

Cutaneous myiasis due to *Dermatobia hominis* in Saudis

Javed Akhter, PhD, FIBMS, Syed M. Qadri, PhD, FRCPath, Abdelmageed M. Imam, MBBS, MSc.

ABSTRACT

Cutaneous myiasis infestations are normally found in South and Central America but increasing travel has resulted in their spread to non-indigenous countries with increasing frequency. We report two cases of cutaneous infestation by *Dermatobia hominis* in Taif, Saudi Arabia. There was no history of travel outside Saudi Arabia. The source of infection appears to be domestic cattle indicating that these infestations may be endemic in this region.

Keywords: Cutaneous myiasis, *dermatobia hominis*.

Saudi Medical Journal 2000; Vol. 21 (7): 689-691

Cutaneous myiasis is the infestation of skin or mucous membranes with the larvae of flies. There are many causes and these infestations are found mainly in tropical countries of South and Central America. The clinical presentation is variable depending on the cause and the body part affected, which can include skin, nasal, ocular, oral, aural, gastrointestinal and genitourinary tracts.¹ When a biting insect lands on a warm blooded animal, the increase in temperature causes the eggs to hatch, the larva is deposited which burrows through intact skin, a hair follicle or through damaged skin. The larva remains at the site of entry for 4-14 weeks and develops into a third stage larval instar. The larva then emerges and falls to the ground where it pupates in the soil, finally producing an adult fly. The botfly (*Dermatobia hominis*) itself is 12-18mm in length having a triangular yellow head, a dull blue-black thorax, a diamond shaped metallic blue abdomen with orange yellow legs and pale brown wings. The botfly has both wild and domestic animals and birds as its normal hosts, although humans occasionally become infected. Infections of domestic animals can

produce various economic problems.

Cutaneous myiasis should be suspected in a patient with a secreting, non-healing furuncular skin lesion and relevant travel history. The patient may remember being bitten by insects. Sensation of movement in the lesion, which may be observed, supports the diagnosis. Cases have been reported in non tropical countries such as USA,² UK,³ Canada,⁴ Germany,⁵ Italy,⁶ and Japan.⁷ Qadri et al reported a case of cutaneous myiasis in a North American expatriate working in Saudi Arabia who had travelled to the Honduras.⁸ We describe two cases caused by *D. hominis* in Taif, Saudi Arabia in which there was no history of travel outside of Saudi Arabia.

Case Report.

Patient 1. A 38 year old Saudi male who lived in Leia, a village south of Taif. He had no history of travel but was known to own sheep. He suffered from a painful and discharging furuncular skin lesion on the right upper arm for several days. He had

From the Department of Pathology and Laboratory Medicine, (Akhter, Qadri), King Faisal Specialist Hospital & Research Centre, Riyadh, Department of Parasitology Laboratory, (Imam), King Faisal Hospital, Taif, Kingdom of Saudi Arabia.

Received 31st January 2000. Accepted for publication in final form 4th April 2000.

Address correspondence and reprint request to: Dr. Javed Akhter, Dept of Pathology and Laboratory Medicine, King Faisal Specialist Hospital & Research Centre, PO Box 3354, Riyadh 11211, Kingdom of Saudi Arabia. Tel. 442 4114. Fax. 442 4280 email: qadri@kfshrc.edu.sa

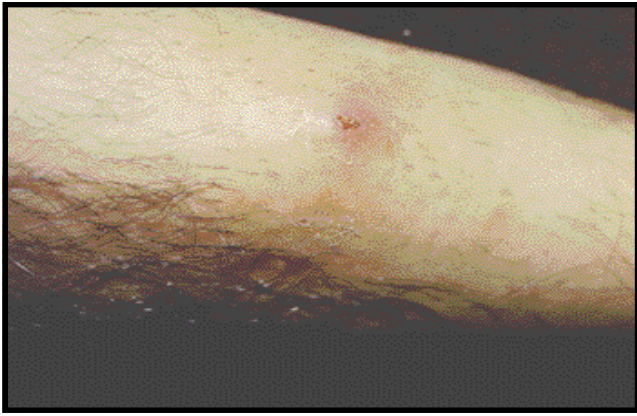


Figure 1 - Characteristic pruritic cutaneous lesion with central punctum and outer volcano like region.

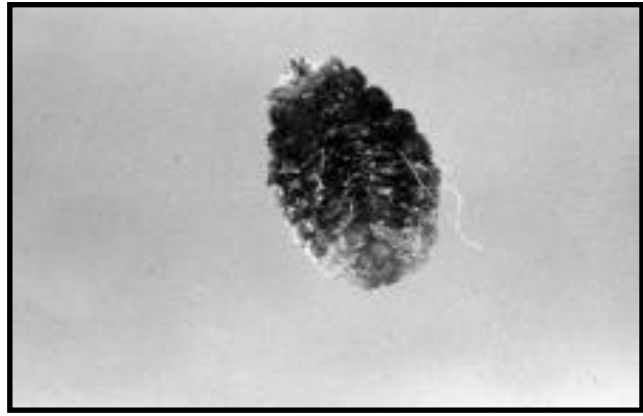


Figure 2 - *D. hominis* larva extracted from lesion (magnification x 10).

noticed a pruritic red papule but did not pay any attention to it. When it became larger, about 8-10mm in diameter, with erythematous induration and draining bloody and serous exudate, he sought medical attention. A "living worm" that had emerged from the skin lesion was also brought in by the patient. The "living worm" brought by the patient turned out to be a larva, measuring 18-20mm long and 4-5mm width showing characteristic features of Dermatobia.

