

Myiasis of the Hard Palate- A Case Report

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Abstract

Myiasis is a disease affecting the soft tissues of humans and animals due to infestation by parasitic larvae of flies. It is common among patients with poor personal hygiene, debilitated and mentally challenged individuals. Here we report a case of a seventy-year-old male with oral myiasis affecting the entire hard palate. So, we recommend that proper awareness regarding the disease and its complications should be educated among the general population and proper preventive measures must be followed.

Keywords: Myiasis; Myiasis of the Hard Palate; Oral Myiasis; Human Myiasis; Debilitative Diseases

Introduction

The term Myiasis (GREEK: myia=fly, iais=disease) was first introduced by Hope in 1840 and described by Laurence in 1909 [1]. It refers to the infestation of tissue and organs of animals and humans caused by larvae of certain dipteran flies [2]. The infestation is most often subcutaneous and produces a furunculoid or boil-like lesion and can also occur in wounds and certain body cavities [3]. It can originate in the skin and mucosa by maggots from the families Coterbridae, *Hypodermatidae* and a few *Calliphoridae* and *Sarcophagidae* species [4]. First reported case of human myiasis due to *Chrysomya bezziana* was from Hong Kong in 2003 [5].

Oral Myiasis in humans is a rare condition which is associated with local, systemic, and environmental predisposed factors. The local factors include poor oral hygiene, periodontal diseases, suppurating lesions, mouth breathing, incompetent lip, anterior open bite, thumb-sucking habit, and trauma. Systemic factors include mental impairment, cerebral palsy, epilepsy, and neurological deficits [6].

Here we report a case of Oral Myiasis on the hard palate in a debilitated patient.

Case Report

A 70-year-old debilitated male patient reported to the Department of Oral Medicine and Radiology and then to Department of Oral and Maxillofacial Surgery, Kannur Dental College, with a complaint of bleeding from the mouth for 3 days. Patient's wife noted bleeding from the mouth in the morning before 3 days which was profuse initially and scanty later. Multiple similar episodes of bleeding was noted during the past 3 days. He was a known case of Parkinsonism for which he was under medication since 4 to 5 years.

Clinical oral examination revealed a well-defined necrotic grayish black tissue involving the whole hard palate with a foul smell and few areas of exposed bone on the hard palate, measuring approximately 3.4 cm x 5.6 cm. Anteroposteriorly the lesion extends from the anterior palatal rugae region, posteriorly towards 16 and 26 regions. Mediolaterally the lesion extends approximately 1.5 cm from

the mid palatine raphe towards the right lateral side and 1 cm towards the left lateral side (Figure 1). The surface of the lesion appears irregular with areas of fresh bleeding. Surrounding mucosa appeared erythematous. Live moving organisms were noted on the anterior rugal region along with the necrotic tissue. The patient had incompetent lips and poor oral hygiene. 11 and 21 had grade 3 mobility. On palpation, the lesion was non-tender, necrotic tissue was detached and base of the ulcer palpated for induration which was found to be negative. Spontaneous bleeding on touch was noted, with no other discharge. Physical examination was non-contributory. Based on the history and clinical examination, an initial diagnosis of Oral Myiasis was considered. Routine blood investigations did not yield any abnormal values and was negative for communicable diseases.



Figure 1: Preoperative view of infested areas.

The patient was admitted to our hospital and informed consent was taken. Maggots were manually removed with the help of blunt tweezers and curved forceps without administering local under general anesthesia (Figure 2 and 3). Hydrogen peroxide was used as the topical asphyxiation drug. More than 50 maggots were removed and extraction of 11 and 21 was done followed by which few maggots were removed from the extraction socket of the same. Larvae appeared greyish white with transverse rows of segments. Surgical debridement of the necrotic tissue and irrigation done with saline and 2% Povidone-iodine followed by the histopathological examination. The limit of resection was at the anterior part of the soft palate (Figure 4). The patient was treated with Tab Metronidazole 400 mg 3 times for 7 days, Tab Ivermectin 12 mg once daily for 5 days and was advised to maintain proper oral hygiene and rinse the wound with 0.12% Chlorhexidine mouthwash 3 - 4 times daily.

