

Oral myiasis in a patient with neurological deficit - Case report**Miíase oral em paciente com déficit neurológico - Relato de caso**

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ABSTRACT

The term "myiasis" refers to human and animal parasites caused by fly larvae. The clinical manifestations of myiasis are not specific, they vary according to the area of the body involved and the species of fly. It is strongly associated with poor oral hygiene and is seen in people with predisposing conditions, such as lack of lip sealing due to malocclusion, tooth extraction, decreased body resistance, malnutrition, open-mouth breathing (especially during sleep), alcoholism, senility, neurological disorder, hemiplegia and facial trauma. The present work describes the particularities of diagnosis and treatment of a case of oral myiasis. A 17-year-old male patient with neurological deficit, totally dependent on his daily life activities. Oral examination revealed poor oral hygiene, presence of periodontitis and lesions in the palate and gingival regions, with swelling and presence of large numbers of larvae. Surgery under local anaesthesia was performed. After exposure of the affected region, the larvae were removed. Sixty-two larvae of various sizes were observed. Early and correct diagnosis of oral myiasis can be easily treated by the dentist by mechanical removal of the larvae with or without the use of local chemicals, with a favourable prognosis.

Key words: Oral myiasis; Oral pathology; Oral treatment; oral health.

RESUMO

O termo "miíase" refere-se a parasitas humanos e animais causados por larvas de mosca. As manifestações clínicas da miíase não são específicas, variam de acordo com a área do corpo envolvida e as espécies de mosca. Está fortemente associado à falta de higiene bucal e é visto em pessoas com condições predisponentes, como falta de selamento labial devido a má oclusão, extração dentária, resistência corporal diminuída, desnutrição, respiração de boca aberta (especialmente durante o sono), alcoolismo, senilidade, distúrbio neurológico, hemiplegia e trauma facial. O presente trabalho descreve as particularidades do diagnóstico e tratamento de um caso de miíase oral. Paciente do sexo masculino, 17 anos, com déficit neurológico, totalmente dependente de suas atividades diárias. O exame oral revelou má higiene bucal, presença de periodontite e lesões nas regiões palatina e gengival, com edema e presença de grande número de larvas. Cirurgia sob anestesia local foi realizada. Após a exposição da região afetada, as larvas foram removidas. Sessenta e duas larvas de vários tamanhos foram observadas. O diagnóstico precoce e correto da miíase oral pode ser facilmente tratado pelo dentista pela remoção mecânica das larvas com ou sem o uso de produtos químicos locais, com um prognóstico favorável.

Palavras-Chave: Miíase oral; Patologia oral; Tratamento oral; saúde bucal.

1 INTRODUCTION

The term "myiasis" is derived from the ancient Greek, where myio means fly and ase means disease. William Hope in 1840 used the term for the first time, referring to human and animal parasitic diseases caused by fly larvae. Four families of Calypratae, including Calliphoridae, Sarcophagidae, Oestridae, and Muscoids are considered the etiological agents of most of the specific or semi-specific myiasis in humans. Cases of myiasis in humans are more common in tropical areas due to the greater presence of species that cause specific myiasis. In underdeveloped countries, socioeconomic factors create hygienic and sanitary conditions contribute to the specific and semi-specific parasitic myiasis.

Myiasis is clinically classified as primary (caused by Biophaghos larvae, which feeds on living tissue), secondary (caused by necrobiophagous flies, which feeds on necrotic wound tissue) or accidental. Anatomically it is classified as intestinal, nasal, cutaneous, ophthalmic, oral and urogenital. [1, 2, 3, 4, 5]

Laurence first described oral myiasis in 1909. It is strongly associated with poor oral hygiene and is seen in people with predisposing conditions, such as lack of lip sealing due to malocclusion, tooth extraction, decreased body resistance, malnutrition, open-mouth breathing (especially during sleep), alcoholism, senility, neurological disorder, hemiplegia and facial trauma. The presence of necrotic tissue and poor oral hygiene causes severe halitosis, which lure flies to egg deposition. [1, 6, 7]

The clinical manifestations of myiasis are not specific, they vary according to the area of the body involved and the species of fly. General signs and symptoms may include fever, myalgia, arthralgia, hypereosinophilia, higher erythrocyte sedimentation rate, high inflammatory reaction at the site of infestation, pruritus, pain, swelling and local mobility. In the moral cavity, the region of prevalence is the anterior region of the maxilla. The appearance may range from small ulcers to large tissue destruction with the presence of larvae. The presence of larvae in the tissue is the key to the diagnosis of myiasis; however, it is worth noting that it may be associated with tumour or necrotic lesions. [1,7,10]

Based on two studies made in Brazil, 95 patients diagnosed with myiasis were analyzed, one in the state of Pernambuco and another in the state of Rio de Janeiro. It was found that 42.2% of the patients from Rio de Janeiro and 42.8% of the patients from Pernambuco were in the age range of 51-85 years, and that 62% of the patients from the states of Rio de Janeiro had low socioeconomic conditions. However, neither study cited the occurrence of myiasis in patients with neurological disorder. [11, 12]

2 MATERIALS AND METHODS

A 17-year-old male patient with neurological deficit, totally dependent on his daily life activities. He attended the maxillofacial surgery clinic of João de Barros Barreto University Hospital (HUIBB), in Belém Pará (PA) brought by family, requesting specialized treatment. It was observed gingival bleeding, foul smell in the oral cavity, difficulty sleeping and fever. The person responsible for the patient did not know the evolution time. At clinical examination, patient presented with a permanent oral opening. Oral examination revealed poor oral hygiene, presence of periodontitis and lesions in the palate and gingival regions, with swelling and presence of large numbers of larvae (Fig. 1 A and 1 B).

