

ORAL MYIASIS: A CASE REPORT

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ABSTRACT**INTRODUCTION**

Infestation of tissues & organs of human beings & animals with fly larvae is called myiasis. This condition is well documented in skin, nose, eye, ear, vagina and rarely in oral cavity. When tissues of oral cavity are invaded by parasitic larvae of flies the condition is termed as oral myiasis. It is frequently reported in people in tropical & sub-tropical countries & in people with physical & mental disability. Most of these Patients have difficulties in maintaining good oral hygiene due to poor manual dexterity. We hereby report a case of oral myiasis in 16yr old female with neurological deficit. Clinical features & management are discussed.

KEYWORDS

Oral myiasis, Larvae, Parasitic infestation.

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INTRODUCTION: Myiasis occurs when living tissues of mammals are invaded by eggs or larvae of flies, mainly from the order Diptera. The term myiasis is derived from Latin word 'muia' which means fly and 'iasis' means disease. The term was coined by Hope¹ in 1840. Myiasis was defined by Zumpt² as the infestation of live human and vertebrate animals by dipterous larva, which atleast for certain period feed on host's dead or living tissue, liquid body substances or ingested food. Recognized in ancient times, flies causing myiasis are still some of the world's most devastating insects, responsible for severe losses in animal husbandry, there is a higher incidence in rural zones, infecting domestic animals such as cattle and pigs, as well as house pets such as dogs and cats, leading to economic loss and health injuries of these animals. The distribution of human myiasis is worldwide, with more species and greater abundance in poor socioeconomic regions of tropical and subtropical countries. The fly larvae that cause myiasis can live as parasites in the skin, soft tissues, mouth, stomach, intestines, urogenital system, nose, ears, and eyes.³ Many types of flies can cause myiasis in humans such as Oestroidea, Calliphoridae and Sarcophagidae.

Oral myiasis: Oral myiasis was first described by Laurence in 1909.⁴ Presence of necrotic tissue and bad oral hygiene attracts the flies leading to oviposition. The eggs hatch within 24 hours and the larvae burrow into the host's tissue

and feed on the host's dead or living tissue. Feeding activity of the larvae may cause serious tissue damage, often accompanied by putrid discharge and ulceration, resulting in loss of function, injury to the skin, secondary bacterial invasion and death. Oral myiasis in human is usually reported among the poor in the developing world. Mouth-breathing during sleep, alcoholism, mental handicap, cerebral palsy and hemiplegia may facilitate the development of myiasis. Other contributing factors include poor public and personal hygiene. The predisposing factors include advanced periodontal disease, persistent mouth opening along with poor hygiene, chronic suppurative lesions, facial trauma and at tooth extraction sites. Cases of oral myiasis have been reported to occur in epilepsy patients with lacerated lips following a seizure and also in squamous cell carcinoma especially during the late stage.

CASE REPORT: A 14-year-old girl reported to the department of Oral & Maxillofacial Surgery with chief complaint of pain & swelling of upper lip since past 4 days. Patient gave a history of an epileptic attack 10 days before causing trauma to upper front teeth & gums, later she developed a wound in the same area which started to increase in size. Medical history revealed that she is a known epileptic patient & is under medication for this condition. Patient was mentally challenged, had incompetent lips & was febrile. Clinical examination revealed a diffuse swelling of upper lip with periorbital oedema in relation to left eye (fig. 1). Intraoral examination revealed a lacerated & necrotic gingiva in the region of maxillary incisors involving labial sulcus. Gingival swelling was approximately 2.5x1.5cms size & multiple maggots were seen within the necrotic gingiva (fig. 2). The surrounding tissue was erythematous & tender to palpation. Diagnosis of oral myiasis was made based on the presence of maggots. Routine blood investigations were

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within normal limits. Visible larvae were retrieved with tweezers (fig. 3) & copious irrigation of the wound was done with normal saline followed by povidone iodine. Maggots recovered were identified as larvae of *Chrysomya bezziana* fly by entomologist. Larvae appeared creamy white in color with transverse rows of segments & brown black tip anteriorly. These features were compatible with *Chrysomya bezziana* fly. Patient was prescribed with broad spectrum antibiotics Amoxicillin with Clavulanic acid & Paracetamol three times daily for 5 days. Patient underwent debridement for three consecutive days until no larvae were isolated. Follow up was done & wound healed uneventfully (fig. 4).



Fig. 1



Fig. 2



Fig. 3



Fig. 4

DISCUSSION: Many fly larvae causing human myiasis belong to the order diptera^{5,6} which means two winged flies. Life cycle of the fly from egg to adult may take 1 to 3 weeks for completion. Adult female lays eggs on open sores, wounds & mucous membranes in body orifices such as mouth, ear & nose.⁷ Eggs hatch within 24 hrs & the resulting larvae burrow into the host tissues with head downwards into the host tissue in a screw like fashion & feed on living tissue.⁸ Toxins released by these larvae & proteolytic enzymes released by surrounding bacteria destroy the host tissue on which the larvae feed.⁹ Larval development is completed in 5 to 7 days after which they cease to eat, wiggle out & fall to the ground to pupate. In the next 1 to 2 weeks adult fly emerges.¹⁰

Chrysomya infection may cause deliberate damage to the tissue & may even cause death in treatment neglected individuals. In the present case gingival laceration following epileptic attack was the probable in the development of myiasis while incompetent lips, lack of communicating ability, unhygienic living conditions are the main contributing factors.

The goal of treatment is the complete removal of the larva, with the prevention and control of secondary infection. Secondary infection may result if the larva is ruptured or killed within the wound. Broad spectrum antibiotics can be used to prevent the Secondary infection. Treatment of myiasis comprises of systemic & local approaches with maintenance of nutrition. Local measures include manual removal of maggots with or without topical application of asphyxiating agents which compel the maggots to wiggle out of the host tissue. These include turpentine oil, mineral oil, chloroform, ether.^{11,12} Wounds can be debrided using antiseptic medicaments such as 0.2% aqueous chlorhexidine, iodoform, ethyl chloride, mercuric chloride, creosote or turpentine oil.¹³ Recently a systemic treatment with ivermectin, a synthetic macrolide isolated from *Streptomyces avermitis*,¹⁴ has been used for treatment of oral myiasis. Introduced for medical use in the 1980s as a broad-spectrum antiparasitic drug, ivermectin proved to be effective against most intestinal parasites, most arthropods, and some nematodes. Medical use in humans started as a prophylactic treatment of filariasis. Different therapeutic schemes have been adopted for ivermectin use in the treatment of myiasis just one oral dose of 150 to 200g/kg of

body weight is the most commonly prescribed dose. The possible undesirable effects of ivermectin consist of dermal eruptions, fever, dizziness, migraines, muscular pains, and joint and lymphatic pain. Although promising, the use of ivermectin for the treatment of myiasis is an off-label treatment in many countries and should be reserved for selected cases.

CONCLUSION: Oral myiasis can be prevented by educating population especially low socioeconomic groups on maintenance of sanitation of surroundings, wound care & control of fly population. Special patients with physical or mental disability are more prone because of the difficulty in maintaining good oral hygiene due to poor manual dexterity. Parents & care taking personnel should be enlightened to ensure personal hygiene of these special people to prevent the occurrence of such diseases.

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