

A RARE FINDING OF DISTAL PENILE FURUNCULAR MYIASIS IN A CHILD OF A NIGERIAN HEALTH CARE WORKER

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ABSTRACT

Introduction: Myiasis is the infestation of tissues of humans and other living vertebrates with the larva of flies, and it can affect any part of the body. Cutaneous myiasis is the commonest form of presentation. Furuncular myiasis which is a sub-type of cutaneous myiasis typifies the presentation in this index patient. It is commonly caused by *Cordylobia anthropophaga* in Sub-Saharan African countries including Nigeria. It commonly occurs among rural dwellers, as well as people of low socio-economic and poor educational status.

Case presentation: We present a case of balanitis from distal penile myiasis in a 3 year 8-month-old male child of a health worker in a tertiary hospital in Nigeria.

Conclusion: It is believed that with adequate knowledge, measures such as good hygiene and proper drying and ironing of underwear are helpful.

Keywords: *Cordylobia spp.*, Furuncular, Health worker, Myiasis

INTRODUCTION

Myiasis is the infestation of tissues of humans and other living vertebrates with the larva of two-winged flies, and it can affect any part of the body¹. When affecting the skin, it is termed cutaneous myiasis and it is the commonest form of presentation². Cutaneous myiasis has three major variants; wound myiasis, creeping (migratory) eruption, and furuncular myiasis in which the larvae penetrate and develop within the skin. The flies that are likely to produce specific types of cutaneous myiasis are outlined in Table 1. Furuncular myiasis is commonly caused by *Dermatobia hominis* in South America while *Cordylobia anthropophaga* is responsible for most cases in Sub-Saharan Africa or in those with recent travel history to Sub-Saharan Africa. Furuncular myiasis by *Cordylobia anthropophaga* usually affects areas covered by clothes such as the trunk, buttocks, and thighs but penile myiasis is rare. It commonly occurs among rural dwellers or people with low socio-economic status and poor educational background. We present a case of balanitis from distal penile myiasis in a three year, eight months old male child of a health worker who works in a tertiary health care facility in an urban centre.

CASE PRESENTATION

A 3 year 8-month-old male was brought by father to the outpatient clinic on account of a day history of painful distal penile swelling. Penile shaft swelling was associated with severe pain, worse with contact but no discharge. There was no dysuria, fever or associated scrotal swelling. There was no prior history of trauma or insect bite. No history of prior urethral instrumentation or catheterization. No history

suggestive of sexual abuse. He had left inguinal herniorrhaphy one year prior to presentation. Father is health personnel – ward assistant, and a staff of a tertiary health facility in an urban area in Southwest Nigeria.

Table 1: Variants of cutaneous myiasis and associated larvae

Type of Cutaneous Myiasis	Larva (fly)
Furuncular lesion	<i>Cordylobia anthropophaga</i> (tumbu fly) <i>Dermatobia hominis</i> (human bot fly), <i>Wohlfahrtia vigil</i> (fox maggot (flesh) fly) <i>Cuterebra</i> species (mouse bot fly)
Creeping eruption	<i>Gasterophilus</i> (horse bot fly) <i>Hypoderma Bovis</i> (cattle bot fly)
Wound Myiasis	<i>Fannia canicularis</i> (lesser house fly) <i>Musca domestica</i> (house fly) <i>Cochliomyia hominivorax</i> (screw worm) <i>Cochliomyia macellaria</i> (screw worm) <i>Chrysomya bezziana</i> (screw worm) <i>Wohlfahrtia magnifica</i> (spotted flesh fly)

Examination showed a child in painful distress, not pale and afebrile. His vital signs were within normal limits. The distal penile shaft and glans were uniformly swollen, erythematous, with differential warmth, and tender. A pustule was noted in the sub-corona area, no urethral discharge. Both tested were non-tender, and normal-sized. Digital rectal examination was normal.

An initial diagnosis of penile cellulitis was made. Full blood count done was within normal limits, though

white cell count was at the upper limit of normal ($10.88 \times 10^3/\mu\text{L}$ (N: 42%, L: 48.3%), Serum electrolytes were normal. He commenced intravenous antibiotics (Gentamycin, and Cefuroxime), analgesic; oral morphine initially and later suspension Ibuprofen when the pain score became mild and urethral catheter passed to divert urine. On the third day of admission, larva was seen extruding from the pustule in the sub-coronal area (Figure 1). A diagnosis of balanitis secondary to cutaneous myiasis was subsequently made. Macroscopic identification of the extruded larva by the microbiologist revealed *Cordylobia anthropophaga*.



Figure 1: Image of extruded larva of *Cordylobia anthropophaga* (placed on a cotton wool at the time of extrusion).

He was commenced on twice daily dressing with liquid paraffin-soaked gauze. He received suspension albendazole 200 mg stat, tetanus prophylaxis and continued oral analgesics. The pain and penile swelling progressively subsided. He was discharged home on the fifth day on admission to continue topical application of 1% Ivermectin. Parents were counselled on good hygienic practices, where to spread clothes, and the need for proper ironing of both sides of clothes. The child was followed up in clinic twice and wound healing was satisfactory.

