* LARVAE IN AN INFANT: A CASE REPORT IN EGYPT

By

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### Abstract

Myiasis occurs when the human tissues are infested by larvae of dipterous flies. *Clogmia albipunctata* (*C. albipunctata*), is one of the important arthropods causing human myiasis. *C. albipunctata* can cause urogenital or intestinal myiasis in non-hygienic settings. The aim is to report a case of infantile intestinal myiasis. It presented a case of 1.5 years female infant complaining of gastrointestinal symptoms with recurrent passage of small moving worm-like structures in stool. They were collected and checked both macroscopically and microscopically. Upon Larval examination, it was proved by morphological detection of the fourth instar larvae of *C. albipunctata*. Ivermectin treatment was prescribed and was associated by relief of symptoms and disappearance of larvae from stool.

**Keywords:** *Clogmia albipunctata*; Egypt, intestinal myiasis, Infant.

### Introduction

Myiasis producing dipterous larvae nurture on host; dead or living on its body tissues or fluids (Farrag *et al*, 2019). Human myiasis was reported in rural areas in tropics and subtropics of Africa and America (Burgess, 2003) correlated with bad hygiene and low educational level (Zachariah *et al*, 2014).

Accidental intake of larvae may cause intestinal myiasis manifested by gastrointestinal symptoms such as nausea, loss of appetite, abdominal pain, vomiting and diarrheal attacks (Ramana, 2012). Although, digestive enzymes and low oxygen content in gut usually kills maggots, yet their durable cuticles that outrun these enzymes and traverse gut to pass in stool (Smith and Thomas, 1979).

*Clogmia* (= *Telmatoscopus*) *albipunctata* is Nematocera of family; Psychodidae, sub-family: Psychodinae, non-biting moth flies; named drain, bathroom, or filter flies (Mullen and Durden, 2009). Adults inhabit moist places, especially bathrooms, toilets, and sewage (Tu *et al*, 2007).

In Egypt, cases of human urinary and intestinal myiasis were reported (Sakla *et al*, 2003; Lotfy, 2011; Yones *et al*, 2014; El-Badry *et al*, 2014; El-Dib *et al*, 2017; 2020).

This study reported a case of extensive intestinal myiasis in an infant caused by *Clogmia albipunctata* larvae.

### Case history and Description

A 1.5-year-old female without siblings from Helwan District was presented with irregular passage of small actively motile worm-like structures in stool associated with abdominal pain for 6 months duration. One month before attendance, patient suffered from pasty diarrhea alternating with constipation accompanied by occasional nausea and vomiting. On clinical examination, she showed neither pyrexia nor anal pruritis or any chronic disease. She was underweighting with signs of malaise and delayed milestones (talking and walking). No history of travelling abroad and no family history of same condition. Her father was a farmer, and her mother was a housewife. They mentioned that indoor they have a pit latrine with accumulation of unclean water around due to sewage malfunction as well as many domestic flies.

Drugs were prescribed including albendazole, mebendazole and metronidazole with occasional temporary relief and then manifestations recurrence with worm discharge.

Parents were asked to deliver a fresh stool

sample in a wide-mouthed clean uncontaminated container for the Diagnostic and Research Unit of Parasitic Diseases (DRUP), Department of Medical Parasitology, Faculty of Medicine, Cairo University, where complete stool examination was done using direct wet and concentration techniques.

Fecal sample showed motile larvae. Specimen was soaked in 10% KOH for 15 min. at room temperature to clear larvae that were separated with fine forceps, washed several times in normal saline solution, preserved in 5% formalin, mounted and microscopic examination was done.

Ivermectin<sup>®</sup> was prescribed by a pediatrician followed by saline purgative. Mother was instructed to remove any useless water in bathroom and to spray a friendly insecticide indoors. Follow up for three months to confirm complete larval clearance and intestinal symptoms improvement.

An informed consent was obtained from the father and the study received Faculty of Medicine, Cairo University's Research Ethics Committee Approval (N-66-2023).

### Results

*Clogmia albipunctata* 4<sup>th</sup> stage larvae descriptive morphology (Fig. 1): Larval proved to be *C albipunctata*. Larva is hairy, yellowish-brown, about 8-11mm long with segmented outline. Head is triangular with minute antennae and a mouth with 2 horizontal mandibles ventrally, dorsal plates, siphon, and dark brown anal processes. Body 11 segments; each divided into several sub-divided by saddles-shaped chitinous plates except eighth segment, Plates covered with long dark thread-like setae on dorsal and lateral surfaces; arising from button-shaped chitinous basal plates and directed backwards.

Apical respiratory siphon cone-shaped, longer than broad (3:1) with longer anal processes dorsally than ventrally with long hairs, slightly longer on ventral processes than dorsal ones with posterior spiracles, Prothorax with a pair of anterior spiracles.

### Discussion

Flies breed places are moisture and sewage

leeches (Wagner, 1997) or in drainpipes and arise from sink and bathtub drains (El Badry *et al*, 2014). Larvae enter via body orifices causes nasopharyngeal, gastrointestinal, and /or urinary passages as breeding sites (Zhang *et al*, 2017). Abroad, Tokunaga (1953) in Japan reported human *C. albipunctata* larval myiasis, in Malaysia (Tu *et al*, 2007) and Taiwan (Mokhtar *et al*, 2016).

Generally, girl got myiasis by ingestion of contaminated food and drinks with its eggs. Myiasis usually infests patients in areas with poor hygiene and low socio-economic levels (Fernandes *et al*, 2009).

Undoubtedly, presence of damp watery indoors aided establishment of fly life cycle.

Purgatives and anti-parasitic drugs such as mebendazole, and albendazole treated patients' myiasis (Francesconi and Lupi, 2012). Ivermectin has anti-helminthic activity and in managing some arthropod infestations as myiasis, and scabies. Pediatrician prescribed adequate safe dose for child age with more fluid in-take, followed by saline purge, larval passage in stool continued for days. The case was followed for gastrointestinal symptoms and larval passage for 3 months.

### Recommendations

Parents were instructed for adequate bathroom dryness, healthy sanitation, safe food storage and safe indoor measures. Myiasis must be in GIT differential diagnosis.

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#### Legend of figure

Fig. 1: Light microscopy of *Clogmia albipunctata* larva 4<sup>th</sup> stage: a- Full larva, segmented hairy body (x40), ventral aspect (drawn), b- Posterior part with chitinous saddle-shaped plates, dorsal plates, dorsal and lateral setae (x40), dorsal aspect (drawin), c-Anus caudal part with anal papilla (x100), ventral with apical posterior spiracles & d-Anterior & d-Anterior triangular head (x100), ventral surface (Drawn).