Figure 1: Intraoral physical examination revealed swelling in the attached gingiva (Fig. 1 A) and palate (fig. 1 B) with presence of large numbers of larvae.

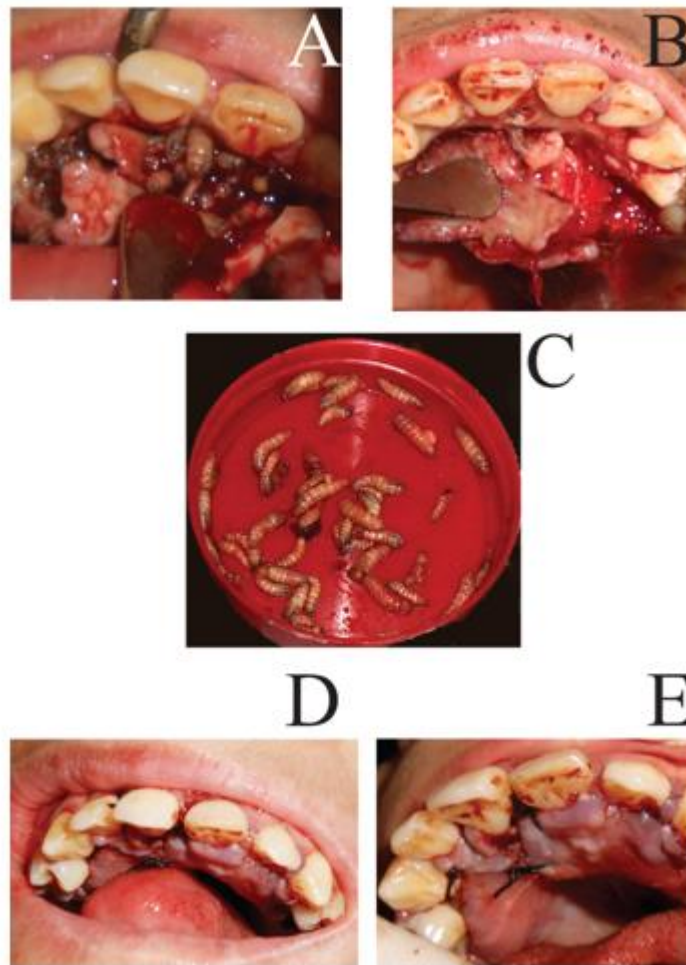
**A****B**

Font: João de Barros Barreto University Hospital (HUIBB).

After examination, the diagnosis was oral myiasis. The conduct adopted was the total removal of the larvae under local anaesthesia. Patient was anesthetized locally with 3%

Mepivacaine (30 mg / ml) without vasoconstrictor. Access was achieved through intra-sulcular incisions in the palatal region (Fig. 2 A). After exposure of the affected region, the larvae were removed with clinical and haemostatic fórceps (Fig. 2 B). Sixty-two larvae of various sizes were observed (Fig. 2 C). The site was sutured with wire Vicryl 4-0.

Figure 2: Intraoperative image showing surgical access (fig. 2 A), complete removal of the larvae (fig. 2 B) and separate larvae after removal (fig. 2 C).



Font: João de Barros Barreto University Hospital (HUJBB).

3 RESULTS

The patient returned to the maxillofacial surgery clinic of João de Barros Barreto University Hospital 07 days after the procedure for reevaluation and removal of suture. The clinical examination revealed a surgical site with good healing and without larvae (Fig. 3 A

and 3 B). The caregivers were instructed to perform careful oral hygiene, as well as routine evaluation of the patient's oral condition, in order to avoid reinfestation of the larvae.

Figure 3: Seven days postoperative with tissue in the healing phase (Fig. 3 A and 3 B).

**A****B**

Font: João de Barros Barreto University Hospital (HUIBB).

