

CASE REPORT

Oral Myiasis- A seldom case report

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ABSTRACT

A fly larva's invasion in human or animal tissues and organs is known as myiasis. An uncommon pathology known as oral myiasis is linked to a medical condition, poor dental hygiene, mouth breathing, and lip weakness. Diabetes mellitus, peripheral vascular disease, mental retardation/neurological impairments, leprosy, cerebral palsy, hemiplegia, psychiatric problem, and senility with open wounds are among the medical factors that increase the risk of developing the disease. We present a case of oral myiasis of the maxillary anterior region of the palate, in a 63-year-old female with cerebral palsy and poor oral hygiene. . The existence of larvae served as the basis for the diagnosis. Oral medication was used in conjunction with the mechanical removal of larvae with a hemostat. This article emphasizes the value of oral healthcare for people with specific requirements while also discussing the therapeutic potential of maggots.

Introduction

Myiasis is derived from the Greek word "myia," which means fly, and was first used by "Reverend Frederick William Hope" in 1840. In 1909, "Laurence" published the first description of oral myiasis in a literary work. According to "Zumpt," it is the infection of living vertebrate animals and humans with dipterous larvae that feed, at least temporarily, on the host's dead or living tissue, bodily fluids, or food that has been consumed. Myiasis is a well-known condition in animals but is uncommon in people ^[1]. Although exceedingly infrequent in civilised nations, human myiasis is a widespread parasite Tropical and

subtropical infection. Any bodily part or cavity that is accessible for egg laying and larval development can be targeted by myiasis, although the most often affected anatomic locations are the nose, eye, lung, ear, anus, vagina, and, less frequently, the mouth ^[2]. A fly larvae infection that develops into a parasite is known as myiasis, and it can affect human or animal tissue. There are over 86 distinct species of flies in the order "Diptera" that have been linked to myiasis in people^[1] Globally, a higher incidence of oral myiasis (OM) is observed in tropical and subtropical regions of Africa, America and South East Asia due to favorable climatic conditions^[4]. It is classified as primary myiasis (caused by biophagous

larvae also called obligatory myiasis) or secondary myiasis (caused by necrobiophagous larvae also called facultative myiasis [5] The incidence of oral myiasis is less, as compared to cutaneous myiasis since the oral tissues are not permanently exposed to the external environment [1]

Predisposing factors for development of oral myiasis are anterior open bite, mouth breathing, neglected mandibular fractures, Cancrum Oris, extraction sockets and patient with neurologic deficit, diabetes, and peripheral vascular disease [7].

Case Report

A 63-year-old Female patient with cerebral palsy came to the department of oral medicine and radiology with the complaints of swelling and pain in the upper front teeth region for the past 10 to 15 days.[fig 1] She has complained of discomfort and an inability to eat for the past week in addition to having a temperature for the past two days. The patient came from a background of poor socioeconomic status and lived in a remote location. Past medical history revealed that she was diagnosed with cerebral palsy and on medication for the past four years. Intraoral examination revealed incompetent lips, poor oral hygiene with severe halitosis with ulceration on the anterior palatal and labial

gingiva of the hard palate extending from 16 to 22 with bleeding. And generalized gingival inflammation [fig 2] Closer observation revealed the crawling of maggots on the palatal aspect. There was a separation of mucoperiosteum of palatal mucosa with burrows and tunnels with gingival inflammation. Patient was subjected to radiographic examination in which IOPA revealed root stumps with respect to 14 and 15 [fig 3] and in OPG multiple root stumps with horizontal bone loss was seen which was suggestive of chronic generalized periodontitis with no maxillary sinus involvement.[fig 4] Routine blood investigation was within the normal limits except random serum blood sugar level which was of 250mg/dl indicating she was diabetic and the Elisa test for HIV was negative. Based on the presence of maggots and medical history, we arrived at a provisional diagnosis of oral myiasis.

