Case Report

International Journal of Dental and Health Sciences
Volume 04, Issue 04

ORAL MYIASIS - RISK FACTOR IN PATIENTS WITH SPECIAL HEALTH CARE NEEDS: A CASE REPORT

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ABSTRACT:

Myiasis is a universal term for extreme infection by the parasitic larvae that feed on their host living/dead tissue. It is a rare disease in humans mostly associated with poor oral hygiene, suppurative oral lesions, alcoholism, senility, mental and physical deficit. We present a case of myiasis in the maxillary anterior vestibule and anterior palatal gingiva in a 21-year-old mentally and physically challenged male. The diagnosis was made by the presence of larvae in the lesion. Manual removal of maggots, after application of turpentine oil with surgical debridement of wound was done followed by administration of broad-spectrum antibiotic and anti-parasitic medication.

Reviewing the literature revealed that most of the cases involved the anterior part of the oral cavity of male patients living in developing or underdeveloped countries and were mostly associated with some predisposing factor.

Key words: Oral Myiasis, Mental Disability, Anterior Maxilla.

INTRODUCTION

Oral myiasis is a rare condition that results in invasion of tissue by the larvae of fly. Myiasis is an infestation of a live vertebrate by dipterous larvae, which feed on living, or dead host tissue, liquid body substances, or undigested food. [1] The term Myiasis (Greek: myia = fly, iasis = disease) was coined by Hope [2] in 1840 and Laurence [3] first described it in 1909.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. [4]

In humans, the most commonly affected sites are the nose, eyes, skin wounds, sinuses, lungs, ears, gut, gall bladder, vagina, nasal cavities and rarely the mouth. The occurrence of myiasis in the oral cavity is unusual as oral tissues are rarely exposed to the external environment. [5]

Globally, a higher incidence of oral myiasis (OM) is observed in tropical and subtropical regions of Africa, America and South East Asia due to favorable climatic conditions. [6] The common predisposing factors for involvement of oral cavity includes incompetent lips, poor oral hygiene, severe halitosis, anterior open bite, mouth breathing during sleep, facial trauma, extraction wounds, ulcerative lesions and carcinoma. Most of the patients are senile, alcoholics, mentally and physically handicapped. [5,6]

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In this paper, we present a case of oral myiasis caused by Musca Domestica involving the anterior maxillary vestibule and palatal gingiva in a 21-year-old male patient.

CASE DETAIL:

A 21-year-old male patient with physical and neurological deficit reported with his father and had a chief complains of swelling in upper lip and jaw, since 4-5 days. On examination the patient was physically underdeveloped and completely dependent on the family for all his daily affairs. Extra oral examination revealed incompetent lips, a diffuse swelling of size approximately 3 × 3 cm associated with upper lip region. The overlying skin was tense, and shiny (Figure 1). The swelling was firm, edematous and tender on palpation. Intraoral examination revealed mutilated labial and palatal gingiva in the region of the maxillary incisors with multiple fenestrations.

The anterior labial gingiva showed detachment and exposure of underlying bone. Deep burrowing, with multiple cavitation, was seen in the labial anterior vestibule. Besides the patient had a very poor oral hygiene and moderate periodontal condition. Multiple larvae were noted crawling within the gingival and vestibular lesion (Figure 2). The surrounding mucosa was inflamed and tender on palpation but bleeding and discharge was not seen. Radiological examination could not be conducted due non-cooperation of the patient. Based on clinical findings and presence of maggots, a provisional diagnosis of oral myiasis was made.

Cotton bud impregnated with turpentine oil was placed at the orifice of the socket for approximately 10 minutes. 54 maggots were manually removed with the help of hemostats and tweezers (Figure 3). These were preserved in 40% formaldehyde and were send to the Microbiology Department where they were identified as larvae of *Musca domestica* or housefly (Figure 4).

