CASE REPORT OF MAGGOT INFESTATION ON DIABETIC FOOT ULCER

ABSTRACT

Myiasis is originated from the Greek word, Miya, which means fly. Fly larva are called maggots. Infestation in humans by maggots is called myiasis. Fly maggots feed on and develop in the tissues of living beings and this condition is known as myasis. The maggot (larvae) invades the skin and subcutaneous tissue is known as Maggot infestation. It was found that farmers who are working in agricultural fields are more susceptible to this infestation. Myiasis symptoms may vary according to the fly type, the number of larvae, and the location of the infected area. Many organs can be infested by these larvae and the most common form is cutaneous myasis. The predisposing factors of cutaneous myasisare cutaneous immobilization, advanced age, poor social conditions, mental retardation, diabetes mellitus, alcoholism, vascular occlusive disease, and infected dermatitis as myiasis. Myiasis is more common in tropical and subtropical countries, especially in rural regions where people are in close contact with animals.Myiasisrepresents the fourth most common travel-associated skin disease. Here we report case on 55-year-old female patient was admitted with complaints of diabetic foot ulcer over left foot for 1 and half months and maggots were examined in the wound. The complete blood cell count [CBC] test shows that her HbA1c level was increased to 10.1%. The patient has undergone wound debridement on left forefoot and maggots were completely removed.

Keywords: Diabetic Foot Ulcer, Debridement, Infestation, Maggot.

1. INTRODUCTION

Maggot infestation or myasis is a parasitic infestation in which fly larvae deposit eggs in the tissues of living organisms where they feed and complete their lifecycle [1-2]. Majority of flies that cause myasis belong to the family Calliphoridae.*Cochilomyciahominivorax*is the most common etiological agent of myasisand the flies belongs to the order Dipthera[3]. Flies deliberately laying eggs in or on the tissues are called true myiasis [4]. The symptoms of myiasis differ depending on the insect's behaviour in relation to its host, i.e., obligatory or facultative myasis [5].In obligative myasis, maggots are necessary to feed on living tissues [e.g. *Oestrus ovis* (*Oestridae*) and

Wohlfahrtiamagnifica (Sarcophagidae)] whereas in facultative myasis flies deliberately take advantage of wounds or degenerative necrotic conditions as a site in which to incubate their larvae [6]. The most common type of myasis affects the skin (cutaneous myasis). Cutaneous myiasis subdivided into: traumatic or wound (Wound myiasis often occurs as an infestation of a fly larva into wound), furuncular (larvae penetrate the healthy skin and a furuncle develops) and cavitary (larvae invade mainly the digestive and urinary tracts).The symptoms of myiasisare extremities in back, and scalp. A small erythrematous papule resembles like an insect bite swells into boil like lesion with diameter 10-35mm within 24 hours later it will develops and become furnucular like nodule [7]. Diabetic patients who had myiasis fall into the wounded skin group. The treatment of myiasis is forcible removal of larva from the host tissue which is difficult because of the larva's tapered shape and many rows of spines and hooks that it uses to grip the tissue cavity. The larva is usually surgically incised and extracted under local anaesthetic. Any component of the larva left in the tissue cavity will cause an unpleasant inflammatory reaction, a bacterial infection, or the creation of a granuloma, so take care not to lacerate it. Except in cases where the larva has perished inside the lesion, surgery may not be necessary. Antimicrobials are given systemically in addition to the surgical treatment to prevent subsequent infection. The injection of lidocaine at the base of the tissue cavity in which the larva inhibits is an alternative to both surgical and suffocating procedures. The larva is forced to the surface by the swelling, where it can be readily gripped and removed. In cases involving many larvae, this approach may be limited, as the required doses of lidocaine or other anaesthetics could be toxic.

