Oral Myiasis is a Potential Risk in Patients with Special Health Care Needs

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ABSTRACT

Myiasis is a rare disease caused by invasion of tissue by larvae of certain dipteran flies. It is more common in countries with tropical climate. Oral myiasis is not a very common condition and many clinicians are unaware of its diagnosis. Common predisposing factors are poor oral hygiene, halitosis, trauma, senility, learning disabilities, physically and mentally challenged conditions. Oral myiasis can lead to rapid tissue destruction and disfigurement and requires immediate treatment. Treatment consists of manual removal of maggots from oral cavity after application of chemical agents. Use of antibiotics reduces the duration of infection and hastens the recovery period. Good sanitation, personal and environmental hygiene and cleanliness and special care for debilitated persons are the best methods to prevent oral myiasis.

Key words: Oral myiasis, Chrysomya bezziana, Special health care needs, Maggots

INTRODUCTION

The term myiasis is derived from Latin word 'muia' which means fly and 'iasis' means disease. The term was coined by Hope in 1840. Oral myiasis was however, first described by Laurence (1909) and is reported mainly in the tropics and is associated with, inadequate public and personal hygiene. The term myiasis refers to infestation of living tissues of animals or humans by diptera larvae.[1] The species of flies that cause myiasis are *Cochiliomyia hominivorax*, known as the screw worm fly, *Dermatobia hominis* or human botfly, Sacrophagidae species, *Alouttamyia baeri* and Anastrepha species family.[2]

CLASSIFICATION

Myiasis can be classified clinically as primary (larvae feed on the living tissue) and secondary (larvae feed on dead tissue). Depending on the condition of the involved tissue it is classified into accidental myiasis (larvae ingested along with food), semi-specific myiasis (larvae laid on necrotic tissue in wounds) and obligatory myiasis (larvae affecting undamaged skin). Further classification can be based on the site as cutaneous, external orifice, internal organs and generalized. The most common anatomic sites for myiasis are the nose, eye, lung, ear, anus, vagina and more rarely, the mouth. Incidence of oral myiasis as compared to that of cutaneous myiasis is less as the oral tissues are not permanently exposed to the external environment.[3,4]

CLINICAL PRESENTATION AND MANAGEMENT

Reported cases of oral myiasis are most commonly seen in patients with special health care needs like mental and physical challenging conditions, neurodegenerative disorders, cerebral palsy, learning difficulties, and in bedridden and medically compromised patients. The reason for the high occurrence in such patients relates to the many common predisposing factors of myiasis in these patients like poor oral hygiene, incompetent lips, halitosis, seizure disorders and trauma to oral tissues with wounds exposed to environment and hyper-salivation.[5]

Chrysomya bezziana is one of the causative organisms for obligatory myiasis. The species is widely distributed throughout South-East Asia, China, the Indian Subcontinent, tropical Africa, and Papua New Guinea.

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Human myiasis due to *C. bezziana* is very rare and first was reported in Hong Kong in July 2003.[6] The unusualness of *C. bezziana* infestation is that it can cause extensive tissue invasion of intact skin or mucosal surfaces and leads to burrowing and extensive damage to soft tissues and bone. Tissue loss and tunneling often leads to difficulties in restoring the form and function. The affected locations in oral myiasis reported are upper lip, anterior palate, gingiva, buccal mucosa, extraction sites and the lower jaw. Traditionally, treatment consists of manual removal of maggots after local application of asphyxiating agents like oil of turpentine, ether, ethyl or mercuric chloride, chloroform, calomel, iodoform, olive oil, phenol, gentian violet and hydrogen peroxide. Systemic therapy of Ivermectin, a macrolide semi-synthetic antibiotic isolated from *Streptomyces avermitilis* has improved the management by decreasing the course of infection, faster recovery and complete resolution of lesions. It acts by blocking the nerve impulses on nerve endings through the release of gamma amino butyric acid (GABA) leading to palsy and death.[3,5,6] It has been found to be safe for human use. Most recently, nitrofurazone topical application with flushing of the wounds in gingiva has shown promising results without any surgical intervention.[7] Proper nutrition and hydration should be maintained in such patients. Published research suggests that myiasis increases the risk of having a chronic wasting disease. This is due to the prion rods found in flies (*Hypoderma bovis* and *Oestrus ovis*) and being implicated in at least five human diseases, including sporadic Creutzfeldt-Jakob disease (CJD) which is responsible for 85% of all cases of chronic wasting diseases. (cause currently unknown). Thus myiasis is considered as a risk factor for prion diseases in humans.[8]

As oral myiasis is not a common occurrence, many clinicians and diagnosticians are unaware of its clinical presentation and progression leading to delay in treatment and morbidity in some cases. Thus prevention is better than its management. Prevention of oral myiasis includes good community sanitation and maintenance of good individual and environmental hygiene. Wounds should not be left open and oral hygiene care of medically compromised patients and those with special health care needs should be monitored by an attendant/guardian or parent.[5]

CONCLUSION

To conclude, oral myiasis is an uncommon infestation in the general urban population but is seen more often among rural and urban patients with special health care needs and requires immediate attention to prevent debilitation and disfigurement of oral tissues.

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