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CASE REPORT

Cutaneous myiasis of face

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ABSTRACT

Myiasis is a rare disease that is mostly reported in developing countries. It is primarily caused by invasion of human body by fly larvae. This case report describes the presentation of myiasis as an ulcerated lesion over the cheek of a 46-year-old man. The myiasis was caused by the larvae of *Cochliomyia hominivorax* species, which is known to affect people of all age groups. Although this is not a lethal disorder, knowledge of the disease is necessary from a preventive, diagnostic and curative standpoint. This case report describes an efficient and a safe method for the treatment of myiasis.

Key words: Myiasis, *cochliomyia hominivorax*

INTRODUCTION

Myiasis (from the Greek 'muia,' meaning fly) is a parasitic infestation of live human or vertebrate animal tissues or cavities. They are caused by dipterous larvae which feed on the host dead or living tissues, liquid body substances or, if localized in the stomach, ingested food.^[1-3]

Myiasis is a well-known condition among veterinarians because cases of animal myiasis are frequent, especially in underdeveloped countries. They can attack humans, generally elderly people who are ill or debilitated; they are especially seen in the tropics and the Third World countries. Although all age groups may be affected, the damage caused to the infants is more serious and may even be fatal.^[4-6]

Clinically they can be classified as primary and secondary. Primary myiasis is caused by biophagous larvae (feed on living tissues), which are common in cattle (called bicheiras) and are rare in humans. Nevertheless, when this occurs, it is generally serious and is produced by *Cochliomyia hominivorax* larvae ('varejeira' fly) that lays up to 400 eggs on exposed wounds. Hatching of the larvae occurs within 24 hours. The larvae are voracious and destroy integral tissues and may cause serious hemorrhage which can even prove to be life threatening. Secondary myiasis is that caused by the necrobiophagous flies (feed on dead tissues). This is the more common type and attacks patients with necrotic cavity lesions.^[7,8]

The following is a report of an unusual presentation of myiasis which occurred in Thirunelveli Dist. of Tamil Nadu.

CASE REPORT

In early June 2006, a 46-year-old man reported with an ulcerative wound over his right cheek and swelling on the right side of

his face [Figure 1]. The patient had severe and continuous pain over the ulcer. In the same location, the patient had noticed a boil 10 days ago, which was subsequently opened and dressed by a physician. After 8 days, the dressing was removed, on which the present condition was found. During this period the wound had increased in size, and the patient also described a creeping sensation over the affected region. The patient was poorly built, lethargic, dehydrated and had a temperature of 101.4°F. Periorbital edema was also present. For several years prior to admission, the patient had been living alone, reportedly in unsanitary conditions. He had significantly low IQ and was not well oriented to the surroundings.

Examination of the wound revealed an ulcerated lesion on his right cheek, measuring 5 × 3 cm, extending superiorly to the zygomatic arch, inferiorly to the lower border of the mandible, laterally to 3 cm from the pinna of ear and medially to 1 cm from the corner of the mouth. Diffuse swelling was seen over the right side of the face. The ulcer contained hundreds of larvae in a necrotic slough [Figure 2]. The surrounding area was erythematous and swollen. Intraoral examination revealed poor dental hygiene, but there was no communication with the ulcer. The patient also had restricted mouth opening of about 10 mm. Hematological analysis was normal.

The treatment began with flushing the ulcer with turpentine oil. This creates an anaerobic atmosphere inside the ulcer, which forces the larvae to come to the surface, facilitating debridement. Followed by the administration of local anesthesia, the maggots were picked up with the help of tweezers. On the first day, around 80–100 maggots were removed. The larvae were grayish white with transverse rows. They were short, stout and light brown, with spikes tipping posteriorly along its tapering body. They were placed in a container and sent to a parasitologist, who later identified it as *Cochliomyia hominivorax*.

The ulcer was washed with saline, followed by the placement of a betadine dressing. The patient was administered Ampicillin, Gentamycin and Metronidazole. The following day, the ulcer was irrigated with hydrogen peroxide and then with turpentine oil. Around 15–20 maggots were removed, after which the wound was irrigated with saline followed by the placement of a betadine dressing.

This procedure was repeated for two more days, by the end of which the wound was properly debrided and the edema had also subsided considerably. Debridement followed by the placement of new dressing was carried out regularly, after which swabs were obtained from the ulcer and sent for culture. Once the culture results were negative, the patient was prepared for skin grafting.

Under IV sedation, local anesthesia with adrenalin was injected into the right cheek around the defect and also over the donor site at the right supraclavicular region. The wound margins were freshened and the outline was marked on the

donor site. A full-thickness skin graft was harvested from the donor site, and the skin graft was sutured to the defect with 4-0 nylon. The donor site was closed primarily with 3-0 silk. Pressure dressing with betadine gauze was applied over the recipient site. Antibiotics and analgesics were administered to the patient. The dressing was regularly changed; and in a week's time, the wound had healed adequately and the patient was discharged. Patient review was carried out the following week and the results achieved were satisfactory [Figures 3, 4].

DISCUSSION

A condition similar to myiasis was considered by the Hindu mythology as 'God's punishment of sinners.'^{19]} Myiasis can take many forms, including infection of skin, gut, nasal cavities, eyes and occasionally the oral cavity^[10,11]; but myiasis of this extent over the face is generally considered as a rare event. In the present case, it is presumed that the eggs were deposited in the wound directly by the flies. Low



Figure 1: Ulceration and swelling on the right cheek



Figure 2: The ulceration showing the presence of maggots



Figure 3: Post operative healing after one month



Figure 4: Post operative healing after four months

socioeconomic background, unsanitary living conditions and a significantly low IQ can be considered as contributory factors.^[12,13]

After the flies had laid eggs in the dead and decayed tissues, the larvae hatch in about 8–10 hours, soon after which they burrow into the surrounding tissues.^[14] They obtain nourishment from the tissues; and in this stage, there will be tissue inflammation ensuing discomfort, which makes the patient consult a doctor.^[15]

The standard treatment for myiasis is the manual removal, associated with or without the administration of topical asphyxiation drugs, which forces the larvae to come out. Various substances (ether, chloroform, olive oil, calomel, iodoform, phenol mixture) have been recommended for the treatment of myiasis; however, they were found to have controversial results. Ivermectin is found safe for human use. After oral ingestion of ivermectin, no hepatic or renal failure was reported. Knowing the species of larvae is worthwhile. In some cases, it shows multiple site involvement. In such cases, semisynthetic chemotherapy is indicated. Secondary bacterial infection along the surrounding skin should be treated with antibiotics. Metronidazole 400 mg thrice daily is most commonly used. The patient's diet should be supplemented with multivitamins, minerals and nutrients. It is important to remove all the larvae, otherwise the cavity does not heal properly and can also become chronically infected. Afterwards, the cavity should be cleaned and topical/oral antibiotics should be administered to prevent secondary infection.^[16]

The present case is unique while considering the success and speed of recovery of the condition in the patient, in spite of the manual method of repeated aggressive local debridement and minimal use of antibiotics. In the present case owing to the extent of the ulcer, a full-thickness skin graft was required to facilitate healing. Thus the present report describes an efficient and safe method for the treatment of myiasis.

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