

## Case Report

**Cutaneous myiasis caused by *Cordylobia Anthropophaga*: Description of a case from Gazira State – Sudan**Hassan Ali Musa<sup>1</sup> MBBS, MSc, FRCSI and Enas Mobarak Wagi Allah<sup>2</sup> MBBS<sup>1</sup> Consultant Surgeon, Faculty of Medicine, Gazira University, Madeni, Sudan. P.O.Box: 20, Medani, Sudan. Tel: +249511860076, Fax: +249511842238, Mobile: +249912530909. e-mail: hassanalahmu@yahoo.com<sup>2</sup> Medical Officer, Wad Medani Teaching Hospital, Medani, Sudan**Introduction**

Cutaneous myiasis, (*myia*: Greek word for fly), is a temporary parasitic infestation of the skin of human and other vertebrates by larvae, the immature stage (maggots) of flies<sup>(1)</sup>. Myiasis can be accidental, as when fly larvae occasionally find their way into the human body, or facultative, when fly larvae enter living tissue opportunistically after feeding on decaying tissue in neglected, malodorous wounds. Myiasis can also be obligate, in which the fly larvae must spend part of their developmental stages in living tissue. Obligate myiasis is true parasitism and is the most serious form of the condition. Dogs and small rodents are a particularly important reservoir for the parasite<sup>(2)</sup>. Humans are infected only accidentally<sup>(3)</sup>.

The flies that cause furuncular myiasis include *Cordylobia anthropophaga* (tumbu fly, in sub-Saharan Africa) *Cordylobia rhodaini* (Lund fly, found in the rainforest areas of tropical Africa) and *Dermatobia hominis* (human botfly, which is endemic in Central and South America). As the modern, rapid international travel increases these myiatic infestations are now encountered outside these endemic regions<sup>(1)</sup>.

The eggs of *Cordylobia* species are however deposited on the soil or wet and soiled clothes hung outside for drying. The hatched larvae invade unexposed skin (of the buttocks, trunk, the limbs and penis) in contact with the wet clothes. Mature larvae then emerge from the host and pupate in the soil<sup>(1)</sup>.

**Case Report**

A 46 years-old-female presented with small swelling on her right upper arm for seven days, which was associated with stinging sensation. The patient had no constitutional symptoms. She received a course of antibiotic without any response. She is living near the Blue Nile River, where they have almost all types of domestic animals and vegetations.

On examination, she was anxious, afebrile and no lymphadenopathy. All her systems were clinically normal. There was a tender furuncular swelling (1.5 cm × 1.5 cm) on the anterior aspect of the right deltoid region, with surrounding erythema and central pore through which a single moving larva was observed. (Figure 1). A live larva was extruded when the swelling was squeezed (Figure 2). The wound was cleaned with mild antiseptic and the patient was reassured and given analgesia and sent home.

**Figure 1: Furuncular swelling**

Figure 2: A live larva extruded from the swelling



On her follow up, the wound healed without complications and there was a residual fading skin pigmentation.

The live larva was sent to the laboratory where it was identified as maggot of the tumbu fly, *Cordylobia anthropophaga*.

#### Discussion

The first description of myiasis was by Hope in 1840<sup>(4)</sup>, and the earliest reported case was in 1904<sup>(5)</sup>. The disease is usually uncomplicated and self-limiting, but there have been reported cases of fatal cerebral myiasis in young children resulting in meningitis and death<sup>(4)</sup>. Clinically, Infections with myiatic flies start out as itchy sores that develop into painful boil-like lesions with a central punctum, which often ooze.

