Oral myiasis in children

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Abstract

Oral myiasis is a rare condition in humans and is associated with poor oral hygiene, severe halitosis, mouth breathing during sleep, mental handicap, cerebral palsy, epilepsy, anterior open bite, incompetent lips, and other conditions. In this report, a 14 year-old boy who had an orofacial trauma in the maxillary dentoalveolar region,which was neglected, has been described. There was a deep lacerated wound on the upper vestibule which was infected and maggots were found on the same wound. The clinical features, management, treatment are discussed and relevant literature is reviewed.

Keywords: Larvae, maggots, oral myiasis, oral infestation

Introduction

Oral myiasis is a rare condition that refers to the invasion of tissue of the oral cavity by fly larvae.[1] The term myiasis (Greek: myia= fly, iasis = disease) was coined by Hope in 1840[2] and it was first described by Laurance in 1909.[3] Zumpt defined myiasis as the infestation of live human and vertebrate animals with dipterous larvae, which feed on living or necrotic tissues, liquid body substances, or ingested food.[1,4,5] Human myiasis is reported mainly in developing countries such as Asian countries and very rarely from western countries.

Myiasis can be classified depending on the condition of the involved tissue as i) accidental myiasis – when larvae get ingested along with food, ii) semi-specific myiasis – when the larvae are laid on necrotic tissue of the wound and iii) obligatory myiasis –in which the larvae affect undamaged skin.[6] Based on anatomic site, it can be classified as i) cutaneous myiasis, ii) myiasis of external orifices and iii) myiasis of internal organs.[7] Clinically, it can be classified as primary and secondary.

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Access this article online	
Quick Response Code:	Website: www.contempclindent.org
	DOI: 10.4103/0976-237X.95097

Primary myiasis is caused by biophagous larvae (feed on living tissues) and also called as obligatory myiasis. Secondary myiasis is caused by the necrobiophagous larvae (feed on dead tissues) and also called as facultative myiasis.[8,9] The most common anatomical sites for myiasis are the nose, eyes, skin wounds, sinuses, ears, lungs, gut, gall bladder, vagina, nasal cavities, and rarely, the mouth.[10] whereas cutaneous myiasis involves invasion of the skin through the wounds. But specific types of flies can even penetrate healthy skin and produce myiasis.[11]

The common predisposing factors are incompetent lips, poor oral hygiene, severe halitosis, anterior open bite, mouth breathing during sleep, facial trauma, extraction wounds, ulcerative lesions and carcinoma.[12,13] Most of the patients are senile,[14] alcoholics, mentally handicapped,[15] cerebral palsied,[12,14-16] and also those living in poor conditions, with no age limitation.[8] Droma *et al*.[17] reported that incidence of myiasis is more in anterior maxillary region and men are more affected than women. Traumatic wounds in orofacial region, when neglected by patients themselves as well as care takers, can lead to development of myiasis.[18,19]

The present report describes a case of oral myiasis in a 14 year old boy with a history of trauma to the maxillary anterior region and it was neglected by him and parents.

Case Report

A 14 year old boy with learning disability presented to Department of Pedodontics and Preventive Dentistry, SJM Dental Collegeand Hospital, Chitradurga, with a chief complaint of upper lip swelling and itching sensation on the right side of the face since more than 2 weeks [Figure 1]. The patient gave a history of trauma to maxillary anterior dentoalveolar region and it was neglected for many days. On examination, there was swelling of the face on the right side, which extended from infraorbital region to upper lip [Figure 1]. Intraoral examination revealed a deep lacerated wound which was infected and maggots were noticed on

the upper vestibule and the nasal floor. The patient had an incompetent lip, swollen upper gingiva, and poor oral hygiene, and general symptoms like pain, fever and malaise were present. A cotton swab impregnated with turpentine was placed near the upper vestibule (wound) area for 5–10 minutes. Many of the maggots came out from the nose, which were then removed one by one with the help of curved artery forceps [Figures 2, 3]. During the 3 days interval, about 90-96 maggots were removed [Figures 4, 5]. The length of the each maggot ranged from 6 to17mm [Figure 6]. The wound debrided and slough was removed. Then, the wound was irrigated with hydrogen peroxide, antiseptic betadine solution and broad-spectrum antibiotics, and analgesics were prescribed. The patient was recalled for regular follow-up for wound debridement and the wound healed uneventfully.

