

# Oral and cutaneous myiasis in a 5 year old child from Karachi, Pakistan

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## SUMMARY

Myiasis is a pathological condition in which there is a pestilence of fly larvae feeding on living or dead tissues. This disease is common in the tropics and subtropics of Africa and America and rarely affects humans. Our case report describes a five-year-old boy from Karachi, Pakistan with a history of extraction sockets and incisional biopsy of the left parotid lymph node. Lack of proper wound maintenance led to infestation of maggots both over the overlying skin of the left parotid region and the posterior oral cavity. The plan was wound debridement both outside and intra-orally under local anesthesia and the removal of maggots. A cotton swab impregnated with turpentine oil was placed on the wounds for a

few minutes. The wounds were then properly debrided with pyodine and hydrogen peroxide. Around 15 to 16 maggots were extracted from the wound on the left parotid region using medical forceps whereas five maggots were extracted from the intraoral wound with the help of turpentine oil and forceps. This case demonstrates the importance of oral health and proper wound management, and also that myiasis, despite its distinctiveness, can be managed by promoting awareness of the disease and by suitable treatment methods.

*Keywords:* debridement dental caries, larva, myiasis, oral hygiene, turpentine.

## INTRODUCTION

Myiasis has been defined as a pathological condition in which there is a pestilence of fly larvae feeding on living or dead tissues which advances into parasite. [1] The disease is widespread among the tropics and subtropics of Africa and America, and occurs with significantly less frequency in most other areas of the world. Open wounds, typically in homeless people, alcoholics, and others in poor hygiene, may become infested with fly larvae in wound myiasis. The tissues that line the mouth, nose, or eyes (mucosa) may also become infested. According to the involved tissues myiasis can be categorized into many types. Cutaneous presentations include funicular, migratory, and wound myiasis, depending on

the type of infesting larvae. Oral myiasis is a rare fly maggot infestation in people with poor oral sterility, immunocompromised state, unhygienic living conditions, suppurative lesions, facial trauma, mouth ulcerative lesions, wound extraction and fumigating cancers [2, 3]. This situation is severely life-threatening to the patient, in addition to causing pain and tissue destruction. Oral myiasis may present as oral mucosal swelling, gingival inflammation and laceration of oral cavity. The most prevalent variety of fly species includes *Chrysomya bezziana*, *Cochliomyia hominivorax*, *Musca domestica*, *Oestrus ovis*, and *Wohlfahrtia magnifica* [4]. The incidence of infection is rare, even in developing countries, with very few cases reported from Pakistan.

## CASE REPORT

A five-year-old boy presented in Oral and Maxillo-Facial Surgery department of Dr. Ruth K.M Pfau Civil hospital in May 2018 with complain

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of severe pain and extensive swelling in left parotid region giving deformity to face. He had wound filled with blood and pus and maggots were also noticed in that debris.

Patient's medical history revealed he had dental caries five months back in his left two maxillary molars. He had severe pain and difficulty in chewing for which he went to dentist and because of severe tooth decay his teeth were extracted a month before. Patient's mother was mentally retarded and father used to remain outdoor for his job: so lack of proper maintenance of extraction socket lead to development of dry socket. He took local pain killers to relieve pain and used liquid diet. Side by side he had a pea size swelling developing for few weeks which gradually reached the size of a tennis ball. He went for treatment to a local hospital near his house where, suspecting a neoplasm growth, an incisional biopsy of left parotid lymph node was performed. The patient belonged to a low socioeconomic status and lack of hygiene lead to infestation of wound by maggots.

On physical examination he was a lean, underweight and febrile child. There was huge swelling of about 5cm × 9cm in left parotid region extending horizontally 5cm away from left ala till 1 cm below lobule of left ear. Vertically it was starting 2 cm away from left tragus and then all the way down up to left cervical region. Overlying skin on the swelling was lacerated and filled with debris and maggots. The swelling was tender, non-pulsatile, non-reducible and slightly mobile in right direction. Surrounding skin of swelling was inflamed aggressively. Patient was reluctant to open mouth adequately because of severe pain. Intraoral examination revealed poor oral hygiene. Gums of maxillary molar teeth were swollen. Extraction sockets were filled with pus and debris. Maggots were also noticed in that debris. There were no signs of neurosensory deficits. Imaging techniques were suspended because patient was non-compliant. CBC revealed mild leukocytosis and anemia. Because of ignorance patient had lost his biopsy report, performed a week back. The plan was debridement of wound both outside and intra-orally under local anesthesia and removal of maggots. A cotton swab impregnated with turpentine oil was placed on wound for few minutes. Then wounds were properly debrided with pyodine and hy-



**Figure 1** - The wound in the left parotid region from where the maggots were extracted.

drogen peroxide.