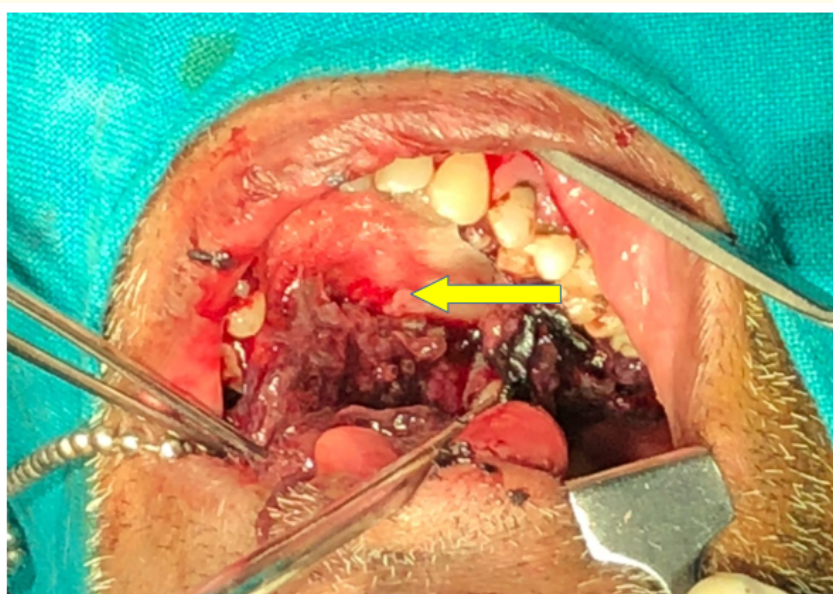


Figure 2: Intraoperative view showing live organisms.



Figure 3: *Maggots collected and getting prepared for the entomological study.*

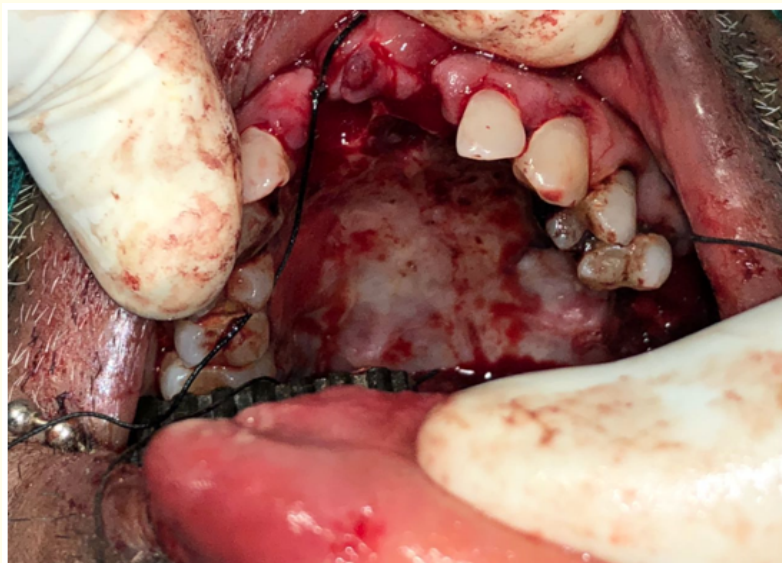


Figure 4: *Intra operative view depicting the limit of resection.*

The histopathological examination revealed - ulcerated and necrotic mucosa and submucosal tissue with numerous eggs and larvae: Oral Myiasis - hard palate (Figure 5 and 6). The maggots were sent for Entomological examination. They were identified to be the third larval stage of *Chrysomya bezziana*. Patient was discharged on the 5th post-operative day and follow-up was done after 2 weeks and the wound healed uneventfully (Figure 7). Further follow up was prevented due to logistical inability of the patient.

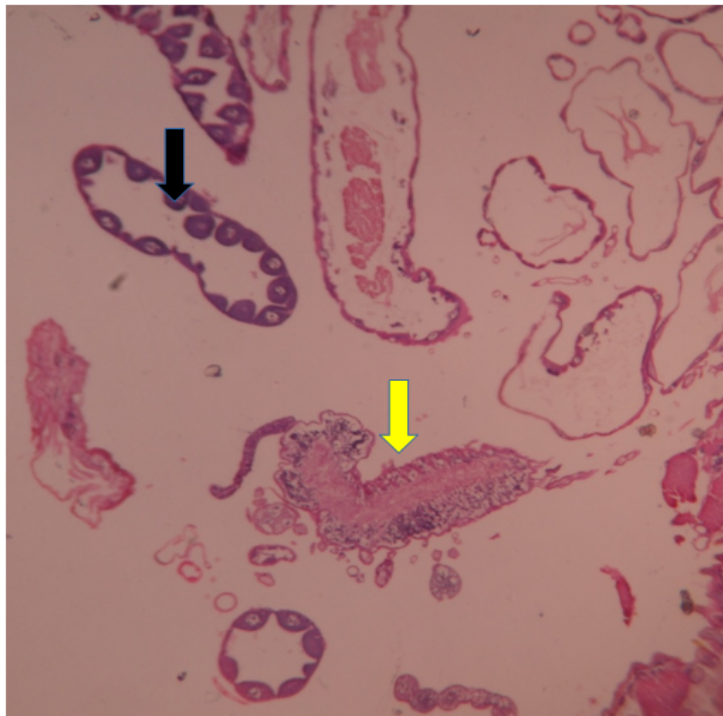


Figure 5: Pictomicrograph Showing Degenerated Larvae (yellow arrow) And Longitudinal Section Of Larvae (black arrow).

