
Cordylobia Anthropophaga: Furuncular Myiasis in a Family of 3

Mayabi L, Badawy M, Abdallah A

Department of Surgery, Aga Khan University Hospital, Nairobi

Correspondence to: Dr Lance Mayabi, P.O Box 30270-00100 Nairobi. Email:lance.mayabi@aku.edu

Summary

Cutaneous myiasis due to infestation by the larva of *Cordylobia anthropophaga* is an underreported occurrence. Awareness is important to avoid misrecognition or delay in diagnosis. We describe a family of three with cutaneous myiasis caused by the African Tumbu fly (*Cordylobia anthropophaga*) presenting as multiple abscesses, demonstrating the need for a detailed travel history in such a presentation. The nature of the lesions, the life cycle and treatment modalities are discussed.

Cutaneous myiasis requires an awareness of its clinical features specifically in patients presenting with furuncular skin lesions who live within endemic areas or persons returning from such areas. Diagnosis is mainly clinical and lesions heal well after the extraction of the larvae. Good personal hygiene including ironing of clothes is crucial in controlling *C. anthropophaga* infestation.

Key Words: Myiasis, Furuncular, *Cordylobia anthropophaga*

Introduction

Myiasis is the infestation of live vertebrate animals with the larvae (maggots) of Diptera (two winged) flies. In humans, infestation may affect the skin, wounds, intestines and body cavities (oral, nasal, aural, ocular, sinus, vaginal and urethral). When open wounds are involved, myiasis is referred to as traumatic and when boil-like, the lesion is termed furuncular (1).

Cordylobia anthropophaga (also referred to as "tumbu fly", "mango fly", "skin maggot fly" or "verde cayor") is endemic in tropical Africa (2). Furuncular myiasis as a result of *Cordylobia anthropophaga*, though endemic in the East and West African sub region for over 135 years, is an underreported occurrence (3,4).

It commonly affects children more than adults which could be due to their relatively thin skin and possibly because adults develop immunity after repeated exposures (5). Immunosuppression (steroid therapy, corticosteroid immunosuppressive therapy for psoriasis, malnutrition, HIV/AIDS,

diabetes,) prolonged hospitalization, and extreme poverty may all predispose to development of lesions or wounds which may act as pre-existing factors for myiasis (5).

The adult female fly lays about 100-300 eggs in sandy soil often contaminated with urine and faeces or on damp clothes contaminated with urine or faeces laid to dry on the ground in the shade. After the eggs hatch, the larvae (first instar) penetrate unbroken skin when the host lies on the ground or comes into contact with contaminated clothing. Cutaneous symptoms which include pain & itching usually develop within 2 days. Furuncular lesions with an intense inflammatory reaction in the surrounding tissues develop within a period of 6 days after onset of cutaneous symptoms. Within 8-12 days the second & third instars develop during which time respiratory spiracles may be seen in the central pore. The 3rd instar then leaves the host, drops to the ground, buries itself, and pupates and becomes an adult fly able to reproduce and begin the cycle all over again (6) (Figure 1).

Figure 1: Life Cycle of the Fly

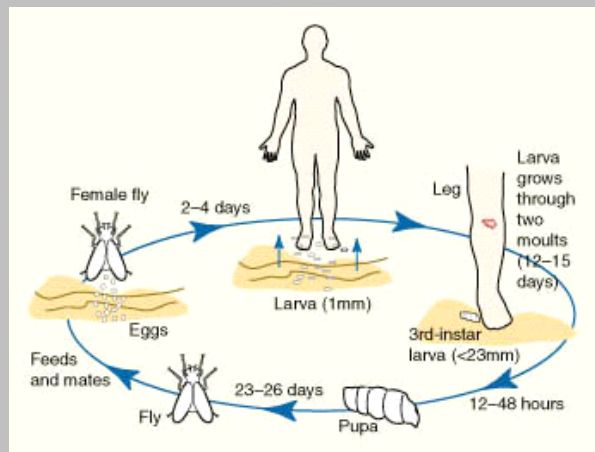


Photo Credit: Geary, M, Bernard, H, Russel, R, and Hardy, A. "Exotic myiasis with Lund's fly." *Medical Journal of Australia* 171 (1999): 654-655.

Dogs and small rodents (e.g. rats) are the definitive hosts. Humans are accidental hosts (7). Diagnosis is mainly clinical based on history of recent travel to an endemic area, one or more non healing skin lesions, pruritus and sensation of movement under skin or pain. Other features on examination include serous or sero-sanguineous discharge from a central punctum and observation of small, white thread-like larvae protruding from the lesion(s). The diagnosis is confirmed by the extraction of the larvae (8, 9).