Around 15 to 16 maggots were extracted from wound on left parotid region using medical forceps. Five maggots were extracted from intraoral wound with the help of turpentine oil and forceps. Extraction sockets were bleeding profusely so 3/0 vicryl sutures were used to close the socket (Figure 1). The wound was then packed with pyodine gauze and patient was kept in observation for next whole week.

Follow-up was not possible as the child's father, on calling, refused the control for personal reasons. He had given at discharge his informed consent for a possible publication of this case report. In order to protect patient's privacy, we have not reported details that might contribute to his identification, and all data are presented anonymously.

## ■ DISCUSSION

Our case report describes a 5-year-old child with oral and cutaneous myiasis in the parotid region occurring simultaneously. Very few cases have been reported from Pakistan and especially Karachi, on the subject of myiasis. Moreover, these studies are on myiasis in other parts of the human body and are mostly on ophthalmomyiasis exter-

na, of which one case report, published in 2006 had reported two cases and one study relates to urogenital myiasis and was published in 1985 by Jabbar-Khan et al. [5, 8].

Our case is rare as it involves infestation of maggots in oral cavity as well as on the overlying skin, with no connection between the two which clearly explains that underlying cause of myiasis at both sites is entirely different despite of their close anatomic relation.

Myiasis is an uncommon disease in humans. It commonly affects the skin, nose, ear, eyes, anus, vagina and mouth rarely affecting the oral cavity, more precisely the periodontal tissue [10-13]. The reason for this is that, oral cavity is not easily reachable for the fly to lay eggs [14]. Myiasis is more frequent in upper anterior maxilla and especially palate as the anterior region readily communicates with the external environment [7].

Among the cases of oral myiasis reported in the literature, few of them involve the posterior region of the oral cavity highlighting the unusual location of maggots in our case [6, 7]. Posterior parts can be affected when there is ingestion of larvae with food [6]. In a case series of 11 patients with oral myiasis, described by Muslim et al. only one patient reported oral myiasis in an infected dental socket. In our case, patient had dental caries first followed by myiasis, further adding to the rarity of the case [6].

Myiasis is prevalent in tropical and subtropical areas of Africa and America where hot and humid climate is favorable for growth [9, 10]. This could explain its rarity in Karachi which is a coastal area with low rainfall and arid climate in most part of the year. Furthermore, myiasis is common in rural areas, where abundant fly and livestock are present [6]. In the urban settlement of Karachi, people don't have much exposure to animals, thus reducing the risk of contracting animal borne diseases.

Moreover, oral myiasis is rarely observed in healthy humans and only few cases have been stated in the literature of children below the age of 3 presenting with oral myiasis [10, 11]. Adding to this, in the same case series by Muslim et al., pre-disposing factor was present in each patient [6]. Our case is unique, the child being young and having neither chronic disease nor mental problem. However, his mother is mental-

ly retarded since his birth and father works in a timber factory for 12 hours a day, which explains the reason of the poor oral hygiene and poor management of biopsy wound. The family is resident of Khadda market, Lyari Karachi with under privileged, unhygienic and unsanitary living conditions so it is apparent that the factors favoring myiasis are dental caries and poor hygiene.

The larvae are tightly attached with help of hooks to the necrotic slough, making difficult to remove them mechanically. The use of asphyxiating agents such as ether, chloroform, olive oil and turpentine oil have been reported in literature to create an anaerobic environment causing the larvae to come out and then can be easily removed [17]. In our case, the species were not identified as the maggots were disposed off and not taken to the laboratory for testing.

This case not only demonstrates the importance of oral health and proper management of wound but also that myiasis, despite of its distinctiveness, can be managed by the awareness of the disease and the application of the suitable treatment methods. Further studies are necessary to gain understanding about the occurrence of this condition in South Pakistan.

#### Conflicts of interest

None

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