

Maggots In Oral Cavity (Oral Myiasis): A Case Report

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Abstract: Oral myiasis is a relatively rare and uncommon clinical condition arising from the invasion of body tissues or cavities of living animals or humans by maggots or larvae of certain species of flies. This condition may be observed in suppurative oral lesions, alcoholism, senility and also maintaining poor oral hygiene by patients during orthodontic treatment, invasion and growth of larvae during and after maxillofacial injuries. The current article presents with management of oral myiasis during orthodontic treatment, and in oral and maxillofacial injuries. [Patil S Natl J Integr Res Med, 2021; 12(6): 104-108]

Key Words: Oral Maggots, Maxillofacial Injuries

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Introduction: Maggots or larvae presence in the nasal cavity is called nasal myiasis and is defined as infestation on humans and vertebrate animals by larvae of insects which feed themselves for certain time on living or dead tissues from the host or on fluid substance¹. Oral myiasis was first described by Laurence in 1909. Oral myiasis is defined as presence of larvae in oral cavity which is relatively rare condition, and term "myia" meaning invasion of vital tissue of humans or other mammals by fly larvae. The term myiasis was coined for this distinct clinical condition by Reverend F. William. Hope in 1840².

Incidence of oral myiasis is comparatively less than cutaneous myiasis as oral tissues are not always exposed to external environment³.

Simple and logic classification of this infestation based on the condition of the involved tissue can be mentioned as; i) accidental myiasis; larvae ingested along with the food, ii) semi specific myiasis; larvae laid on necrotic tissue of wound, iii) obligatory myiasis; in which larvae affects the undamaged skin⁴ and also anatomically as intestinal, nasal, cutaneous, ophthalmic, oral and urological⁵.

Many parasites are present in wild and domestic animals which are infectious larvae and have capability to complete their life cycle only inside their natural host. The larvae infect the humans and they are usually not able to grow properly and these larvae migrate through the visceral or subcutaneous tissue which leads to cause lesions

in the skin and mucosa. These infections are more common in tropical countries and in Central and South America. Contamination occurs usually by direct contact of skin or mucosa with contaminated surfaces like sand or vegetation, which are favoured places for domestic animals to deposit their feces⁶.

Maggots are the larvae of house flies, generally infest in nose, nasal sinuses, and oral cavity. These flies of genus chrysomyia are attracted towards foul smell of necrotized tissues. Presence of these causes irritation, itching, sneezing, lacrimation and headache. In some cases blood discharge and larvae crawling out from nose and the oral cavity⁷.

Management of myiasis includes physical removal larvae and wound debridement with either topical or systemic medication. Some are the agents which are effective to eliminate larvae are ether, chloroform, iodoform or olive oil⁸.

Sometimes, nasal ulcers and rhinorrhea and bad smell causing attraction of flies and leaving their eggs during sleep⁹. Visceral larva migrans is rare and normally affects the liver in conjunction with pulmonary infiltration usually caused by a larva of *Toxocara* genus¹⁰.

The present article report a case of numbers of larvae or maggots observed in lacerated region of gingiva, lip, and palate in 14 years old boy on third day of accident and managed with only turpentine solution without any mechanical

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intervention to eliminate the maggots followed by reduction and fixation of fracture bones.

Case Report: A 14 year old boy visited to our unit with the complaint of swelling and pain on right and left face on third day after road traffic injury. Patient was undergone preliminary treatment in private hospital and later referred to our unit for further management.

Patient was conscious, well oriented, and responding. On inspection, facial swelling and asymmetry was observed with bilateral nasal bleeding. Tender on palpation over right infraorbital rim, lateral nose, nasal bridge, and over antrum was observed.

On intraoral inspection and palpation following features are observed; patient was under orthodontic treatment past 6-8months, laceration and tender at gingiva of right lateral and canine teeth, and in mid-palatal region.

Tender on palpation observed over labial frenum, right anterolateral wall of antrum, right infra-temporal region. Provisional diagnosis was ZMC fracture (Zygomatic-complex fracture). Routine antibiotics, analgesics and fluids are started.

Routine blood investigations and computed tomography (CT) with axial and coronal sections were advised.

Later on next day, patient started complaining of severe pain at right face especially at right gingiva in relation to lateral and canine teeth, and in upper lip.

On re-examination dark, bluish discoloration and detached gingiva due to forceful penetrated orthodontic long loop wire deep in to the gingival tissue was observed at same region.

Severe pain may be due to loop wire irritation and at the same time it has been removed to relieve the pain. Surprisingly; plenty of maggots are observed at right gingival region between lateral and canine, mucosa of upper lip and at palate region (Figure. 1, and 2).

The endoscopic examination confirmed the presence of maggots and involvement of other structures but unfortunately we could not record the pictures due to technical error.

Figure 1: Intraoral View Showing Maggots At Gingival Region



Figure 2: Intraoral Palatal View Showing Pathological Ulcer And Mid Palatal Laceration



Computed tomography shown presence of nasal bone and undisplaced mid-palatal fracture. Axial section showing thickening of nasal conches and antrum lining along with number of mucosal perforations observed in between these structures (Figure. 3 and 4).