Discussion

Myiasis is an uncommon disease in humans and common in rural areas compared to urban areas. The most common sites are the nose, eye, ear, anus, vagina, and rarely, the oral cavity.[10] Predisposing factors are extraction wounds, poor oral hygiene, psychiatric patients, mouth breathing during sleep, facial trauma,[20] open neglected wounds, necrotic tissues, suppurative lesions, severe halitosis, senility, cerebral palsy, mental retardation, hemiplegia and factors that favor persistent non-closure of the mouth.[12,14-16]

Primary oral myiasis commonly affects the anterior part of the mouth. The patient reported here was residing in a rural area, with low socioeconomic background. He had a history of orofacial trauma which was neglected. He had poor oral hygiene with mouth breathing habit. The life cycle of a house fly begins with the egg stage followed by the larva, the pupa, and finally the adult fly. The conditions required for egg laying and survival of the larvae are moisture, necrotic tissue and suitable temperature. The larval stage lasts from 6 to 8 days, in which period they are parasitic to human beings. They are photophobic, and therefore tend to hide deep into the tissues, which also helps them to secure a suitable niche to develop into pupa.

In the present case also, the larvae were present deep into the tissue and the nasal floor. Proteolytic enzymes released

Figure 1: Swelling of the right side of the face and the upper lip

Figure 2: Arrow shows larvae coming out from the nose

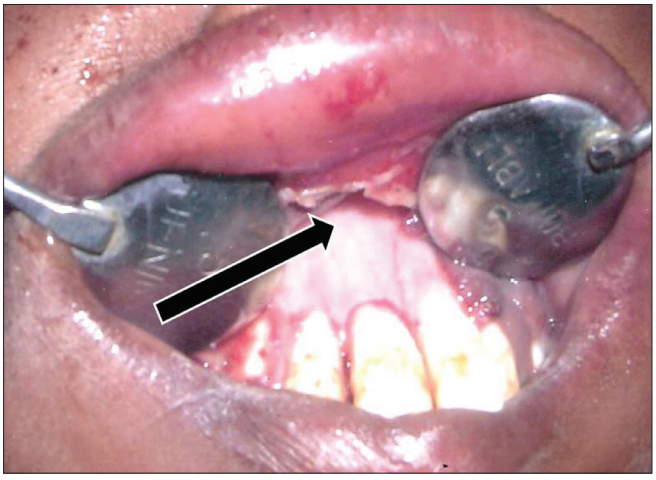

Figure 3: Number of maggots removed from this area

Figure 4: Collected larvae from the lesion

Figure 5: Group of maggots

Figure 6: Each maggot was measured

by the surrounding bacteria decompose the tissue and the larvae feed on this rotten issue. The infected tissue frequently releases foul-smelling discharge. Oral myiasis can also be classified as- 1) larvae living outside the body, 2) Larvae burrow into unbroken skin and develop under it. 3) Larvae live in the intestinal or urinary passages. 4) Eggs or young larvae are deposited in the wounds or natural cavities in the body. The present case report correlates with the fourth group in the classification. The usual treatment of myiasis is mechanical removal of maggots. When there are multiple larvae and in advanced stages of development and there is tissue destruction, local application of various agents like turpentine oil, larvicidal drug like Negasunt,[21] ethyl chloride, ether, mercuric chloride, creosote, saline, iodoform, chloroform, clove oil, calomel, phenol mixture, olive oil, gentian violet, alcoholic solution in association with tobacco,camphor, sodium hypochlorite can be used for complete removal of all larvae.[22,23] These agents asphyxiate the aerobic larvae and force them to a superficial position and these larvae are removed with less damage to tissues and larvae as well.[12,17] The rupture of the larvae might cause allergic or foreign body reaction and secondary infection, so care must be taken not to rupture the maggots.[11,12]

In the present case, maggots were removed completely in 3 days interval by using turpentine oil. They were about 90–96 in number, measuring 6–17mm in length. The wound debrided and slough was removed. Then, the wound was irrigated with hydrogen peroxide and antiseptic betadine solution.Systemic treatment included broad-spectrum antibiotics and analgesics.The patient was recalled for regular wound debridement and the wound healed uneventfully.

Conclusion

Myiasis of orofacial region can be prevented by educating the people from rural areas and low socioeconomic groups about personal hygiene, taking care of any wound, control of fly population and maintenance of sanitation of the surroundings. Special attention is needed for patients with mental, physical and learning disability. We, the dentists, must educate parents/guardians to make them aware of the conditions, and the parents should bring children as early as possible for dental intervention to prevent further complications.

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How to cite this article: Raghunath Reddy MH, Das N, Vivekananda MR. Oral myiasis in children. Contemp Clin Dent 2012;3:S19-22.

Source of Support: Nil. **Conflict of Interest:** None declared.