2. PRESENTATION OF CASE

A55-year-old female patient was admitted in the hospital with complaints of diabetic foot left with 2nd metatarsal plantar ulcer (2 x 2cm) for 1 and half months and maggots were observed in the wound. Patient had cellulitis at first but it was left untreated and went to work on farm, eventually her condition worsened. The patient had a history of pain and fever (on and off). Also, the patient was examined and her sensation was also reduced. On general examination the patient was conscious, oriented and afebrile. Patient's had diabetes mellitus for past 1 and half years and she was on her regular medications of Tablet Teneligliptin 20 mg once daily and Tablet Gliclazide 30 mg once daily. The HbA1C level is the gold standard test to measure long-term glycaemicmanagement. The patient's HbA1c level is elevated to 10.1%. At the time of admission, the patient's Random blood sugar [RBS] and Fasting Blood Sugar [FBS] level were also elevated to 362.3mg/dL and 185mg/dland started insulin therapy. The patient received treatment considering her basic disease (diabetes) with broad-spectrum antibiotics. The physician prescribed short acting insulin as Insulin Human Actrapid(20-20-0) and Premixed Insulin InsulinMixtard 30/70 (0-0-20) andVildagliptin 50mg (1-01)as Oral Hypoglycaemic agents [OHA]. The patient had immediately undergone for wound debridement on her left forefoot plantar 2nd metatarsal head ulcer and maggots were carefully removed and started broad spectrum of antibiotic Cefuroxime 750mg which belongs to the class of Cephalosporin. The patient was discharged after 6 days and she was stable and the wound was deemed to be in good health.

3. DISCUSSION:

In this case, the patient had had a diabetic foot ulcer for 1.5 months, along with diabetes for 1.5 years. Initially, the patient had cellulitis on her metatarsal plantar aspect of her left foot, measuring about 2 x 2 cm.Her diabetes was uncontrolled and her FBS and RBS levels were elevated by 185 mg/dL and 362 mg/dL at the time of admission. That means the patient is hyperglycaemic. Hyperglycaemia is caused by a disruption in glucose homeostasis, which leads to the activation of specific metabolic pathways, which in their abnormal state leads to vascular insufficiency, nerve damage, ulceration in the lower extremity due to plantar pressures, and foot deformity. Due to a loss of sensation, an injury to the foot induced by trauma to the affected region goes unnoticed by the patient. Resistance to infection is a major modulator of the pathophysiological image of diabetic foot lesions, and it is one of the factors mentioned above [14].

Here, the patient's HbA1c level was elevated to 10.1%. The HbA1C levels are used to measure long-term glycaemic management. The average blood sugar content of a typical red blood cell in peripheral circulation is measured over a 90-day period in this test. The more glycosylation of haemoglobin in red blood cells occurs, the higher the HbA1C level [13].The patient left the wound untreated and went to work on the farm. This leads to the infestation of maggots at the wound site. Maggot Infestation is defined as the infestation in live human and vertebrate animals by larvae of the order *Diptera* that feed for certain time periods on the host's dead or living tissue, body substances, or ingested food [8]. If the wound is left untreated, the first stage is penetration of into the exfoliating part and go deeper and damage the tissue [10].People who work in agriculture are more prone to maggot infestation. The physician examined maggots in her wound. To eradicate maggots from the wounds, the patient underwent surgical debridement, removing maggots from the surgical site, and started a broad spectrum of antibiotics.

4. CONCLUSIONS

Myiasis is a parasitic infestation of tissues or body cavities of mammals with dipterous larvae. Wearing protective leg coverings while working in agricultural fields can help to lower the prevalence of myiasis.As a pharmacist recommendation, the patient should maintain good cleanliness and maintain adequate debridement and daily dressing should be done. It is sufficient to treat those patients with antibiotics; however, removal of maggot eggs from the infected site is required to avoid future infection remission. Many doctors and clinical pharmacists still have insufficient awareness of the clinical assessment of human myiasis, owing to underreporting. To reduce morbidity, health care workers should be informed of identification and begin appropriate supportive therapy as soon as possible.

CONSENT

The author has collected and saved the patient's written consent in accordance with international or university.

ETHICAL APPROVAL

The written ethical approval has been gathered and retained by the author according to international or university.

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