Figure 3: Pre-Operative CT- Axial Section

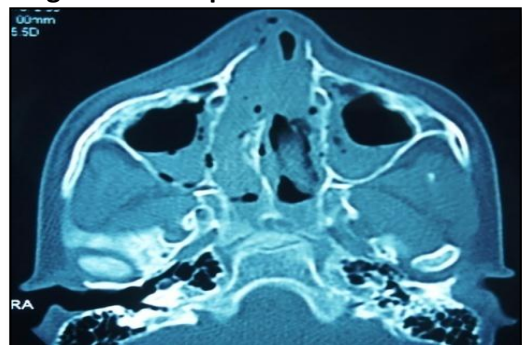


Figure 4: Pre-Operative CT- Coronal Section



Turpentine solution was used to eliminate these maggots and each was measuring about 4-6mm in length (Figure. 5).

It has been observed closely and confirmed that complete elimination of maggots after multiple use of turpentine solution for 8-10 days later which does not required any mechanical removal of maggots thereafter.

During this period the patient was under following medication; Taxim 1gm b.d., Metrogyl 100ml t.i.d., IV for 5 days and Voveran 75mg t.i.d., IM for 5 days.

Later fracture reduction for nasal bone fracture and fixation was performed by using miniplate osteosyntheses at below the anterior nasal spine for midpalatal fracture (Figure.6).

Postoperative PNS radiograph and wound healing was evaluated during the period of 9 months (Figure.7 and 8).

Figure 5: Maggots Measuring About 4-5mm In Length



Figure 6: Intraoperative Fracture Reduction, Fixation Using Miniplate (4 Hole With Gap) 1.5mm And 1.5mm X 6mm Screws



Figure 7: PNS View Of Skull Radiograph Showing Miniplate Osteosyntheses After 9 Months



Figure 8: Postoperative Intraoral View Showing Wound Healing After 9 Months Of Follow Up



Discussion: Humans are the intermediate host for larvae development so infestation of maggots occurs in humans in two ways either by ingestion of infected material or by direct inoculation in wounds⁴. Question is whether presence of maggots are there previously due to necrosed gingival tissue by continuous gingival irritation due to orthodontic loop or entered in the lacerated and exposed orofacial region during or after road traffic injuries?

Infestations of parasite frequently occur in rural areas and infect the livestock and pets such as dogs and cats². Flies usually lay eggs around 200 in one time and a larva comes out within 24 hours. Unfortunately, patient does not aware of the condition till 3rd and 4th day⁷. Later these larvae infest the several parts of the body like cutaneous, oral, ophthalmic, urogenital, intestine, and nasopharyngeal³. Infestation of parasites commonly seen in oral and maxillofacial injuries, senility, mouth breathers, alcoholis, old age group especially with mentally handicapped patients. In most of the literature male predilection is more compare to female because of their more outdoor activities and oral hygiene negligence^{4,5}. Jaeger et al reported a case of larvae migration causing oral myiasis by direct

contact with contaminated feces of dog and cat¹⁰. Once fly lays eggs in decayed and dead tissues soon after few hours they burrow in to the surrounding tissues and begins with tissue inflammation ensuing discomfort^{2,4}. The predisposing factors includes unhygienic living conditions, immunocompromised state, and with low socioeconomic status⁴. Patients usually presents with epistaxis, rhinorrhea, nasal obstruction, fetid nasal odour, headache and facial pain. Rhinoscopy shows oedematous mucosa, necrotic mass and larvae. These larvae can diffuse to paranasal sinus, lacrimal duct, orbit, face and in to intracranial region leading to serious complication like meningitis.

Rao G.R reported three cases of nasal myiasis and observed nasal ulcers, rhinorrhea and bad smell causing attraction of flies and leaving their eggs during patient sleep⁹. Diagnosis of oral myiasis is usually made by clinical picture of pulsating larvae⁴. Sharma et al reported, varies of substances are used to eliminate these maggots like; mixture of chloroform and turpentine (1:4), ethylene chloride, ether and cocaine, iodoform or olive oil and Ivermectin (is macrolide activated by gamma amino butyric acid liberation) at 1% leads to parasitic death and spontaneous elimination.

One oral dose of Ivermectin 200 microgram/Kg will provide better result within 48 hours has been explained in the literature to treat myiasis^{1,4,8}.

Well being of patient is the priority of myiasis therapy in case of multiple larvae extensive tissue destruction. As advocated in literatures, adjuvant measures like ether or comparable solvents are preferable to eliminate maggots. These solvents cause larval asphyxia and due to irritation forcing them to come out from their hiding place⁴. Other solutions like mercuric chloride, creosote, saline, phenol, calomel, olive oil can be used to complete elimination of all larvae.

Antibiotic regimen includes ampicillin, amoxicillin or metronidazole to avoid secondary infection, multi vitamins tablets as nutritional support. In case of persisting presence of larvae after a week, surgical exposure of involved region and elimination is carried out. As in our case we are successfully eliminated these maggots by using turpentine solution and unable to send the tissue for biopsy which is affected by larvae to identify kind of species in which these belongs to. We are

considering that, the region of oro-nasal and in antrum, larva frequently affects low socio-economic level individual with poor hygiene habits, medically compromised and in immune-compromised patients. It is equally important to observe that; larva may enter the body even in case presence of necrosed tissue due to long term gingival irritation by loop or during and after road traffic accidents.

Conclusion: In such cases proper evaluation, diagnosis, primary management and immediate life saving treatment has to be carried out to eliminate these larva. Every possible effort should made to eliminate maggots from the orofacial region either by conservative or surgical manner before undergoing orofacial fractures reduction.

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