

## Severe Oral Myiasis in the Anterior Segment of the Mandible - Diagnosis, Treatment and Prevention

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### Abstract

Myiasis is the infestation of tissues and internal organs of animals and humans by certain Dipteran fly larvae (housefly) and their species. Oral myiasis is a very rare condition mainly affecting elderly, bedridden or trauma patients. These types of diseases are more common in developing countries e.g. Asia and Africa. Once the larvae is being removed, tissue recovers very swiftly with no subsequent complications and with no need for further treatment in some cases where tissue loss is negligible. Here, we highlighted a case report of oral myiasis within lower lip, chin and gingiva of a healthy 75-year-old female patient caused by the larvae of Dipteran fly, in which infection might have been due to poor oral hygiene or sanitary conditions.

**Keywords:** Oral-Myiasis; Turpentine Oil; Maggots

### Introduction

The term Myiasis was coined by Hope in 1840, Myiasis (Greek: myi = fly) refers to infestation of living tissues of humans and animals by Dipterous eggs or larvae [1]. It is well known and frequently reported tropical disease in vertebrate animals but very rare in humans due to improved sanitary conditions. Poor oral hygiene, Trauma, Senility, Learning disabilities, physically and mentally challenged conditions are the common predisposing factors of maggot formation in human beings. Oral Myiasis can cause very rapid tissue loss, disfigurement and deformity which requires immediate treatment [2]. Treatment consists of manual removal of maggots from the infected area after the application of chemical agents. Good sanitation, personal and environmental hygiene, cleanliness and special care of debilitated persons are the best methods to prevent oral myiasis [3]. This case report describes the presentation of oral myiasis caused by *Musca Nebulo* (common house fly) in a 75-year-old female patient. The patient was treated by excision of necrotic tissue along with manual removal of maggots by topical application of turpentine oil, followed by regular follow-ups and reconstruction surgery after the healing of soft and hard tissue.

### Case Report

A 75-year-old female reported to our dental department with the severe facial deformity and numbness in lower jaw anterior region. Patient was underweight, malnourished and aged with no relevant medical history. Her blood pressure, glucose level and other vital signs were normal within acceptable limits.

On Clinical examination, Patient had a very poor oral hygiene, fetid odor and advanced soft tissue loss with exposed anterior mandible bone (Figure 1). Lower lip, chin region and gingiva were completely damaged by maggots and their larvae. On more close examination, multiple long, test tube-shaped orifices showing pulsatile movements probably due to the movement of larvae and their habitat area were also noticed. The adjacent soft tissue appeared erythematous, shiny and necrotic along with loss of sensations. The interdental areas of the adjacent mobile teeth with severe plaque and calculus revealed several additional orifices with larvae showing wriggling movement. Provisional diagnosis of Severe oral myiasis was made on the basis of clinical examination and visible larval movements (Figure 2). A gauze piece soaked in turpentine oil was applied multiple times to encourage larval movements for their easy removal. Larvae were then collected manually and removed very carefully under magnifying loops with the help of tweezers and high volume suction. More than 100 maggots were grasped and removed on the first sitting (Figure 3). Larvae were removed further in next sittings manually as described above for 03-05 days (Figure 4). Antibiotics, analgesics along with multivitamins were prescribed to the patient. After successful removal of all maggots and their larvae patient was planned for reconstruction surgery.



Figure 1



Figure 2



Figure 3



Figure 4

## Discussion

Laurence in 1909 was the first to describe Oral myiasis.<sup>4</sup> It was considered to be rarest disease owing to the fact that oral cavity seldom provides a favorable site for infestation and harboring of larvae. The term myiasis refers to inhabitation of living tissues of humans or animals by *Diptera* or *Musca* *Nebulo* larvae. The species of flies which commonly associated with myiasis are *Cochliomyia hominivorax*, known as the screw worm fly, *Dermatobia hominis* or human botfly, *Sarcophagidae* species, *Alouattomyia baeri* and *Anastrepha* species family [5].

On the basis of larval feed, Myiasis can be classified into primary and secondary. When larva feeds on living or live tissue it is called as primary myiasis while in case of Secondary myiasis larvae feed on necrotic tissues. Depending on the condition of the involved tissue it can be further classified into accidental myiasis (larvae ingested along with food), obligatory myiasis (larvae affecting intact skin) and semi-specific myiasis (larvae laid on necrotic tissue in wounds or injured sites). It can affect cutaneous tissues, external orifices and internal organs of the body. Sometimes, it may be generalized as well [6].

The most common sites of myiasis are the open cavities of the body like nose, lungs, ear, anus, vagina and very rarely the oral cavity. As oral tissues are not exposed permanently to the external environment so the Incidence of oral myiasis as compared to cutaneous myiasis are either very less or negligible. Male are affected more as compare to females because of their more outdoor activities and neglecting the oral hygiene.

Diagnosis of oral myiasis is purely depends on the clinical picture of pulsating larvae. The most common treatment of oral myiasis is mechanical removal of larvae using artery forceps or simple tweezers along with high volume suction. Topical application of several chemicals such as turpentine oil, mineral oil, ether, chloroform, ethyl chloride, mercuric chloride, creosote, saline, phenol, calomel, olive oil, iodoform, which irritate the maggots causing more easy larval asphyxia and forcing them out of their hiding places can be used to ensure complete removal of larvae.

Other adjuvant measures like, Ivermectin, a semi-synthetic macrolide antibiotic along with multivitamins, mineral and nutrients can also be used. Apart from this personal and oral hygiene is must to avoid any maggot formation. In severe cases of facial deformity and tissue loss, facial reconstruction with soft tissue grafts can be attempted [7-10].

### Conclusion

These parasitic infestations can be controlled by uplifting the quality of life and improving personal cleanliness measurements as these conditions are very rare or unknown to the western world. Maintaining good oral and personal hygiene along with Controlling fly population is also very important. Special needy patients like patients with mental and physical disabilities requires special oral and personal hygiene care along with good nutrition.

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