

Oral myiasis in paralytic patients with special needs: A report of three cases

ABSTRACT

Oral myiasis is invasion of the soft tissues of oral cavity by the parasitic larvae of the flies. This condition affects debilitated, mentally challenged individuals. These patients are not physically or mentally endowed to ward off flies or complain about worms burrowing their way into oral wounds. This study describes three cases of orofacial myiasis, removal of the live maggots, supportive treatment, and management of the cases with application of turpentine oil and also highlights oral health care in the patients with special needs.

Keywords: Maggots, paralytic patient, supportive therapy, turpentine oil

INTRODUCTION

Myiasis, a term first introduced by Hope (1840), refers to the invasion of tissues and organs of animals and human wounds and certain body cavities by the dipteran larvae which manifests as subcutaneous furunculoid or boil-like lesions. Oral myiasis is a rare pathology and a risk to the patient's life.^[1] Infestation of the orofacial region with live maggots is a distressing condition, and many clinicians are not aware of the existence of such an entity.^[2] Common predisposing factors are poor oral hygiene, halitosis, trauma, senility, learning disabilities, and physically and mentally challenged conditions. Oral myiasis is still more "rare" and "unique" owing to the fact that oral cavity rarely provides the necessary habitat conducive for a larval lifecycle.^[3] This article presents three cases of oral myiasis and its treatment. The protocol for the cases has been approved by the ethics committee.

CASE REPORTS

Case 1

A 90-year-old female patient reported with worms in upper jaw. The patient had quadriplegia for 14 years. She was on Ryles tube feeding for 14 years with very ill health. The Ryles tube was not changed for 6 months. Intraorally, necrotic grayish black tissue was seen involving whole maxilla with

foul smell and few areas of bone were exposed [Figure 1]. On examination, three to four larvae were coming out from the exposed area of gingiva along with multiple tunnels and burrows. Lesion was treated with turpentine oil twice daily till no maggots appear on the site. Cotton bud impregnated with turpentine oil was applied to the lacerated mucosa for a minimum of 10–12 min and irrigated with normal saline solution. After these, maggots were manually removed with the help of blunt tweezers and curved forceps [Figure 2]. The patient was advised to maintain proper oral hygiene and rinse the wound with 0.2% chlorhexidine mouthwash, 3–4 times daily. Endovenous rehydration and antibiotic therapy were started. However, the patient expired during the course of treatment.


Case 2

An 84-year-old female patient reported with worms in lower jaw, tongue, and palate. This patient was also paralytic for

SONAL PRIYA BHANSALI, ANJALI DAVE TIWARI, DINESH KUMAR GUPTA, SUMIT BHANSALI¹

Departments of Oral and Maxillofacial Surgery and ¹Prosthetics, RUHS College of Dental Sciences, Jaipur, Rajasthan, India

Address for correspondence: Dr. Sonal Priya Bhansali, H-1 Vinay Path, Kanti Chand Road, Bani Park, Jaipur, Rajasthan, India.
E-mail: dr.sopr@gmail.com

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12 years. There were multiple maggots crawling out from the lacerated palatal mucosal wound, anterior mandible, and tongue [Figures 3 and 4]. This case was treated in the same way as the first case. After 3 days of hospitalization, there were no larvae in the patient's mouth and she was discharged.

Case 3

An 86-year-old male reported with worms in lower and upper jaw. Medical history revealed diabetes and paralysis for 14 years and was on Ryles tube feeding and had poor oral hygiene. Maggots were coming out from the right lower buccal vestibule [Figure 5], anterior mandible, from right side palatal area in premolar region. The patient was treated in the same way as the first case. The patient recovered well and was free from maggots at the time of discharge.

