

CASE REPORT

Wound and furuncular myiasis caused by *Wohlfahrtia magnifica* (Diptera: Sarcophagidae) in a child with kerion

Y. ZENATY^{1,2}, A. HOREV^{1,2}, S. BEN-SHIMOL^{2,3},
G. SHALOM^{1,2} & K. Y. MUMCUOGLU^{4*}

¹Department of Dermatology, Soroka University Medical Center, Beer Sheva, Israel.

²The Faculty of Health Sciences, Ben-Gurion University of the Negev, Beer-Sheva, Israel.

³The Pediatric Infectious Disease Unit, Soroka University Medical Center, Beer Sheva, Israel.

⁴Parasitology Unit, Department of Microbiology and Molecular Genetics,
The Kuvim Center for the Study of Infectious and Tropical Diseases, The Hebrew
University–Hadassah Medical School, Jerusalem, 91120 Israel.

*Corresponding author: kostasm@ekmd.huji.ac.il

ABSTRACT

We report a unique case of a mixed-type, wound and furuncular, myiasis caused by the larvae of *Wohlfahrtia magnifica* in a 5-year old child, who was diagnosed with a kerion two months prior to admission. Removing the larvae, and treatment with systemic antibiotics and antifungals resulted in a quick and full recovery of the patient.

KEYWORDS: *Wohlfahrtia magnifica*, spotted flesh fly, myiasis, kerion, *tinea capitis*, Israel.

INTRODUCTION

Cutaneous myiasis is caused by the infestation of the skin with the larvae (maggots) of several fly species (Zumpt 1965; Droma *et al.* 2007; Schnur *et al.* 2009; Tligui *et al.* 2007; Gaglio *et al.* 2011; Landehag *et al.* 2017). Cutaneous myiasis can be subdivided into wound myiasis, where larvae inhabit cutaneous wounds, and furuncular myiasis, where they burrow into the dermis to cause boil-like lesions. Cutaneous myiasis is common among domestic and wild animals, while human disease is mainly endemic in impoverished populations, especially in tropical regions. High incidence of human myiasis is associated with poor hygiene, neglected open wounds and presence of domestic animals in the close vicinity (Singh & Singh 2015).

Kerion is a severe, inflammatory, nodular form of *tinea capitis*, seen mostly in children (John *et al.* 2018). It may serve as a suitable environment for wound myiasis, but once formed, maggots may cause secondary furuncular myiasis.

Here we report a unique case of a mixed-type, wound and furuncular myiasis, caused by *Wohlfahrtia magnifica* (Schiner, 1862) (Diptera: Sarcophagidae) larvae in a child with kerion.

CASE REPORT

An otherwise healthy five-year old Bedouin girl, from a rural settlement in the Negev desert of southern Israel, presented to our hospital in July 2015 with a diagnosis of a kerion, made two months earlier by a dermatologist.

Upon clinical examination, the child was irritated and suffered pain but otherwise stable. Scalp examination revealed massively edematous, erythematous, scaly, burrowed boil-like lesions, measuring up to 5 cm in diameter, from which several fly larvae protruded (Fig. 1A).

On closer examination, it was evident that while several larvae were crawling freely in the decaying tissue, others were hidden in boil-like nodules underneath the skin, inaccessible by forceps.

Some of the larvae (Fig. 1B) were manually collected by forceps; they measured up to 1.5 cm in length. Later on, a gentle puncture of several boggy nodules had to be made in order to remove the remaining larvae. A total of 40 live maggots were collected and identified as the third instar larvae of *W. magnifica*, using the taxonomic keys of Zumpt (1965).