Identification of the larva at King Faisal Specialist Hospital and Research Centre (KFSH & RC) laboratories confirmed it to be a *D. hominis* larvae (Figure 1). Further exploration of the wound under local anesthesia revealed no more larvae. The wound was cleaned and dressed. Broad spectrum antibiotic (augmentin) was given and one week later, the patient was symptom free. The patient reported seeing similar lesions on the cattle he tended. Examination of ulcerations and debridement from these cattle showed the presence of *D. hominis*.

Patient 2. A 29 year old Saudi female living in Taif developed a skin lesion on the left hand. The patient complained of a sensation and throbbing out of the lesion. After several days, she felt severe pain. It started as a pruritic red papule which developed into a tender lesion of 12-14mm diameter with a volcano-like appearance and erythematous induration. The lesion irregularly produced small amounts of bloody and serous exudate. The lesion spontaneously ulcerated and a larva dropped out, which was brought to King Faisal Hospital in Taif and was sent to KFSH & RC for identification. The patient was prescribed 250mg of tetracycline four times a day to prevent any secondary infection and a dressing applied to the wound. The larva was identified as *D. hominis* at KFSH & RC laboratories (Figure 2). The family owned sheep and goats and the patient had a history of handling these animals.

There was no history of travel.

Discussion. With increasing international travel, cutaneous myiasis may be encountered more frequently in countries in which the parasites are not indigenous. Travelling to subtropical areas accounts for a higher risk. In the Middle and South America, myiasis is mainly caused by the botfly (*D. hominis*). Blood sucking arthropods, usually mosquitoes, transmit the larvae via phoresis, a unique mechanism of egg deposition.⁹

D. hominis infestations can also occur in cattle. In Latin America, control strategies have included treating with subcutaneous injections of doramectin, which has proved effective.¹⁰ In the two cases reported in this paper, there was no history of travel and the source of infection appears to be domestic cattle. The fact that most of these animals are bred locally may indicate that these infestations may be endemic in this region but have not been diagnosed or reported. Omar and Abdalla¹¹ reported 7 cases of cutaneous myiasis due to the tumbu fly (*Cordylobia anthropophaga*) in the Asir region. Sundharam et al¹² later documented a further 31 cases of myiasis also caused by *C. anthropophaga* in the Asir region. These flies have flourished due to the damp climate in Asir and the fact that the fly can lay its eggs in soil and parasitize many animals would indicate that these types of infestations may become more apparent in future. Management is relatively simple and involves removal of the maggot by excision or squeezing the wound or by gentle use of forceps. To date these cases have not proved serious although complications such as brain and urinary involvement may occur. The present numbers of myiasis cases do not warrant alarm as a serious health problem but this trend should be closely monitored because *D. hominis* and *C. anthropophaga* appear to have an endemic origin in various parts of Saudi Arabia.

References

1. Kpea N and Zywockinski C. "Flies in the flesh:" a case report and review of cutaneous myiasis. *Cutis* 1995; 55: 47-48.
2. Millikan LE. Myiasis. *Clin Dermatol* 1999; 17: 191-195.
3. Gordon PM, Hepburn NC, Williams AE, Bunney MH. Cutaneous myiasis due to *Dermatobia hominis*: a report of six cases. *Br J Dermatol* 1995; 132: 811-814.
4. McIver SB, Dutta PC, Freeman RS. Cutaneous myiasis by *Dermatobia hominis*. *Canadian Med Assoc J* 1971; 104: 771-776.
5. Jelinek T, Nothdurft HD, Rieder N, Loscher T. Cutaneous myiasis: a review of 13 cases in travellers returning from tropical countries. *Int J Dermatol* 1995; 34: 624-626.
6. Veraldi S, Gorani A, Suss L, Tadini G. Cutaneous myiasis caused by *Dermatobia hominis*. *Pediatr Dermatol* 1998; 15: 116-118.
7. Taniguchi Y, Yamazaki S, Ando K, Shimizu M. Cutaneous myiasis due to *Dermatobia hominis* in Japan. *J Dermatol* 1996; 23:125-128.
8. Qadri SMH, Al-Ahdal MN. Cutaneous myiasis due to *Dermatobia hominis*: Report of a case. *Ann Saudi Med* 1988; 8: 286-287.
9. Elgart ML. Flies and Myiasis. *Dermatol Clin* 1990; 8:237-244.
10. Muniz RA, Cerquiera-Leite R, Coronado A, Soraci O, Umehara O, Moreno J, Errecalde. Efficacy of injectable doramectin in the therapy and control of *Dermatobia hominis* infestations in Latin America. *Vet Parasitol* 1995; 60: 265-271.
11. Omar MS, Abdalla RE. Cutaneous myiasis caused by tumbu fly larvae, *Cordlobia anthropophaga* in southwestern Saudi Arabia. *Trop Med Parasitol* 1992; 43: 128-129.
12. Sundharam JA, Al-Gamal MN. Myiasis in Saudi Arabia. *Ann Saudi Med* 1994; 14: 352.