4 DISCUSSION

Myiasis corresponds to an infestation of living tissue by fly larvae. These flies appear in greater numbers mainly in tropical countries. The Amazon region is a favourable location to the development of the main species of flies that cause myiasis in humans. Higher temperatures and humidity corroborate the reproduction of these flies, added to the unfavourable socio-economic factor, which makes this region perfect for the appearance of this pathology. ^[1, 3, 2]

The occurrence of myiasis is more common in the elderly, debilitated, ill and mentally handicapped. Therefore, professionals and families involved in the care of these patients should know strategies for prevention, diagnosis and treatment of such disease. It is strongly associated with poor oral hygiene and is seen in people with predisposing conditions, such as lack of lip sealing due to malocclusion, tooth extraction, decreased body resistance, malnutrition, open-mouth breathing (especially during sleep), alcoholism, senility, neurological disorder, hemiplegia and facial trauma. These factors attract flies for larval deposition. [1,13,14, 15]

In the present case, the patient, because he has advanced neurological disease, is totally dependent on his relatives. Dependence, associated with neglect of oral hygiene, and consequent halitosis and lack of lip seal of the patient, contributed to infestation by larvae in the oral cavity. As the patient is aphasic, he cannot express the symptoms of the infestation, and the caregivers perceived the signs of abnormality only when the disease presents clinical signs. Thus, the patient demands care and a routine evaluation of the oral cavity as the main strategy for the prevention of infestation by fly larvae and other oral pathologies. [1, 10, 16]

In addition to the care, individual and collective protective measures are the main ways to prevent the installation of myiasis. Among them, to install mosquito nets on doors and windows of hospitals or domestic facilities, housing patients with lesions or any conditions predisposing to the installation of myiasis, avoid exposure of open wounds, ulcerations with necrotic tissue, infected eczema, as well as maintaining good hygiene individual and environmental, are extremely important procedures. [8, 9, 15]

In the patient's residence, there were no measures mentioned above due to the economic conditions of the patient. The lack of lip seal, and the patient's collaboration due to mental problems, added to the family's lack of information about preventive measures to avoid the onset and recurrence of myiasis, contributed to the infestation in the case described. It is important, however, to highlight the complexity of preventive oral care in patients with neuromotor disorders. The inability of the patient and the family to understand and collaborate with the strategies to prevent reinfestation by larvae were a challenge for the professionals involved in their care, and their adequacy to the patient's condition was necessary. [8, 9]

According to Law No. 13,146, of July 6, 2015, in which it establishes the Brazilian Law on the Inclusion of Persons with Disabilities (Statute of Persons with Disabilities) in

its Article 8, it is the duty of the State, society and the family to ensure the disabled person, with priority, the effectiveness of the rights related to life, health, education, habilitation and rehabilitation, transportation, accessibility, culture, freedom, family and community coexistence, among others arising from the Federal Constitution, the Convention on the Rights of Persons with Disabilities and its Optional Protocol, and from laws and other norms that guarantee personal, social and economic well-being.

As a result of this law, the family has the duty and / or obligation to treat such patients, so it is a constitutional crime the lack of adequate treatment for disabled patients. According to Article 90 of this law, "Abandon persons with disabilities in hospitals, nursing homes, shelter entities or similar: Penalty - imprisonment, from 6 (six) months to 3 (three) years, and a fine". Single paragraph. The same penalty applies to those who do not provide the basic needs of persons with disabilities when required by law or order. As in the presented case, the patient with neurological deficiency, the lack of care resulted in the disease.

Fares et al., in a case report, treating a ten-year-old patient with mental and paraplegic deficiency, concluded that oral myiasis is predominant in the rural population and in special patients, with mental illness, advanced senility, cachexia, among others. Regarding treatment, the good results obtained were due to the mechanical removal of the larvae rather than to the drug therapy used, whether local or systemic. [17]

According to the literature, the standard procedure to be adopted for cases of oral myiasis is the mechanical removal of the larvae carefully, with the aid of the periodontal curette and tissue forceps usually under anaesthesia or analgesia, depending on the clinical condition of the patient. Removal of the larvae should be done carefully so that they are not fragmented, and their remains remain in place, serving as a means of infection. In the case reported, the procedure followed precisely the studies reviewed, removing the larvae mechanically and with subsequent drug therapy. Therefore, the reported case is in agreement with the literature. [7, 15, 18]

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5 CONCLUSION

Myiasis primarily affects areas of the body where egg deposition is easily performed. It often affects individuals with low socioeconomic status with poor hygiene habits and

unhealthy conditions, patients with psychiatric and neuromotor disorders, diabetic and immunocompromised patients.

Patients with special health needs, among them, patients with advanced neurological disorders, constitute a group at risk for the development of oral myiasis. The prevention of this pathology is a challenge for caregivers and family members, especially in the case of patients with absence of lip seal.

When early and correctly diagnosed, the oral myiasis treatment is easily performed by the dentist by mechanical removal of the larvae with or without the use of local chemicals, with a favourable prognosis. Undoubtedly, information and guidance for family members, caregivers and long-term care institutions regarding oral and environmental care, as well as the routine assessment of the oral condition of these patients are the main preventive strategies for this group, including basic care health, hygiene, access to primary services, sanitation and potable water are fundamental to avoid cases of this pathology. In the present case, the patient was treated with mechanical removal of the larvae and systemic medications. Patient caregivers were instructed to provide adequate oral hygiene to avoid reinfestation.

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