Extreme oral myiasis

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ABSTRACT

يعد داء الديدان الحلزونية الفموي الشديد حالة نادرة تؤثر أكثر على المرضى طريحي الفراش والتي تكون الرعاية الصحية للفم لديهم مهملة. الإزالة اليدوية بمرحلة واحدة للنغف مع الأنسجة الميتة ثم إزالة المواد الغريبة والأنسجة الميتة ومن ثم الخياطة تحت التخدير الموضعي طريقة فعالة لعلاج هذه الحالة. أن التدابير الوقائية مهمة جميعها للقضاء على السبب ومنع الانتكاسة.

Extreme oral myiasis is a rare condition, mostly affecting bedridden patients whose oral health care measures are neglected. Single stage manual removal of the maggots along with the necrotic tissue, debridement, and suturing under general anesthesia is the most effective way to treat the condition. Preventive measures are also equally important to eliminate the cause and recurrence.

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The term "myiasis" was derived from the Greek word "myia," which means fly, and "iasis" meaning disease. This rare condition is caused by the larvae of flies, mainly from *Diptera* and *Chrysomyia bezziana* as they become attracted to the foul smell of damaged tissues. Myasis can be classified as obligatory, when larvae develops in living tissue, or facultative when maggots feed on necrotic tissues.[1] Infestation of the oral cavity by the larva of the common housefly or maggots is called "oral myiasis". This condition is commonly seen in animals, but rare in humans due to increased standards of living and health care measures. Myiasis can occur in any part of the body, but the most common sites for myiasis are the nose, eyes, ear, anus, vagina, and lungs.[2] The oral cavity is a rare site for myiasis. The aim of this paper is to report 2 cases of extreme oral myiasis due to neglect in patient care.

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Case Report. *Patient 1.* A 46-year-old female patient, bedridden for 3 years following a head injury was brought to the hospital with complaint of swelling, and not eating food for a week. On general examination, she was conscious, but not well-oriented. Local examination revealed bilateral swelling of the face and left submandibular region. Intra-oral examination showed extensive tissue ulceration and necrosis in the upper lip, labial gingiva, cheeks, tongue, lingual, and buccal sulcus (**Figure 1A**). Numerous maggots were seen burrowed inside the tissue, as well as a few moving around. She had very poor oral hygiene and advanced periodontitis. Debridement and maggot removal was carried out under general anesthesia (**Figure 1B**).

Patient 2. A 63-year-old female psychiatric patient was brought to the hospital with complaint of bleeding from the oral cavity. On general examination, the patient was conscious but disoriented. On local examination, the patient had large swelling of the lips and cheeks bilaterally. Intra-oral examination showed ulceration, and necrosis of the upper lip, maxillary labial, buccal, and palatal gingiva (**Figure 2A**). Oral hygiene was poor with advanced periodontitis. Surgical exploration and maggot removal was carried out under general anesthesia (**Figures 2B & 2C**).

Discussion. Oral myiasis is a very rare condition, first described in 1909,[1] since then only few cases of oral myiasis have been reported. Musca nebulo is the most common Indian house fly. They are seen in abundance

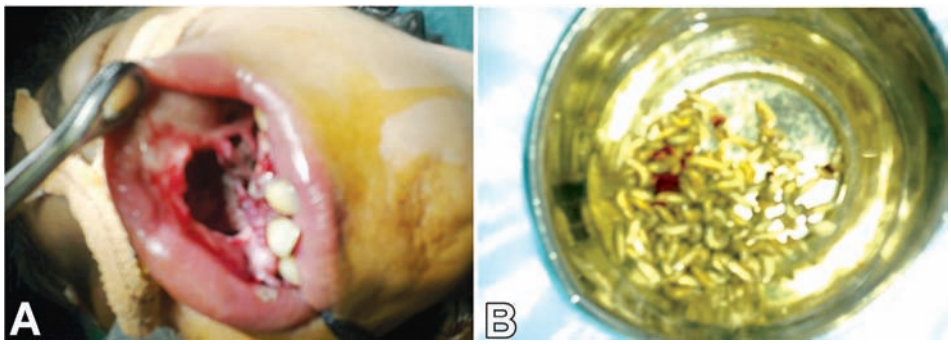

Figure 1 - The oral region of patient no. 1 showing: **A**) the surgical site; and **B**) maggots collected.

