

Oral myiasis in a maxillofacial trauma patient

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Abstract

Oral Myiasis is a rare disease that is mostly reported in developing countries. It is primarily caused by the invasion of the human body by fly larvae. The phenomenon is well-documented in the skin, especially among animals. This case report describes the presentation of Oral Myiasis caused by *Musca Nebulo* (common house fly), in a 28-year-old patient, with recent maxillofacial trauma. The patient was treated by manual removal of the larvae, after topical application of turpentine oil, followed by surgical debridement and oral therapy with Ivermectin.

Keywords: Ivermectin, *Musca Nebulo*, oral myiasis, turpentine oil

Introduction

Myiasis is derived from a Latin word '*Muia*,' which means fly and '*iasis*,' which means disease.^[1] The term was coined by Hope in 1840,^[2] and defined by Zumpt.^[3] It is a pathological condition in which there is infestation of living mammals with the dipterous larvae, which, at least for a certain period feed on the host's dead or living tissue, and develop as parasites.^[1,4]

Myiasis is a fairly common condition in rural areas, among animals such as cats and dogs, and has been frequently reported in humans residing in rural areas of developing countries.^[5]

Clinically, myiasis is classified as:^[1,6]

1. Primary Myiasis — larvae feed on living tissue^[7]
2. Secondary Myiasis — larvae feed on dead tissue^[8]

Depending upon the condition of the involved tissue, it is of two types:

1. Obligatory — require living tissue for larvae development
2. Facultative — require necrotic tissue for flies to lay eggs and incubate them

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In humans the most common sites of Myiasis are the nose, eye, ear, vagina, skin, nasopharynx, and rarely, the oral cavity.^[9,10]

Case Report

A 28-year-old male patient from a low socioeconomic status reported to the Department of Oral Pathology and Microbiology, Purvanchal Institute of Dental Sciences, Gorakhpur, with a chief complaint of pain and swelling in his upper lip since three weeks, which had increased over the past four days.

The patient's past dental history revealed that he had a road traffic accident, with no maxillofacial trauma of bones, three weeks back. An extraoral examination revealed several bruises and lacerations over the upper lip and left side of his face. He also had diffused swelling of the upper lip along with ulceration in the midline of upper lip, measuring approximately 0.5 × 2 cm. He was taken to a local hospital, where he received suturing of his laceration and medications.

An intraoral examination revealed mild bleeding from the gingival sulcus of the maxillary central incisors. The patient was having severe halitosis and poor oral hygiene, with severe periodontitis. Teeth numbers 11, 21, 31, 32, 41, and 42 showed grade III mobility. Radiographic examination showed no signs of bone trauma except for a slight widening of the periodontal ligament space in relation to 11 and 21, with generalized horizontal bone loss. Hematological investigations revealed that the Total Leukocyte Count (TLC) was slightly raised (TLC — 11,800cells / μ L).

On clinical examination of the lesion, maggots were moving out [Figure 1]. Based on the patient's history, and the radiographic and hematological investigations, the provisional diagnosis was Oral Myiasis.

The patient was treated under local anesthesia. Cotton impregnated in turpentine oil (a topical irritant) was placed for 10 – 12 minutes and maggots were removed with a blunt

tweezer. Around 45 – 50 maggots were removed [Figure 2]. The maggots were then sent for Entomological examination to a zoologist.

The wound was cleaned to remove the necrotic tissue, and periodontally weekend teeth with poor prognosis were extracted. The wound was thoroughly irrigated with betadine and normal saline. The necrotic tissue that was removed was sent for histopathological examination.

The histopathological examination of the Hematoxyline and Eosin (H and E)-stained section revealed connective tissue stroma consisting of collagen fibers along with fibroblasts and fibrocytes. Few areas showed numerous proliferating blood vessels along with red blood cells (RBCs). The tissue sections also showed numerous inflammatory cells; mainly plasma cells and lymphocytes. All these features were suggestive of a chronically inflamed granulation tissue.

The patient was put on Tab. Ivermectin 6 mg O.D. for the first three days along with Tab Metronidazole 400 mg thrice daily,



Figure 1: Preoperative photograph showing maggots coming out of the lesion



Figure 2: Live maggots retrieved after application of turpentine oil

for five days. The patient was advised to maintain proper oral hygiene and rinse the wound with 0.2% Chlorhexidine mouth wash, three to four times daily. The patient was asked to follow-up after five days, with a subsequent follow-up once a week. The wound was primarily closed and healed uneventfully in four weeks time.

An entomological examination of the removed maggots revealed that the larvae were of the house fly (*Musca Nebulo*).

Discussion

Musca Nebulo is the most common house fly in India. They are most active during the summer and rainy seasons.^[11] The lifecycle of house fly starts with the egg stage, followed by the larva, pupa, and finally an adult fly. Open wound, ulcers, and open sores provide a favorable environment for their growth.^[12]

Human Myiasis is a rare condition in today's world, especially Oral Myiasis.^[13] It mainly occurs in rural areas.^[14] A large number of predisposing factors favor the development of Oral Myiasis, such as, diabetes mellitus, psychiatric illness, leprosy, mental retardation,^[15] and open neglected wounds. Apart from these predisposing factors, poor oral hygiene, low socioeconomic status, and maxillofacial trauma facilitate the disease.^[16]

The best treatment modality is manual removal of maggots with a tweezer or tissue holding forceps, under local or general anesthesia.^[17] Use of turpentine oil (a topical irritant) facilitates the removal of larvae;^[2] other agents such as ether, Chloroform, Iodoform, and phenol mixtures can also be used.^[18] This is followed by surgical debridement of the wound, to remove the necrotic tissue. Use of systemic Ivermectin gives good results in most cases.^[19]

In the present case, maxillofacial trauma, poor oral hygiene, and poor periodontal status were the main factors.

Conclusion

Oral Myiasis is a rare disease in humans, but occurs with life-threatening results. Manual removal of maggots with application of turpentine oil, a topical irritant, is the treatment of choice, before a large amount of tissue necrosis takes place. As prevention is better than cure, prevention of this disease should be given utmost importance, to control the population of house flies.

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