Case Presentations

A family of 3 women, resident in Nairobi, Kenya, was initially seen at the Accident and Emergency department of the Aga Khan University Hospital, Nairobi with one week's history of "multiple itchy, painful boils" on multiple body areas. They were treated as having furunculosis and started on Clindamycin and Ibuprofen.

One of the patients returned three days later with worsening pain and swellings on both breasts, diagnosed as breast abscesses. She was referred for incision and drainage. The whole affected family had recently visited a village in Kitui (Eastern Kenya) where Tumbu fly is endemic two weeks prior to presentation. While there, they had hung their washed clothes on a line near the bush and did not iron before wearing them. It is not clear if any of the clothes fell on the bush. Examination of the patient who presented back with worsening bilateral breast swellings showed her to have multiple discharging sinuses on her breasts,

left arm and shoulder, right back and superior gluteal area. Each sinus had a whitish crust at the opening, with a pus-discharging central punctum. The patient reported to have known her HIV status to be negative and she was not known to be diabetic or on steroids. A diagnosis of multiple abscesses was made and the patient was admitted into the hospital for Incision & Drainage under General Anaesthesia. Intra-operatively, the first incision was made over the "abscess" on the right breast which yielded 2 live larvae. A total of 8 larvae were extracted from all the sites (Figures 2 to 4). The wounds were managed with daily dressing as an outpatient. Her sister and mother were recalled to hospital and had several larvae extracted under local anaesthesia.

All three patients gave informed consent for the publication of these cases with the accompanying images.

Figure 2: Extracted Larva



Figure 3: Extracted Larva on the breast

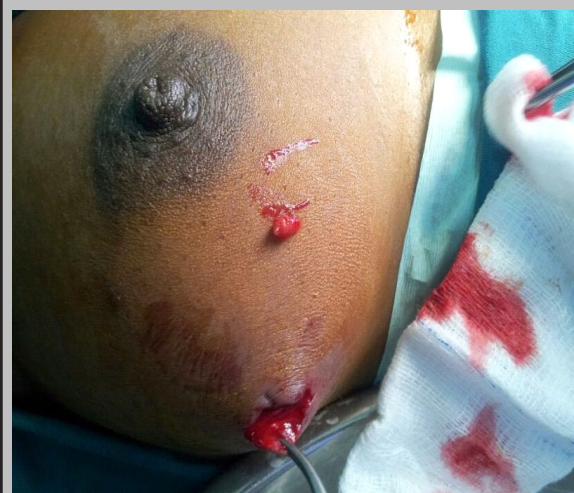


Figure 4: Larva on the thigh before extraction



Discussion

Differential diagnosis of furuncular myiasis includes furunculosis, abscess, foreign body reaction and tungaisis. In this case, the lesions were initially diagnosed as multiple abscesses. The treatment goal is larva removal and treatment of any associated infection with antibiotics although secondary bacterial infections are rare in *C. anthropophaga* infestations (10). The lesions heal rapidly after larva removal (or spontaneous extrusion). Complications include cellulitis, abscess formation, osteomyelitis and tetanus (7). Larva removal techniques include obstructing the cutaneous orifice thus suffocating the larva, which forces it to wriggle out. Substances used include oil, petroleum jelly, butter and liquid paraffin (10). Forceps may also be used or an incision made over the furuncle under local anesthesia. Care must be taken to remove the entire larva as any remnant may provoke an inflammatory response. Digital mechanical pressure on either side of the furuncle can also be applied to extrude the larva (9). Surgery is usually unnecessary while the invasive larvae remain alive but will be used to remove the dead or decayed larvae from an affected site to prevent possible secondary infections (11). In the furunculoid and almost in every migratory myiasis, surgical removal may be needed because the larva does not always emerge, remaining in the subcutaneous tissue and producing inflammation, infection, and granulomas (12). Clear indications for surgical intervention are lacking in the literature but several cases of invasive myiasis, such as ophthalmomyiasis and invasive intestinal myiasis need surgical intervention (13,14). In this case, the surgical removal was based on the initial misdiagnosis of the lesions as multiple abscesses.

Conclusion

Awareness of the clinical features of cutaneous

myiasis caused by *C. anthropophaga* is essential to avoid unnecessary delay in diagnosis and treatment. Awareness of the endemic zones within the country is also important, and a detailed travel history would heighten the index of suspicion.

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