

# Case Report

## An unusual presentation of oral myiasis in maxilla: A case report

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### ABSTRACT

Myiasis is a universal term for infection by the parasitic fly larvae that feed on their host, which can be either living or dead tissue. Oral myiasis is still “rare” and “unique” due to the fact that oral cavity rarely provides the necessary habitat conducive for a larval lifecycle. In humans, the most commonly affected sites are the nose, eyes, skin wounds, sinuses, lungs, ears, gut, gallbladder, vagina, nasal cavities, and rarely the mouth. Here, we report a case of oral myiasis in an 83-year-old female patient reporting with swelling in the maxillary anterior region with the movement of bugs inside the mouth since 2–3 days. Treatment of myiasis has been discussed in the case report.

**Key words:** Larvae, Myiasis, Oral, Parasite

Myiasis is a rare disease caused by an infestation of tissue by larvae of flies. Oral myiasis refers to the invasion of tissues, organs, and certain body cavities of live human vertebrate species by the dipteran eggs or larvae [1,2]. It is well known and frequently reported tropical disease in vertebrate animals but occur rarely in humans [3]. The occurrence of myiasis in the oral cavity is unusual as oral tissues are rarely exposed to the external environment [4].

Oral myiasis is more commonly ascribed to predisposing anatomical, and/or medical conditions where oral cavity is being exposed to external environment for a prolonged time as in case of mouth breathing, anterior open bite, incompetent lips, cerebral palsy, following tooth extractions, poor oral hygiene, halitosis, neglected mandibular fracture, and certain local pathological conditions such as cancrum oris and oral malignancies [1,2]. Higher incidence is reported in tropical regions of Africa, America, and South East Asia, where warm, humid climate prevails almost throughout the year [5].

A rather simple and logical classification of infestation based on the condition of the involved tissue can be given as follows: When larvae are ingested along with food, they are known as accidental myiasis; when larvae are laid on the necrotic tissue of the wound, they are known as semi-specific myiasis; and when larvae affect undamaged skin, they are known as obligatory myiasis [3]. Treatment consists of manual removal of larvae (maggots) from the oral cavity after application of chemical agents. Good sanitation, personal and environmental hygiene, cleanliness, and special care for debilitated persons are the best methods to prevent oral myiasis [4]. This case report describes the presentation of a rare case of oral myiasis in an 83-year-old woman.

### CASE REPORT

A 83-year-old female reported to the outpatient of dental department of a hospital, Delhi, with a chief complaint of bugs coming out of the mouth since 2–3 days. She appeared undernourished and weak. No contributory medical history was revealed. She was accompanied by her son who gave the history of swelling in upper lip region since 15 days which were gradually subsiding slightly by it. The patient was having no history of trauma or dental extraction in the anterior maxillary region. The patient has not been eating properly for 1 week. The patient was living in a village with low socioeconomic status having poor living conditions and reported to the hospital for the 1<sup>st</sup> time.

Her vitals and routine blood examination results were well within acceptable limits. Clinical examination revealed poor oral hygiene, foul odor, multiple missing teeth, and root stumps. A huge burrowing lesion approximately 1.2×1.4 cm<sup>2</sup> was located in the maxillary anterior labial sulcus region (Fig. 1). The lesion presented with an outer area of erythema and then an inner aspect of the lesion was darkish with a greenish hue. The lesion was having pulsatile movements probably due to the movement of larvae. A number of maggots were clearly seen in the immediate surrounding necrotic area which soon disappeared as they burrowed deeper into the tissues. The mucosa appeared erythematous and necrotic.

The provisional diagnosis of oral myiasis was made. The primary aim of treatment was to remove the larvae and prevent them from burrowing into deeper tissues. Cotton bud impregnated with turpentine oil was placed at the orifice of the lesion for approximately 3–4 min under aseptic conditions (Fig. 2). Larvae

then started coming out of lesion which were then grasped and manually removed with the help of tweezers. Each larva measured about 7–9 mm cylindrical in shape, typical creamy, and whitish in color. Over 20 maggots were removed on the 1<sup>st</sup> day. Larvae were collected in a kidney tray filled with spirit (Fig. 3). Larvae were removed daily manually as described above.

Oral therapy was administered with tab ivermectin 3 mg BD, tab augmentin 625 mg BD, and tab metronidazole 400 mg TDS for 5 days. The patient was advised to have a proper diet. By the 5<sup>th</sup> day, the site was clear of larvae and showed signs of healing (Fig. 4a). The patient was now advised to rinse her mouth with 0.2% chlorhexidine mouthwash 3–4 times/day. After 2 weeks, healing was found to be progressive in nature (Fig. 4b). 1-month follow-up showed complete healing of the lesion (Fig. 4c). As further control and proper care are necessary to avoid the recurrence of larvae, so maintenance of oral hygiene was strictly advised.

## DISCUSSION

Myiasis was first described by F. W. Hope in 1840 which has been defined as a pathological condition in which there is an infestation of living mammals with dipterous larvae, which, for at least a certain period, feed on living or dead tissue in the host and develop as parasites [1,2]. Oral myiasis was first described by Laurence in 1909 [6]. Myiasis of the oro-dental complex is a rare entity commonly caused by common Indian housefly *Musca Nebulo*. They are found commonly in human habitats with poor hygiene and passable sanitation especially during summer and rainy season [7]. Many species of dipterous flies among the genera *chrysomya* and *cochliomyia* have been reported to be the most important obligatory myiasis among human and/or domestic animals [8].

