Cordylobia anthropophaga Causing Cutaneous Myiasis in a Child

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A case of cutaneous myiasis due to *Cordylobia anthropophaga* in a child is reported from Southern Saudi Arabia. This condition has not previously been reported occurring in a child in this Kingdom.

Myiasis is the infestation of a living vertebrate by fly larvae. Dipterous flies causing myiasis are: (a) Obligate myiasis producers, whose larvae develop only in living tissue. (b) Facultative myiasis, whose larvae usually develop on decaying tissue, but may also invade wounds. (c) Accidental myiasis producers, whose eggs or larvae are ingested and are not killed in the intestine, where they may develop further.¹ There are various classifications like Patton's classification, Bishop's classification, and Zumpt² classified the condition into ophthalmic, nasopharyngeal, gastrointestinal, urogenital, and cutaneous.

The skin of human beings and domestic animals can be invaded by a group of fly larvae that include the human boat fly (*Dermatobia hominis*) found in South and Central America, the African tumbu fly (*Cordylobia anthropophaga*) and some species of *Wohlfahrtila*, that have predilection for the tender skin of infants. They are grouped together as causing cutaneous myiasis. Currently, cases are reported in travellers or those exposed to unsanitary conditions. Cases have been reported from Canada,³ USA⁴-⁶ and Australia.⁷ From this Kingdom a case of orbital myiasis and two cases of cutaneous myiasis by *Dermatobia hominis⁸,⁹* have been reported.

This paper reports cutaneous myiasis in a child, in whom the condition was caused by *Cordylobia anthropophaga*, which was confirmed by the Central Laboratory for Entomology, Riyadh.

Case History

AMA, a 10-month-old male child, a resident of Zahran Al Janoub Hospital, Abha, Asir Region, Saudi Arabia was referred from the Primary Health Care Clinic (PHC) because of painful swellings on the left arm and leg for 3 days. He was febrile and irritable. He took medicine from the same PHC for 3 days. In the outpatients department the child was quite febrile and irritable, and examination revealed three hot red swellings — two over the left thigh and one over the left arm. They were tender and the large boil-like swelling over the thigh had a black object in its centre and was motile, according to the parents. This was a point of concern for the parents which made them seek medical advice. On further manipulation and slight squeezing and with help of a forceps a living motile larvae size of 15-16 mm was extracted. The shape of the larvae was that of an inverted flask with a black spot at one end. Similarly, two more larvae, smaller in size, were extracted from the other two lesions. All three larvae were preserved in formalin and sent to Central Laboratory for Entomology, Riyadh for identification and the report confirmed the larvae to be *Cordylobia anthropophaga*.

On further enquiry, the parents stated that the child had visited with them the Tihama area of Rezal-Alimic-Haswa where they had stayed for 10 days. The day of their visit to hospital was 5 or 6 days after returning home. No other family member had a similar problem nor according to the father had anybody in their village.
No treatment was given, as there was no infection; the lesions were only cleaned and covered with a bandage. On the fourth day after taking out the larvae, the child was seen and the lesions were found to be completely healed without any complications.

**Discussion**

In cutaneous myiasis the mode of spread is explained by the fact that the adult flies glue their eggs to the undersides of active zoonophilous insects like mosquitoes. The larvae hatch on the skin of these insects and are deposited on human skin when the insect is biting. Entry into the skin is either by penetration of skin hair follicle by means of larvae's mandibular hooks or by direct penetration of broken skin. The ‘tumbu’ fly (see Fig. 1) Cordylobia anthropophaga, is abundant in Tropical Africa; it measures 8.5–11.5 mm and is yellowish with black coloration on the abdomen. Cordylobia is an obligatory myiasis producer and gives rise to lesions in man or animals. Usually, it is inactive; when disturbed, it flies away with great rapidity.

The eggs are white and visible to the naked eye, are laid on the ground or on wet clothing hanging outside to dry or clothing contaminated by urine or sweat. The larvae are activated by the warm body of the host and in their early stages are provided with cuticular spines to assist penetration of the skin. There are three moult or instars (Fig. 1). Development in subcutaneous tissue is completed in 8–12 days. The cavity containing the larvae breaks down to form a swelling, resembling a boil, which bursts without much inflammation. The larvae emerge from the swelling; fall to the ground and pupate in 24 h. The adult hatches in 10–20 days; according to the temperature available. The dog is an important reservoir of infection.

Local reaction at the site of the lesion is due to the metabolic activity of the parasite, resulting in necrotic and proteolytic events. The local lesion may be secondarily infected by Staphylococcus aureus or Streptococcus pyogenes. The condition can be serious if the number of maggots is large, and cerebral involvement extending from the scalp lesion and leading to death has been reported.

The management of dermal myiasis is very simple. In untreated cases it progresses until the mature larvae break out of the skin lesion and drop to the ground to pupate. If local irritation and pain is there, simply squeezing the boil or lesion gently
with the help of two fingers will bring out the larva if it is at a mature stage, or simple compression and pulling out the larva with the help of needle or forceps, as was done in our case is also effective. Use of water, oil, turpentine, petroleum jelly or liquid paraffin also helps because the larvae are deprived of oxygen and work their way to the exterior.

Maggot therapy was used in the past for the treatment of osteomyelitis and various suppurrative conditions. Now it is being tried in severe skin infections and is said to have beneficial effects.13

Human myiasis is not a serious problem in Saudi Arabia, travellers returning to the Kingdom may be affected, but in our case the patient was a child and had not gone out of region. He had visited the Tihama area and developed his lesions afterwards. Most of the cases reported from the Kingdom so far have been due to Dermatobia hominis. The present case is the first reported due to Cordylobia anthropophaga.

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References