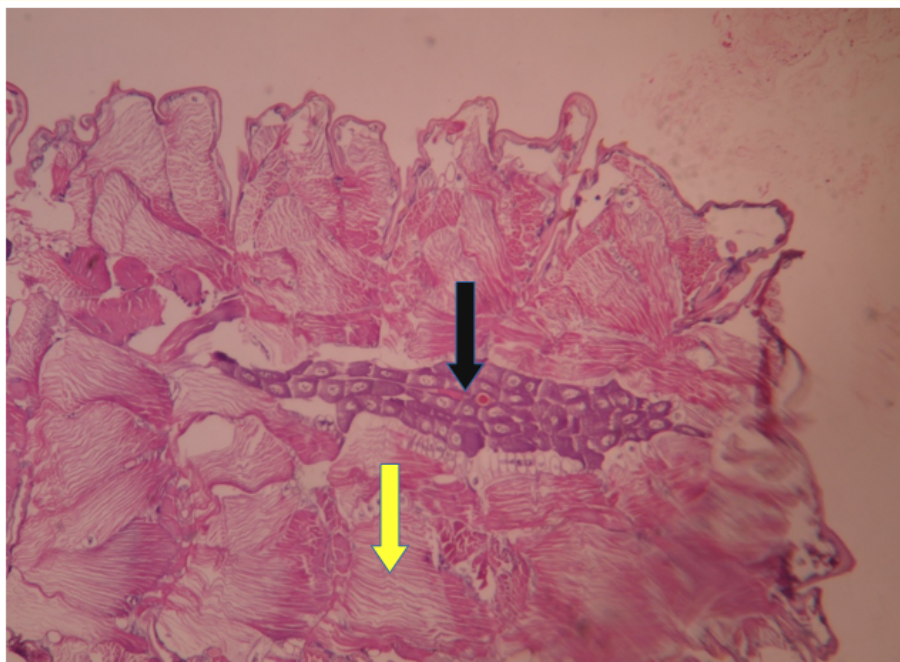


Figure 6: Pictomicrograph Showing Body Cavity Of The Larvae With Eggs (black arrow) And Muscle Fibers (yellow arrow).



Figure 7: Postoperative view after 2 weeks

Discussion

The very first incidence of Myiasis was reported in 1840. It is a common infestation being reported in open wounds and dead tissues; however, cavities such as ears, nose, and oral cavity can also be involved. 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 [7,8]. The common predisposing factors for Oral Myiasis are poor oral hygiene, trauma, senility, learning disabilities, physically and mentally challenged conditions; likewise in this case the patient has been in a non-ambulatory state since 5 years and he was not been able to maintain proper oral hygiene.

A member of dipteran flies family that lay eggs on open wounds, necrotic tissue, food, and unbroken tissue causes myiasis. *C. bezziana*, is the source of obligatory Myiasis. They are most functional during the summer and rainy seasons [9].

Classification

Depending on the condition of the involved tissue [10]:

- Accidental myiasis - when larvae get ingested along with food.
- Semispecific myiasis - when the larvae are laid on necrotic tissue of the wound.
- Obligatory myiasis -in which the larvae affect undamaged skin.

Based on Anatomic site

- Cutaneous myiasis
- Myiasis of external orifices
- Myiasis of internal organs.

Clinically

- Primary: Caused by biophagous larvae (feed on living tissues) also called as obligatory myiasis.
- Secondary: Caused by the necrobiophagous larvae (feed on dead tissues) also called as facultative myiasis.

Course of the disease

During fertilization the adult female flies get hooked due to the wound odour. The eggs hatch within 24 hours and the culminating larvae burrow into host tissues, head downwards into the wound in a characteristic screw like fashion, feeding on living tissue. The larvae will kill the host tissue by discharging toxins. The larval development is completed in 5-7 days followed by which, they wriggle out and fall to the ground to pupate [11].

Treatment

Manual 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 [2]. The current literature describes ivermectin as an efficient and safe method of treatment of parasitosis. 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 [12]. Topical antibiotics can be employed as co adjuvant in the treatment.

Conclusion

Even though Oral Myiasis is a rare entity, it can be easily prevented by asking the patients to maintain proper oral hygiene and 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 [1]. Such patients should be brought to the dentist at the earliest for the proper management of the disease.

Conflict of Interest

Nil.

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