Oral myiasis normally develops in decaying tissues [9]. The requisites for egg laying and survival of the larvae are moisture, necrotic tissue, and suitable temperature. Thus wounds, open sores, scabs, and ulcers contaminated with discharges make possible way for the same [2]. Blood and body fluids may also attract the common flies. The prevailing oral hygiene status provides the suitable substrate and temperature for the larvae as in our case. The present case also showed the larvae burrowed deep inside the wound in the maxillary labial vestibule. The necrotic ulcer and intense halitosis seen in the present case are suggestive of the destruction caused by toxins released by the larvae.

In the present case, the location of the lesion is in the anterior part of the maxilla, implying a direct inoculation of the tissues. Clinically, the lesion may present as oral mucosal swelling, gingival inflammation, laceration, ulceration, periodontal disease, non-healing extraction wound, jaw bone fracture, and secondary infestation to cancrum oris [1].

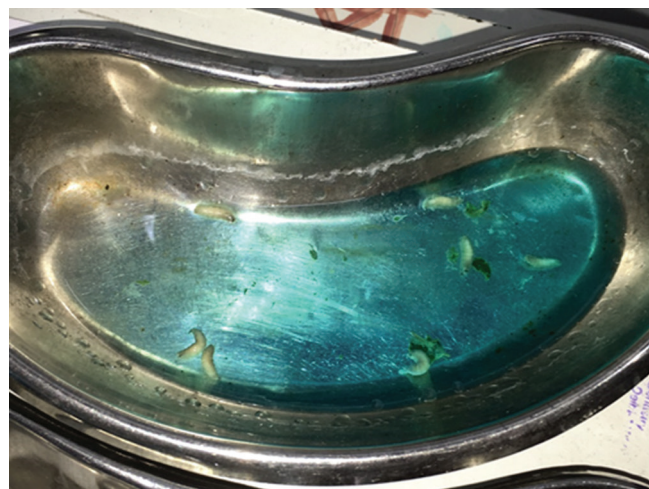
The traditional management of oral myiasis is mechanical removal using hemostats, ordinary clinical pincers, or tweezers. Larvae rupture must be avoided [6]. However, the presence of hooks makes manual removal of larvae from the host difficult. Hence, when multiple maggots are detected as observed in our



**Figure 1:** Intraoral view of the lesion (larvae moving over the labial sulcus)

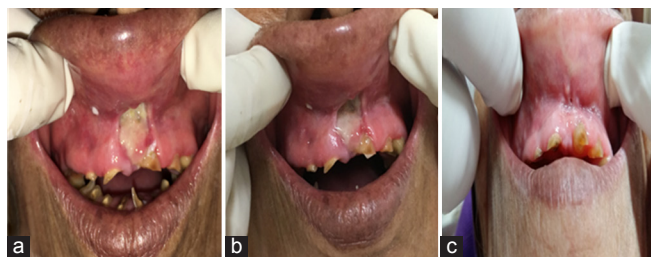


**Figure 2:** Cotton bud impregnated with turpentine oil left at the site for 3–4 min



**Figure 3:** Larvae removed from the lesion and discarded in a kidney tray

case, elimination can be achieved with agents such as turpentine oil or topical irritants such as ether, chloroform, olive oil, calomel,



**Figure 4:** Follow-up period, (a) after 5 days, (b) after 2 weeks, and (c) complete healing after 1 month

iodoform, and phenol mixture [2,8]. This irritates the maggots causing larval asphyxia and forcing them out of their hiding place from where they can be removed easily [6].

Extensive rinsing and irrigation of lesion in early stages of treatment are contraindicated as it may force larvae to hide deeper into tissues which would make retrieval of these larvae difficult. Treatment approaches other than procedural removal of the maggots include occlusion and administration of larvicides. These techniques can be used in addition to manual removal, or if manual removal is not possible [2]. Placement of a variety of substances such as petroleum, nail polish, animal fat, beeswax, paraffin, hair gel, and mineral oil deprives larvae of oxygen, thereby occluding infested wound which either kills the larvae or induces them to move more superficially where they can be removed more easily [1,2].

Nutritional support of the patient with multivitamin tablets and treatment of secondary bacterial infection in surrounding skin with antibiotics is mandatory. Early diagnosis, with adequate and careful surgical exploration of the lesion, seems to forestall extensive tissue damage and morbidity, and the necessity for complex surgical repairs that might be indicated at late stages of the disease [2]. Delaying the treatment or neglecting the condition may lead to serious consequences as larvae may push into deeper tissues or organs. The possibility of oral myiasis should come to mind in relation to oral mucosal swellings with no apparent

diagnosis in patients from areas where parasites that cause myiasis is endemic.

## CONCLUSION

As the old saying goes “prevention is better than cure” the disease should be prevented by controlling fly population, proper health-care facilities, maintaining good oral, and personal hygiene. Special care needs to be taken in medically compromised, old age dependent patients or in rural areas lacking in health and sanitation facilities as they are unable to maintain their basic oral hygiene.

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