DISCUSSION

Furuncular myiasis is commonly caused by *Cordylobia anthropophaga* in Nigeria, Sub-Saharan Africa or in those with recent travel history to Sub-Saharan Africa.¹ Reports of penile myiasis in children from *Cordylobia anthropophaga* have been reported in a 10 year old Danish boy who had history of recent travel from Senegal.³ Children of people of low socio-economic status, poor educational background and rural dwellers are more likely to be infected because of the associated poor hygienic practices.

Tumbu fly, *Cordylobia anthropophaga*, is a yellow-brown fly that is common in tropical regions of Africa.¹ It causes cutaneous myiasis in vertebrates, most commonly amongst dogs and other rodents. With human infestation being accidental and most commonly occurring in the rainy season where clothing is usually not properly sun dried.^{1,2} The female flies lay their eggs on the soil, especially in areas contaminated by faeces and urine. The eggs hatch in this favorable environment and can survive in this state for about nine days without any nutrition.¹

Contamination of human skin by larva usually results from flies (carrying the larva on their body) flying around and perching on the human skin² or from contaminated clothing left out to dry especially those spread on grass, trees or on soil under shades^{1,3} or when clothes spread on a cloth line fall on sand containing the larva.⁵ The larva attaches itself by oral hooks and penetrates the skin and a furuncular lesion develops.¹ The areas commonly affected by *Cordylobia anthropophaga* are those covered by contaminated clothes such as the trunk, buttock, thighs.² This contrasts with *Dermatobia hominis* which affects exposed areas of the body.^{1,2}

Ogbalu *et al.* in a population survey in the Niger Delta and South East parts of Nigeria over a one-year period demonstrated the endemicity of cutaneous myiasis amongst children in the rural areas in these regions and reported several children with penile myiasis and extraction of more than one larva in some children³, however the index patient lives with his parents in an urban area. They also noted that children who had pets were more likely to develop myiasis. The popular lesions with an opening on the skin producing serous discharge can be described as a boil. Localized pruritus, pain, malaise, and fever are constant features and regional lymph node enlargement may be seen^{1,2}

Cellulitis, furunculosis, infected insect bite is the usual diagnosis at initial evaluation^{1,2} as highlighted in our patient and a similar report by Usang and colleagues detailing the case of an 8-year-old boy referred as a case of phimosis but later found to have penile myiasis, there was a history of extraction of maggots from his dog three weeks prior to onset of complaints.⁴ A high index of suspicion is needed to guide care, but diagnosis is usually made upon exit of the larva from its cavity. If untreated, secondary bacterial infection is a key concern¹ but larvae will eventually exit the lesion, pupate, and the mature adult fly will hatch after 10 to 20 days.

Treatment involves general measures such as analgesics, and antipyretics. Suffocating the larva with sealing gels

or oils such as petroleum jelly, liquid paraffin amongst others helps to force the larva to burrow out of its cavity.^{1,2} In our patient we initially used dermazine cream and later liquid paraffin, after we noticed the exit of the larva.

If this does not lead to the exit of the larva, the worm may be squeezed out of its cavity¹ after the orifice has been made wider (using forceps, scissors or a surgical blade)⁴ or the cavity could be explored to remove the larvae with forceps.¹ The cavity is then carefully inspected to ensure all larvae have been expelled.⁴ This can be very painful and would require local anaesthesia (plain lidocaine) in adults or conscious sedation in children sedation. This was, however, not needed by our patient. In *Dermatobia hominis* larvae, surgical excision using a cruciate incision access under local anaesthesia is the most effective therapy.

Use of Ivermectin may be beneficial, though may come with inflammatory reaction if the worm is not extracted. We used topical Ivermectin post removal of the larva in our patient and no adverse localized skin inflammatory reaction was noted. Antibiotics is used if there is superimposed bacterial infection.² Tetanus prophylaxis can also be administered.¹

Prevention of infection include ironing clothes on both sides, drying garments on a clothes line and using pegs to hold it in place to prevent it from falling down, drying clothes inside the house with the windows closed.^{1,2} Also reported is avoiding playing naked on the soil by children as an 11 year old boy in a rural arear of Lagos, Nigeria who used to play naked on the floor around the house developed cutaneous myiasis.⁵ All these preventive modalities were relayed to the care givers in the form of counselling and health education.

CONCLUSION

Most cases of cutaneous myiasis especially when a single larva is involved is usually wrongly diagnosed as furunculosis or cellulitis. A high index of suspicion is needed to elucidate the risk factors, and a history of feeling of movements within the area of the lesion should raise one's suspicion. Penile myiasis is rare and every doctor should have this differential when dealing with swellings affecting the skin of the genitals.

A key peculiarity of this case is its occurrence in a child of a health worker in a tertiary hospital in an urban area who ought to know about related prevention practices, which was not the case here.

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