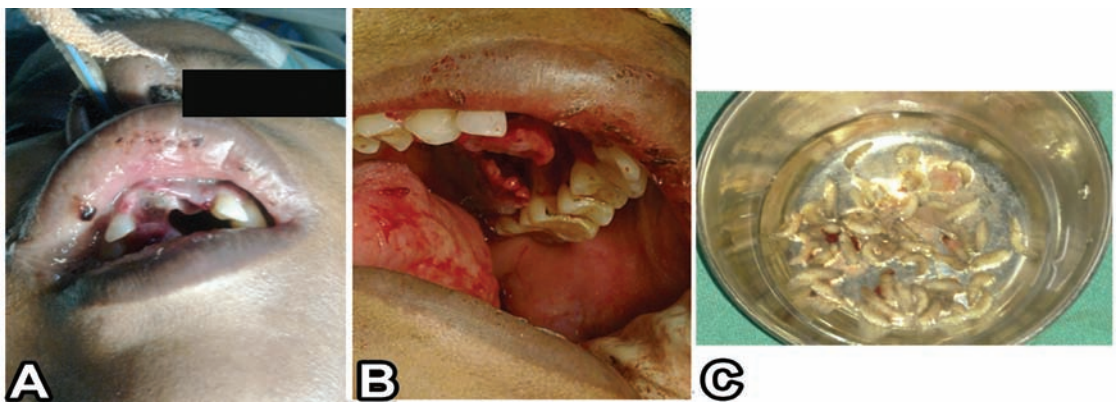

Figure 2 - The oral region of patient no. 1 showing the: **A**) surgical site; **B**) surgical exploration; and **C**) maggots collected.

in human dwellings and are active during summer and the rainy season.[1] The condition results as the larvae develop in decaying tissues, and developmental transition via the larval stage requires an intermediate host.[3]

The condition required for egg laying and survival of the larva is moisture, necrotic tissue, and suitable temperature. The periodontal pockets contributed for the mechanical support, and provide a suitable substrate and temperature for the survival of the larva. The larvae are photophobic, and therefore tend to hide themselves deep into the tissues, and also to secure a suitable niche to develop into pupa.[3,4] Proteolytic enzymes released by the surrounding bacteria decompose the tissue, and the larva feed on this rotten tissue.[5]

Infestation with maggots/myiasis is uncommon in humans at present, due to improved standards of living. Most cases were reported in developing countries and in the tropics, and very few in western countries.[6,7] Predisposing factors for oral myiasis are extraction wounds, poor oral hygiene, senility, mouth breathing during sleep, suppurative lesions, necrotic tissues, diabetes, and perivascular diseases mainly in the elderly, severe halitosis, alcoholism, cerebral palsy, mental retardation, and hemiplegia, and factors that favor persistent non-closure of the mouth. Both cases reported here were neglected patients that could not maintain good oral hygiene.

The traditional management for myiasis is mechanical removal of maggots. When there are multiple larvae and advanced stages of development and tissue destruction, local application of several substances, such as oil of turpentine, and the larvicidal drug like Negasunt have been used to ensure complete removal of all larva.[2,8]

Turpentine oil can cause tissue necrosis. The hyperplasia is, however reversible, and will regress once the stimulus is withdrawn. Systemic treatment includes broad-spectrum antibiotics, especially when the wound is secondarily infected. Recently, a systemic treatment with ivermectin, a semi-synthetic macrolide antibiotic was used for the treatment of oral myiasis.[9]

Both patients were treated under general anesthesia. All the maggots were removed by artery forceps. From the first patient, 85 maggots were removed,

and 123 maggots from the second patient. Thorough debridement and removal of the necrosed tissue was carried out, and the raw area was sutured with 4-0 Vicryl. Total dental extraction was carried out in both cases as the future maintenance of oral hygiene was uncertain. Post-operatively, patients were protected from flies using a mosquito net. Daily betadine irrigation and oral hygiene measures and systemic antibiotics were provided.

In all patients who are bedridden, or unable to maintain desirable oral hygiene as in head and spine injuries, stroke, psychiatry, mentally challenged cases, and so forth, need special oral and other health care measures.[10-13] The disease can be prevented by controlling the fly population, and maintaining good oral hygiene, use of mosquito nets, especially for compromised patients. Unfortunately, in the developing countries, some people live in low socio-economic conditions, predisposing the occurrence of the infection. Once the disease sets in, the only way to effectively remove the maggots is manual removal with forceps.[10,11] Usually these maggots burrow into the cheek and other soft tissue areas. Therefore, it is important to explore each and every ulcerated areas. There could be multiple maggots inside each burrowed space. Usage of turpentine oil to bring out the deeply seated maggots has been described in the literature.[14]

In conclusion, human cases of oral myasis are rare. Medical personnel taking care of the old or debilitated patients need to bear in mind the possibility of this condition, make a prompt diagnosis, and implement relevant intervention to prevent extensive tissue destruction. The condition can be completely benign and asymptomatic, resulting in mild to acute pain, or in extreme cases, cause death due to meningitis. Careful surgical removal of the larva and adequate debridement of necrotic tissue along with the above mentioned systemic therapy may provide more favorable results.

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