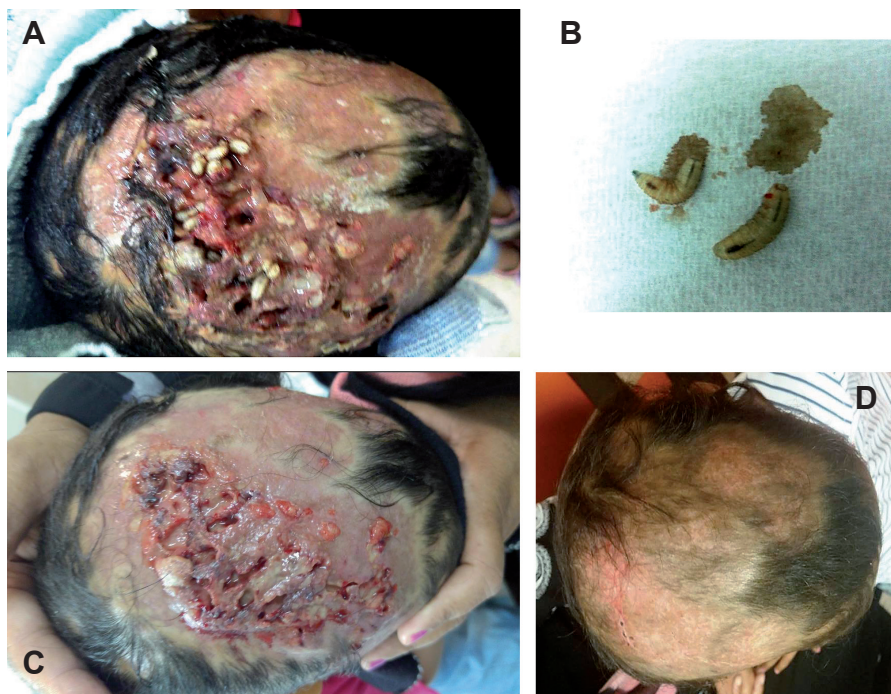


Fig. 1: (A) The condition of the scalp on admission; (B) larvae of *Wohlfahrtia magnifica*; (C) the state of the scalp one day post-treatment; (D) the state of the scalp 14 days post-treatment.

Complete blood count was notable for mild leukocytosis, while routine blood chemistry test revealed no abnormalities.

Following removal of the larvae, pain rapidly dissolved and a fenestrated burrowed appearing scalp with extensive patchy alopecia could be seen. The following day, three additional maggots were collected and a rapid improvement was noticed (Fig. 1C). The patient was treated with a 2-week course of systemic antibiotics (intravenous cefazolin 50 mg/kg/day for three days and then eleven more days with oral cephalexin 25 mg/kg/day). Additionally, the child was treated once daily with an antifungal shampoo (bifonazole) and was administered a 6-week systemic antifungal treatment (oral griseofulvin 20 mg/kg/day). The condition of the scalp improved considerably after 14 days of treatment (Fig. 1D).

DISCUSSION

Adult females of *W. magnifica* are larviparous and can lay about 150 larvae in a lifetime in open wounds, mucosae (e.g. mouth, nose, ears or eyes) or the genitalia of the host (Droma *et al.* 2007; Tligui *et al.* 2007; Gaglio *et al.* 2011). Larvae feed for 4–8 days on the host superficial tissues, which are progressively destroyed. Feeding larvae burrow deeply in the hosts tissue and may not be noticed upon superficial examination. Mature larvae, up to 20 mm long, drop to the ground for pupation, where adults emerge 4–12 days later (Zumpt 1965).

Healthy human skin is less attractive to the females to deposit their larvae. Advanced age, open wounds, poor social conditions, mental retardation, immobilization, diabetes mellitus, alcoholism, vascular occlusive disease and infected dermatitis were described as predisposing factor for cutaneous myiasis (Zumpt 1965; Droma *et al.* 2007; Schnur *et al.* 2009; Tligui *et al.* 2007; Gaglio *et al.* 2011; Landehag *et al.* 2017).

To the best of our knowledge, this is the first report of *tinea capitis* infection (kerion) as a predisposing factor for a *W. magnifica* myiasis.

In Israel, myiasis caused by *W. magnifica* was described from both domestic and wild animals, but only a single case of human infestation within the gingiva of a young man was reported (Droma *et al.* 2007; Schnur *et al.* 2009). Cases of human gingival, ocular, auricular, urogenital, as well as cutaneous and subcutaneous *W. magnifica* myiasis in humans, were reported in the Old World (Zumpt 1965; Droma *et al.* 2007; Tligui *et al.* 2007; Gaglio *et al.* 2011).

While removing the larvae, attention should be paid so as not to kill the maggots while still in the wound with the use of strong disinfectants, which could lead to marked inflammatory reactions and secondary infections. In the present case, the patient was treated with antibiotics and antifungals, which together with the careful removal of the living larvae resulted in a quick and full recovery.

DISCLOSURE STATEMENT

There are no sources of funding nor conflicts of interest to declare for any of the authors.

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