An intense inflammatory reaction may be seen in the surrounding tissue during a later stage of the infestation<sup>(6)</sup>. Secondary infection by bacteria is uncommon, because bacteriostatic activity in the gut of the larva seems to prevent undesirable overgrowth of pyogenic bacteria<sup>(7)</sup>. Symptoms may include mild pruritus, periodic stinging, or intense cutaneous pain. Due to their infrequent occurrence, these lesions are often misdiagnosed as cellulitis, leishmaniasis, furunculosis, staphylococcal boil, insect bite or sebaceous cyst<sup>(2)</sup>. The diagnosis is mainly clinical and should be suspected in a patient with a secreting, non-healing furuncular skin lesion. Ultrasound has been used to aid in diagnosing and deciding upon a course of

treatment for cutaneous myiasis involving mature larvae, and also mammography in diagnosing the breast myiasis<sup>(2)</sup>.

Definitive diagnosis is made with demonstration and identification of the larva based on typical morphology. The lesion heals rapidly after the larva is removed or it spontaneously exists. Methods of removing the larva include obstructing the cutaneous orifice thus suffocating the larva, which forces it to wriggle out. Substances used include oil, petroleum jelly, liquid paraffin, beeswax, raw meat, nail polish, adhesive tape, butter, chewing gum, and mineral oil<sup>(2-4)</sup>. Also the use of agents noxious to the organism, including lidocaine hydrochloride, may be injected under the cutaneous mass, followed by extraction<sup>(2-4)</sup>. Larvae can also be extracted with suction or surgically. Oral ivermectin drug and the snake venom extractor has been used for the treatment of myiasis effectively<sup>(8,9)</sup>. Complications of cutaneous myiasis include cellulitis, abscess formation, tetanus and osteomyelitis<sup>(2)</sup>.

Human cases of cutaneous myiasis are most probably underreported because many remain undiagnosed or unpublished. Also most of the cases are treated by traditional remedies, or passed unnoticed and heal spontaneously. Awareness of myiatic infestation by health professionals would assist animal resources, agriculture and other departments in monitoring the different species of myiatic fly in the region.

The public health aspects of this problem entail the use of simple measures such as washing clothes thoroughly, drying and ironing of clothes. Also improvement of sanitation, personal hygiene and exterminating the flies by insecticides are crucial in controlling the disease.

The present observations confirm that this calliphorine species infestation are present in Gazira state. We want to emphasize the importance of the communication between surgeon and the

pathologist to achieve prompt diagnosis, and the collaboration between different departments concerned, to eradicate these species of fly.

#### References

1. Imam AM, Musa HA and Nugud OO. Cutaneous Myiasis: Report of two cases. *Sudanese Journal of Dermatology*. 2005; 3(1): 48-50.
2. Ugwu BT and Nwadiaro PO. *Cordylobia anthropophaga* Mastitis mimicking Breast Cancer: Case Report. *East African Medical Journal*. 1999; 76(2): 115–116.
3. Veraldi S, Brusasco A and Süß L. Cutaneous myiasis caused by larvae of *Cordylobia anthropophaga* (Blanchard). *International Journal of Dermatology*. 1993; 32(3): 184-187.
4. Hope FW. On insects and their larvae occasionally found in the human body. *Transactions of the Royal Society of Entomological*. 1840; 2: 256–271.
5. Rosen IJ and Neuberger D. Myiasis *Dermatobia hominis*, Linn: Report of a case and review of the literature. *Cutis*. 1977; 19(1): 63-66.
6. Ockenhouse CF, Samlaska CP, Benson PM, Roberts LW, Eliasson A, Malane S, et al. Cutaneous myiasis caused by the African tumbu fly (*Cordylobia anthropophaga*). *Archives of Dermatology*. 1990; 126(2), 199-202.
7. MacNamara A and Durham S. *Dermatobia hominis* in the accident and emergency department: "I've got you under my skin". *Journal of Accident and Emergency Medicine*. 1997; 14(3): 179-180.
8. Ribeiro FAQ, Pereira CSB, Alves A and Marcon MA. Treatment of human cavitary myiasis with oral ivermectin. *Revista Brasileira de Otorrinolaringologia*. 2001; 67(6): 755-761.
9. Boggild AK, Keystone JS and Kain KC. Furuncular myiasis: a simple and rapid method for extraction of intact *Dermatobia hominis* larvae. *Clinical Infectious Disease*. 2002; 35(3): 336-338.