

Myiasis in an Infected Oral Wound in a Child with Neurologic Deficit: A Case Report

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ABSTRACT

Parasitic infestations like oral myiasis are uncommon findings in healthy persons. This condition generally affects extremes of ages (pediatric and geriatric individuals) and those physically challenged. Additionally, patients with poor social and educational background, suffering severe malnutrition, incapacitated subjects with systemic illness are prone to be infected. Removal of the larvae and wound management are the treatment of choice. In a majority of the cases, broad-spectrum antibiotics and proper care of oral hygiene are sufficient for satisfactory healing. In severe form of this disease, systemic macrolide and/or surgical reconstruction may be required.

KEYWORDS: Larva; Myiasis; Neurologic; Wound

INTRODUCTION

Myiasis is a parasitic infestation of live vertebrates (humans and/or animals) with dipterous larvae (maggots) that developed inside the host's dead or living tissue, liquid body substances or ingested food. Human myiasis is a rare entity in the developed countries and a frequent observation in rural areas of developing countries. Fly larvae are endemically present in a particular region or can be imported from other regions mainly by traveling. A favorable climate condition including humidity and warm environment help developmental stages of larvae.^{1,2} In human, the most commonly affected sites are skin, nose, ear, eyes, anus, vagina and mouth.^{3,4} Risk factors for developing this infestation include low socioeconomic conditions, residence in rural areas, neurologic deficit, mental deficiency and poor hygiene conditions. Fly larvae also have both medical and veterinary importance as legal evidence in forensic entomology.⁵ Here, we present a rare case of oral myiasis in a 14-year-old girl with neurologic deficit.

CASE REPORT

A 14 year old girl reported with an ulcerated oral wound in the upper front gum region since a week. Patient's low socio economic background correlated with the physical appearance and overall hygiene. The patient was unable to walk, therefore was carried by her mother along with a distant relative. Mother gave a history of extraction of upper milk tooth (51) by the patient itself, leaving a non-healing wound for the last 7 days. She observed common fly moving frequently on that wound and presence of the worms around the wound past 2 days. The patient consulted a rural unqualified practitioner and was given antibiotic and analgesics for the same. She also gave the history of neurological disorder which was not reviewed since 2 years.

General physical examination revealed abnormal and uncoordinated limb movements, impaired reflexes and improper facial expressions (Figure 1A). Extraoral findings included dolichocephalic head, leptoprosopic face, proclined maxillary anterior teeth, open bite, mouth breathing habit and drooling of saliva from the corner of the mouth. Intraoral examination revealed an ulcerated wound in anterior maxillary alveolus and vestibular region. The wound was foul smelling, sluggish, with a large (>10 mm) sinus opening filled with putrid exudates. 61 was periodontally compromised and mobile. Palatal morphology and Maxillary sinus opening was seen in relation to 61 (Figure 1B,C).



Fig.1: Pre-operative Photographs: (A) General physical appearance. (B) Intraoral palatal view. (C) Sinus opening in relation to 61.

After thorough clinical examination, the case was treated as an emergency because of continuously emerging larvae from the wound. Antisepsis of the wound was done with diluted 2% povidone-iodine solution. Worms were removed by artery forceps through the 51 socket

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and a labial sinus tunnel (probably created by the larvae) and curettage done with normal saline and 10% hydrogen peroxide intermittently. Due to vigorous manipulation of the tissue, larvae started leaving the wound spontaneously. A total of 7 larvae were removed which were approximately 1 cm in length, cylindrical, segmented and grayish white in color (Figure 2A-C). The patient was prescribed broad-spectrum antibiotics (amoxicillin-500 mg with potassium clavulanate-125 mg and metronidazole-400mg), analgesics (Ibuprofen-200mg with paracetamol 500mg) and 2% povidone-iodine mouth gargle to clean the wound regularly. She was also advised for a routine hematological investigation to exclude other systemic disorders. The patient was advised to come with previous medical reports in the next appointment.



Fig.2: Per-operative Photographs: (A) Chemical irrigation. (B) Spontaneous leaving of a larva through 51 socket. (C) Fly larva.

In the next appointment (after 2 days), there were signs of healing of the wound. Hematological investigations were within satisfactory limits and previous prescription medical reports suggestive of cerebral palsy. A cotton swab impregnated with turpentine oil was kept near the 51 socket and the sinus tunnel region for 10 minutes. No maggots were observed suggesting a complete absence of the fly larvae. 61 was extracted, wound debrided again and irrigated with 2% povidone-iodine and hydrogen peroxide solution. The mother was advised to continue previous medications and instructed for better personal, physical, oral hygiene care for the patient.

The patient was again followed up on the 7th day, and uneventful healing of the wound was observed. Therefore, she was being referred to a neurologist for necessary consultation regarding cerebral palsy.

DISCUSSION

The term oral myiasis was first introduced by Hope in 1940 and described by Laurence in 1909. This condition is a frequent observation in mentally compromised patients.⁶ Apart from the neurologic deficit, diabetes and peripheral vascular diseases may act as predisposing factors.⁷ Alcoholism, senility, hemiplegia and an open mouth during sleep may facilitate the development of oral myiasis.⁸ In addition, poor oral hygiene, thumb sucking

habits, seizures, incompetent lips, ill-fitting denture, uncleaned prosthesis, advanced periodontal disease, impaired muscular activity, infected tooth extraction sites or tidy oral wound or mutilated infected jaw fractures are prone to develop this kind of infestation.⁹

Myiasis is caused by larvae of flies belonging to the families of Diptera, which feed on living and dead tissues. Depending on the substrate fed by the larvae, myiasis can be primary (feed living tissue) and secondary (feed dead tissue). The infected oral wound can be a good environment to lay eggs for the maturation of these larvae into the adult fly. The larvae get nutrition from the infected tissue and reside deeper into the soft issues by making tunnels, or separating the gingiva and mucoperiosteum from the bone.¹⁰

In this particular case, the patient had a mental and physical deficiency with complete dependency on her caregivers. The parent's negligence towards the oral hygiene of the patient due to lack of education and rural background favored the contamination. In summer (season of mango), there is a huge number of dipterian flies increasing the susceptibility to lay the eggs in any warm and wet environment of an infected oral wound. Likely, this patient was accidentally infected by the fly larvae and overlooked for a few days.

Systemic Ivermectin (semi-synthetic macrolide) has also been tried in few cases successfully eliminating the maggots.¹¹ However, Ivermectin was not tried in the present case as the patient's condition improved after removal of larvae and proper oral hygiene measures. Routine broad-spectrum antibiotics had shown good results in the healing of the wound.

CONCLUSION

The present case showed that proper education and basic sanitation are the roots to eradicate fly larvae infestation. Implementation of oral health education and oral hygiene instructions to the rural population, especially in developing countries definitely will improve the quality of life and decrease the incidence.

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