ORAL MYIASIS: A CASE REPORT [1]

MIÍASE ORAL: RELATO DE UM CASO

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SUMMARY

Objective: report a case of oral and maxillofacial myiasis in a patient who was found in a forest region inside the city of Belém, Pará, in Brazil. **Case report**: a male patient, of unknown age, indigent, was found in a forest area inside the city of Belém, Pará, in the Brazilian Amazon region, and his mouth and the lower third of his face were covered in larvae. He was referred for care at the Municipal Emergency Hospital. Physical examination revealed a large area of necrosis that involved most of the lower third of his face and showed the presence of many live larvae, measuring about three millimeters on average and with fetid odor. The patient was febrile, malnourished and dehydrated. Anamnesis could not be properly conducted because the patient could not communicate at all, neither verbally or using writing. The initial procedure was the manual removal of the larvae, then, the patient was sent to surgery. **Final considerations:** health professionals, including dental surgeons, must be alert to episodes of myiasis in humans, since Brazil has favorable conditions for the proliferation of the main species of flies that cause this condition.

KEYWORDS: Myiasis, oral, facial.

INTRODUCTION

The term myiasis, originates from the Greek "myia" (= fly), and is used to describe the invasion of living tissues or cavities by fly larvae, that feed themselves and evolve as parasites.

The occurrence of this disease is most frequent in rural areas, in livestock[1]. When it occurs in humans, it most commonly affects people who are malnourished, have mental illnesses, an anterior open bite, periodontal disease, hemiplegia, epilepsy, residents of rural areas, alcohol users, people who breathe through the mouth, among others[2].

The frequency is higher in tropical and undeveloped countries, but can occur in developed countries[3]. The main flies that cause this disease in humans are easily found in Brazil, especially in regions with a hot and humid climate, especially during the rainy summer months. In the tropics, *Dermatobia hominis* and *Cochliomyia hominivorax* are the most common species that cause myiasis. *Cochiomyia hominivorax* is endemic in Latin America and, although statistics for the country are not available, is one of the main causes of myiasis in Brazil. Although that species often affect animals, reports of involvement in humans are more rare[4].

The clinical manifestations of myiasis are not specific and vary with the area of the body involved and the species of fly. Systemic signs and symptoms may include fever, myalgia, arthralgia, hyper-eosinophilia, high sedimentation rate of erythrocytes and inflammatory reaction at the site of infection, itching, pain, swelling and mobility at the site. The main area affected in the mouth is the superior anterior teeth[2].

According to these same authors, noting the presence of larvae in the tissue is the key to diagnosing myiasis, however it is worth emphasizing that it may be associated with tumor or necrotic lesions. Imaging examinations assist in the assessment of tissue destruction and extent of infestation.

Several treatment options are mentioned in literature, such as the application of asphyxiant substances, such as ether and formaldehyde. The treatment, which is essentially mechanical, or rather, involves the picking-off of larvae - one by one - must have the objective of completely removing the larvae[5]. In furuncular myiasis it is normal, in rural areas, to force the removal of the larvae by suffocation with a piece of bacon or adhesive plaster. This procedure is time consuming and does not always works, sometimes requiring a small surgical procedure under anesthesia. Among the various methods described for the clinical treatment of human myiasis, none have shown total efficacy[3]. Some new studies mention the experimental use of ivermectin for the treatment of human myiasis.

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Historically, the use of various antiseptics, asphyxiants and mercury-based products is reported. These substances were used in the form of inhalations, nasal washes, instillations in the external ear, and in a systematic way.

OBJECTIVE

The aim of this article is to report a case of oral and maxillo-facial myiasis, responsible for extensive tissue destruction in the lower third of the face in a patient who was found in a region of closed forest near the city of Belém, PA.

CASE REPORT

A male patient, of unknown age, indigent, was found in an area of closed forest near the city of Belém-PA - in the Brazilian Amazon region - and his mouth and the lower third of his face were covered by larvae. The patient was referred for care at the Municipal Emergency Room.

Physical examination revealed a large area of necrosis that involved most of the lower third of the face, associated with an extensive destruction of the mentonian region, including severe bone exposure. The lesion showed the presence of many live larvae, measuring 3 mm on average and with fetid odor. The patient was febrile, malnourished and dehydrated.