DISCUSSION

First incidence of this parasitosis in 1840, common infestations being reported in open wounds and dead

tissues; however, cavities such as ears, nose, and oral cavity may be involved.^[3] The occurrences of such cases are rare in developed countries and reflect the lack of special care for the vulnerable group of patients belonging to certain geographic areas.^[2]

Factors favoring primary oral infection include halitosis, open mouth with poor oral hygiene, facial trauma, suppurative lesions, and neurological deficit. Abdo En *et al.* classified myiasis as obligatory (when larvae develop in living tissue) and facultative (when maggots feed on necrotic tissue). Yazdi classified myiasis as dermal and subdermal myiasis, facial cavity myiasis, wound or traumatic myiasis, gastrointestinal myiasis, vaginal myiasis, and generalized myiasis. Myiasis can also be classified depending on the condition of the involved tissue into: (1) accidental myiasis (when larvae ingested along with food produce infection), (2) semi-specific myiasis (where the larvae are laid on necrotic tissue in wounds), and (3) obligatory myiasis (when larvae affect undamaged skin).^[1]



Figure 1: Necrotic maxilla with maggots (case 1)



Figure 2: Anterior mandible showing maggots (case 2)



Figure 3: Center of tongue showing maggots (case 2)



Figure 4: Maggots in buccal vestibule and anterior mandibular area (case 3)



Figure 5: Removed maggots outside the mouth

Pathophysiology

The life cycle of a fly begins with the egg stage followed by the larva. The adult female lays eggs on live mammals. The sites of infestation are usually superficial wounds, open sores, and mucous membranes in body orifices such as the mouth, ear, and nose. The eggs hatch within 24 h and the resulting larvae burrow into the host's tissues head-downward into the wound in a characteristic screw-like fashion, feeding on living tissue. The larvae release toxins to destroy the host tissue. Proteolytic enzymes released by the surrounding bacteria decompose the tissue on which the larvae feed. The larvae complete their development in 5–7 days. They then wriggle out of the wound and fall to the ground to pupate.^[4]

Treatment

Mechanical removal of larvae is the traditional treatment for myiasis. Local application of several substances such as oil of turpentine, mineral oil, ether, chloroform, ethyl chloride, mercuric chloride, creosote, saline, phenol, calomel, olive oil, and iodoform can be used to ensure complete removal of larvae. These agents irritate the maggots causing larval asphyxia and forcing them out of their hiding place.^[3] The current literature describes ivermectin as an efficient and safe method of treatment of parasitosis. Use of systemic ivermectin can give favorable results. It blocks nerve impulses on the ending nerve through the release of gamma amino butyric acid, linking to the receptors and causing palsy and death. Topical antibiotics can be employed as adjuvants in the treatment.^[1]

Turpentine is a toxic chemical as it can induce tissue necrosis. When applied topically, it can produce epithelial hyperplasia, hyperkeratosis, and ulceration. However, the damage is reversible, the hyperplasia will only persist when

the stimulus is continuously applied, and regresses once it is withdrawn.^[5]

Awareness for patients with special need

Patients with special needs include patients with mental and/or physical disability. Most of these patients have difficulties in maintaining good oral hygiene due to poor manual dexterity, parents/guardians are too busy concentrating on the patients' social or other health aspects, parents or guardians are not aware of the importance of oral hygiene, or parents/guardians have difficulty in gaining access to a dental clinic. A patient with special needs should be exposed to the dental intervention as early as possible to promote cooperation and confidence and to prevent disease.

CONCLUSION

Oral myiasis is uncommon disease in humans and can take many forms including infection of skin, gut, nasal cavities, eyes, and occasionally the oral cavity. As larvae of flies can destroy vital tissues, inducing serious or even life-threatening hemorrhages, early diagnosis and management of such infection is essential. Good sanitation, personal and environmental hygiene and cleanliness, and special care for debilitated individuals are the best methods to prevent oral myiasis.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Srivastava R, Devi P, Thimmarasa VB, Jayadev S. Flies blown disease – Oral myiasis. *Indian J Dent Res* 2011;22:615.
2. Avula JK, Avula H, Arora N, Manchukonda UK, Vivekavardhan Reddy N. Orofacial myiasis of the gingiva and nasal cavity: A report of two cases and general review. *J Periodontol* 2011;82:1383-8.
3. Vinit GB, Jayavelu P, Shrutha SP. Oral myiasis in a maxillofacial trauma patient. *J Pharm Bioallied Sci* 2013;5:S195-7.
4. Sankari LS, Ramakrishnan K. Oral myiasis caused by *Chrysomya bezziana*. *J Oral Maxillofac Pathol* 2010;14:16-8.
5. Ramli R, Abd Rahman R. Oral myiasis: Case report. *Malays J Med Sci* 2002;9:47-50.