Patient was hospitalized, cotton that had been treated with turpentine oil was put at the opening. Under local anaesthetic, the larvae were physically removed using tissue-holding forceps. Later, 45–50 maggots were hauled away for entomological analysis. The same procedure was continued for the next 2 days. Antibiotic therapy was started with cefazolin



Figure 1 : Extra oral profile of the patient showing swelling on mid facial region



Figure 2: Intraoral picture showing solitary swelling is present in upper maxillary front region

intravenous (IV) every 6 h, IV metronidazole 500 mg TDS (3 times a day), and 6 mg ivermectin was given orally and repeated for 3 days. After 3 days of hospitalization, the patient was discharged when there were no larvae. The wound healing was complete in 1-month follow-up.

Discussion

Myiasis has been defined by Zumpt ‘as the infestation of live human and vertebrate animals with dipterous larvae which at least for a certain period feed on the host’s dead or living tissue, liquid body substance or ingested food’ [8]. Oral myiasis of humans is associated with poor oral hygiene, alcoholism, senility, mental debility, mouth breathing, incompetent lip, cerebral palsy, severe halitosis, suppurating lesions, gingival disease and trauma. Poor oral hygiene is among the more important risk factors in oral myiasis.

After careful taking of history from the patient, we learned she had the habit of sleeping with her mouth open due to her medical condition. It was concluded that the patient did not look after her oral hygiene. Food trapped in the front inflamed area is difficult to clean. While the patient slept with her mouth open, the smell of the trapped, decomposed food in the inflamed gingiva attracted one or more flies to lay eggs in



Figure 3: IOPA showing the root stumps in first quadrant in relation to first and second premolar

the residual area. The main species reported to cause oral myiasis are *Cochliomyia hominivorax*, *Chrysomya bezziana*, *Musca domestica*, *Sarcophaga* species, *Luciliasericata*, *Lucilia cuprina*, *Musca nebulosa*, *Oestrus ovis*, *Calliphoridae*, *Dermatobia hominis*, *Hypoderma bovis*, *Hypoderma tarandi* and *Wohlfahrtia magnifica*. Larvae of *Clogmia albipunctata* had been reported to cause human nasopharyngeal myiasis [9.] The life cycle of the fly starts with an egg followed by the larval stage, pupa, and finally, the adult fly [1] In 12–18 hours, the egg will hatch. The larva has segmental hoods that face backward throughout the first and second stages. The larva can anchor themselves to the nearby tissue with the aid of the hook. These hooks make it challenging to separate the larva from its host.

In 8–12 days, the larvae reach the prepupal stage (third instar stage). They squirm and flop to the ground where they pupate. They are parasitic on humans for around 6 to 8 days when in the larval stage. The pupa stage is temperature-dependent, and warm weather promotes growth. The adult fly emerges in the next 1 week–2 months, depending on the temperature. [1] The burrowing of larvae causes separation of the mucoperiosteum from the bone. The opening of the burrow with induration of the marginal tissues forms a dome-shaped “warble.” The posterior spiracles are exposed to open air for respiration such that their head is positioned downward. They are photophobic. They tend to hide deep into the tissue with a suitable niche for development into a pupa. The diagnosis was made clinically with larval movement [1] In the present case, the location of the lesion is in the anterior labial and palatal gingival of the maxilla, implying direct inoculation of the tissue. The necrotic ulcer and separation of mucoperiosteum are suggestive of the burrowing activity of larvae.

The current state of inadequate hygiene, along with a lack of manual dexterity and continuous mouth opening in this case, may have



Figure4: OPG showing multiple root stumps with horizontal bone loss was seen which was suggestive of chronic generalized periodontitis

contributed to appropriate temperature and substrate for the larvae.

Conclusion

Following the right hygienic, personal, and oral hygiene practises will help avoid oral myiasis. Additionally, the illness might be managed by providing regular preventative measures to the group that is susceptible, such as those who are physically, cognitively, or medically challenged, in addition to prompt medical care.

It is crucial to inform parents and guardians of the situation.

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