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Case Report

ORAL MYIASIS IN A CEREBRAL PALSY PATIENT; A CASE REPORT AND REVIEW OF LITERATURE

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ABSTRACT

Oral myiasis is a rare condition caused by the invasion of tissues by larvae of flies. The condition commences as benign and asymptomatic, further progressing to mild to acute pain and in extreme cases may cause death of the patient. Poor oral hygiene and persistent mouth opening due to various reasons is the main predisposing factor. This is a case report of oral myiasis in a 15 year old boy suffering with cerebral palsy. Due to lip incompetence, gingival enlargement and lack of oral hygiene this condition was set in motion. Total of 38 larvae were found in upper anterior gingival sulcus. The diagnosis was based on the visualization of wriggling larvae. Treatment consisted local debridement of wound with manual removal of the larvae using turpentine oil and oral hygiene maintenance. Patient was on follow-up since six months. With this conservative management the resolution of the condition was extremely satisfactory.

INTRODUCTION

The term Myiasis derived from the Greek word "*myia*" meaning fly and "*iasis*" meaning disease was coined by Hope in 1840.[1] Myiasis is defined as infestation of live human and vertebrate animals with dipterous larvae which feed on the host's dead or living tissue, liquid body substances, or ingested food.[2] The most common sites for myiasis are the nose, eye, lung, ear, anus, vagina and more rarely, in the oral cavity.[3]

Lawrence first described oral myiasis in 1909.[4] It is a rare condition that can occur in any part of globe but the incidence is more in regions with warm and humid climate like tropical countries.[5]

Myiasis can be classified as given below[6]

The condition can be completely benign and asymptomatic, result in mild to acute pain, or in extreme cases cause death of the patient. Predisposing factors for oral myiasis are extraction wounds, poor oral hygiene, senility, mouth breathing during sleep, suppurative lesions, necrotic tissues, diabetes and perivascular diseases mainly in the elderly, severe halitosis, alcoholism, cerebral palsy, mental retardation and hemiplegia, and factors that favor persistent non-closure of the mouth. Cases of oral myiasis have been reported to occur following dental extraction, nosocomial infection, in drug addicts, following visits to tropical countries, and in psychiatric patients.[7,8]

This report describes a case of gingival myiasis in the maxillary anterior region in a child with cerebral palsy.

Classification Criteria	Subtypes
Based on Substrate	1. Primary Myiasis: Caused by biophagous larvae which feed on living tissue. 2. Secondary Myiasis: Caused by the necro-biophagous flies which feed on dead tissue.
Based on degree of the host dependence	1. Obligatory Myiasis: The fly larvae are completely parasitic and depend upon the host for completion of their life cycle. 2. Facultative Myiasis: The fly larvae are free living and only circumstantially adapt themselves to parasitic dependence to a host.
According to the mode of infestation	1. Accidental Myiasis: The larvae ingested accidentally with food produce infection. 2. Semi specific Myiasis: The larvae are laid on necrotic wound. 3. Obligatory Myiasis: The larvae affect undamaged skin.
Depending upon the anatomic sites	1. Cutaneous Myiasis. 2. Myiasis Of External Orifices: Oral, nasal, ocular, aural, anal, genital regions. 3. Myiasis Of Internal Organs: Intestinal, urinary region.

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Case history

A 15 year old boy with cerebral palsy referred by department of neurology to our department with the complaint of swelling in upper front teeth region and a fetid odor since three days. His parents also noticed worm-like structures in upper front teeth region. He was not taking any medication for cerebral palsy. On examination, patient had incompetent lips, and prognathic maxilla which leads to inability to close the mouth and very poor oral hygiene(Fig.1). Intraoral examination shows generalized gingival enlargement with live maggots and necrotic tissue in the gingival sulcus of upper central and lateral incisor(Fig.2). Deep pockets were present in relation to labial and palatal gingiva and contained about 10-12 visible living maggots.

Figure 1 Patient had incompetent lips, and prognathic maxilla which leads to inability to close the mouth.

Figure 2 Generalized gingival enlargement with live maggots and necrotic tissue in the gingival sulcus of upper central and lateral incisors.

Radiographic examination revealed no abnormality in the underlying bones or paranasal sinuses. Other routine investigations were normal.

Initially the superficial maggots were removed manually using forceps after which the area was meticulously irrigated with saline. A small gauze piece impregnated with turpentine was then placed at the opening of the wound for five minutes. 10-12 maggots were seen emerging out from the wound, which were then manually removed, with the help of clinical forceps, and sent for entomological examination (Fig.3).

Figure 3 Maggots removed from oral cavity.

This procedure was performed twice daily and total of 38 maggots were removed. By the fourth day, the oral cavity was free from maggots with satisfactory soft tissue healing (Fig.4). Tab. Amoxicillin 250 mg TID for five days was prescribed to prevent secondary infection. Oral hygiene instructions and reinforcement (to the parents and guardians) was carried out extensively.

Figure 4 4th day, the oral cavity was free from maggots with satisfactory soft tissue healing.

Entomological report revealed that the maggots were larvae of house-fly (Musca nebulo).

DISCUSSION

Musca nebulo is the commonest Indian house fly. The life cycle of a fly begins with the egg stage followed by the larva, the pupa and finally the adult fly. The developmental evolution via the larval stage requires an intermediate host.[9,10]

The patient in the present case was of low socio-economic status having poor living conditions. The poor oral hygiene,

lack of manual dexterity, lip incompetence, open bite and residence in a rural area were considered to be predisposing factors for larval infestation in this patient. The periodontal pockets contributed for the mechanical support, and provided suitable substrate and temperature for the survival of the larvae.

Moreover, the patient was dependant on his relatives for routine activities which leads to poor oral hygiene and he becomes the prime target for this condition.

The standard treatment options includes the local debridement, manual removal of larvae, oral hygiene maintenance and antimicrobial therapy for secondary infection.

The local application of chemical substances like turpentine oil, mineral oil, ether, chloroform, ethyl chloride, phenol, calomel, olive oil and iodoform can be used to promote larval asphyxia and inducing them to exit out of the wound to ensure complete removal of larvae.[11,12,13] Larvae rupture must be avoided. Failure to complete removal of the maggot can lead to foreign body reactions.[6]

Systemic treatment includes, the Ivermectin in doses of 150-200 mcg/kg body weight and repeated after 24 hours.[13] The ivermectin acts by blocking the nerve endings through the release of gamma amino butyric acid leading to palsy and causes parasitic death and spontaneous elimination by washing out the larvae.[12]

Ivermectin is contraindicated in children under the age of five years, or those who weight less than 15 kilograms and those who have a hepatic or renal disease.[14] In the current case patient is underweight so the use of ivermectin was avoided and broad spectrum antibiotics were given to prevent secondary infection.

As the old saying goes “prevention is better than cure” the disease should be prevented by maintaining good oral and personal hygiene. Special care needs to be taken in medically compromised, mental and/or physical disability patients as they are unable to maintain their basic oral hygiene. Awareness among the parents of such patients should be created to prevent the recurrence.

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