Debridement of the wound along with copious irrigation with hydrogen peroxide was done. Oral drugs including Albendazole 400 mg single dose, Metronidazole 400 mg TID for 5 days, and Diclofenac sodium 50 mg TID for 3 days along with a supplement of B-Complex (OD) for 15 days were prescribed. The patient was also advised to rinse with 0.2% Chlorhexidine gluconate mouthwash 10 ml BD for 7 days. The larvae were mechanically removed for next two consecutive days, until no more were seen. The mobile teeth were extracted and the wound was debrided in order to remove the necrotic tissue (Figure 5, 6). The patient family was educated and motivated with regards to personal hygiene measures with special emphasis on oral hygiene instructions.

DISCUSSION:

Myiasis is an uncommon disease in humans and more commonly prevalent in rural and suburban areas. The most common sites are the nose, eye, ear, anus, vagina, and rarely, the oral cavity. The most common causative agent of

myiasis is dipteran clade Calyptratae. It consists of four families: Calliphoridae, Sarcophagidae, Oestridae, and Muscoidea.[7] In the present case, the causative agent was identified to be common housefly.

Predisposing factors for the occurrence of this disease in human are extraction wounds, poor oral hygiene, psychiatric patients, mouth breathing during sleep, facial trauma, [8] 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.[9,10-12] In the present case, the patient was physically and mentally challenged with low socioeconomic background and poor oral hygiene residing in a suburban area.

The life cycle of a fly consists of 4 stages: egg stage, larval stage, the pupa, and the adult fly. Larval growth causes progressive destruction and cavitation and forms a fibrous capsule to which they firmly adhere and cause more difficulty in their surgical removal. [13,14] The burrowing of the larvae causes the separation of the mucoperiosteum from the bone and mild to acute pain. For the larval development of these flies, the intermediate host is required and the flies can lay more than 500 eggs at a time directly over the diseased tissue. [14]

In case of oral myiasis, the most common site involved is the anterior segments of the maxillary and mandibular jaws and the palate. [14,15] In the present case, gingiva and vestibule of the maxillary anterior site was affected.

Clinical picture of the pulsating larvae is sufficient for the diagnosis of the oral myiasis and for the species identification it should be sent to the specialized laboratories. Mechanical removal of larvae is the most commonly used treatment. [13,14] Local application of substances like mineral oil, ether, oil of turpentine, chloroform, mercuric chloride, ethyl chloride, creosote, phenol, saline, calomel, gentian violet, white head varnish, olive oil, and iodoform can be used for ensuring the complete removal of all larvae. [14, 16, 17] Treatment of the surrounding bacterial infection with broad-spectrum antibiotics and nutritional support of the patient with multivitamin tablets are also important. Commonly used antibiotics include ampicillin, amoxicillin, or metronidazole. Topical use of nitrofurazone and ivermectin has also been useful. [13, 18, 12,19]

CONCLUSION

As oral myiasis is not a common occurrence in the urban areas, so many clinicians and diagnosticians are unaware of its clinical presentation and progression, which can lead to delay in treatment and morbidity in some cases. Thus prevention is better than its management, which includes good community sanitation and maintenance of individual and environmental hygiene. Wounds should not be left open. An attendant/guardian or parent should monitor oral hygiene of medically

compromised patients and those with special health care needs.

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FIGURES:

FIGURE 1: EXTRA ORAL PICTURE

FIGURE 2: INTRA ORAL PICTURE SHOWING MULTIPLE LARVAE

FIGURE 3: REMOVED LARVAE FROM ORAL CAVITY

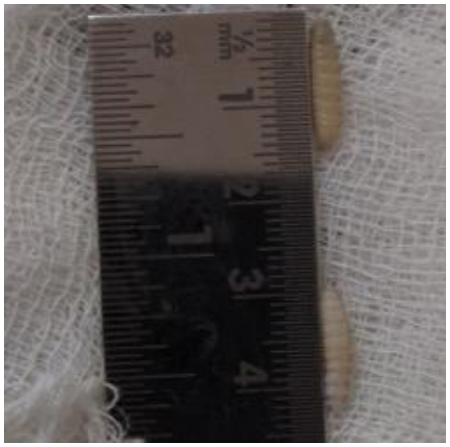

FIGURE 4: LARVAE OF MUSCA DOMESTICA

FIGURE 5: POST OPERATIVE EXTRA ORAL PICTURE

FIGURE 6: POST OPERATIVE INTRA ORAL PICTURE