Anamnesis could not be properly conducted because the patient could not communicate at all, neither verbally or using writing, and he was mentally retarded. It was not possible to obtain any personal or family background information, as no family member came to look for him, even though the case was publicized by the media.

The initial procedure was the manual removal of the larvae, using tweezers and sterilized gauze. The patient was then sent to the operating room for debridement of the wound and removal of the remaining larvae. A large amount of necrotic tissue was removed. No ivermectin-based treatment was administered to this patient.

During the follow-up consultations there were no complications. Extensive aesthetic damage was observed due to the loss of epithelium. Later the patient was referred for plastic surgeries.

Figure 1. A: Clinical appearance soon after removal of larvae B: Surgery for removal of necrotic and damaged tissue.

Figure 2. A: Clinical appearance immediately after surgery B: Clinical appearance one month after surgery.

DISCUSSION

Myiasis is more common in developing countries, such as Latin America, Africa, the Middle East and Asia, although may also occur in developed countries. The higher frequency can be explained by the tropical climate and the socio-economic conditions of these countries, factors that contribute to the development of these infestations[3,4,6,7].

The case reported by Pasternak et al. [7] is different to most other cases reported in literature, because the patient was a healthy man, with a good socio-economic level, residing in the city of Sao Paulo. Most authors cite the rural area as the site with the highest frequency of cases, and some authors mention that approximately 85% of cases occur among rural residents[4]. The case reported here occurred in the city of Belém, in the Brazilian Amazon region, but is in line with the literature consulted as it deals with a patient in a precarious economic condition, and who was indigent.

The main species that cause myiasis in humans are *Cochliomyia hominivorax* (popularly known as "bluebottle") and *Dermatobia hominis* (botfly)[1,8,9,10]. In this case study, the larvae were not identified, because the treatment given does not depend on the species of fly. The fact that the patient was treated at a public hospital may have also hindered a more complete study. In a study by Nascimento et al. [9] it was found that it is rare that health professionals remove the larvae of the injury and subsequently send them to reference laboratories for identification. The normal practice is to remove the larvae and immediately dispose of them. This is what happened in this case.

The bluebottle is more abundant in regions with a hot and humid climate, and the quantity of this species increases in the rainy summer months, common in most of South America[1]. This is probably the species that caused the infestation in this patient. This information is consistent with the typical equatorial climate of the city of Belém, where it rains constantly.

The infestation of *Cochlliomyia hominivorax* larvae is common among animals, however, the involvement of humans is rare[4,11,12]. The occurrence of oral myiasis, as in the case presented in this article, is also considered rare in comparison to other sites affected[1,8,10]. Other authors believe it is a disease more common in humans living in tropical countries[7].

Nascimento et al.[9], unlike the literature they consulted, disagreed that human myiasis is a rare occurrence. However, they believe that reports of this condition are underestimated and minimized.

As for treatment, most authors agree that it is essentially mechanical, or rather, consists of picking-off the larvae, one by one, which is an uncomfortable and sometimes painful process that is embarrassing for the doctor and the patient. The manual removal may or may not be associated with the use of antibiotics to control infection[3,10,12].

Recent studies report the use of ivermectin for the treatment of myiasis in humans[2,3,6,8,10]. Ivermectin is an anti-parasitic that belongs to a class of compounds known as avermectins. This is a semi-synthetic macrolide antibiotic, and its use has been well documented in animals in the control of gastrointestinal and pulmonary parasites. This anti-parasitic was first used in the treatment of myiasis in animals and its success led to use in humans in the treatment of various diseases caused by parasites, including infestation by *Cochliomyia hominivorax*[6]. In 1993, ivermectin was considered safe for use in humans, and was indicated for the treatment of parasitosis[10].

Ribeiro et al. [3] reported that none of the patients they accompanied presented changes in liver or kidney function after the intake of oral ivermectin. Therefore, they concluded that it was a safe medication for human use. For some authors, although ivermectin is widely used in veterinary medicine, the use in humans is still not common. Although literature has reported good results with this medicine, its use is still difficult in Brazilian health units[11].

FINAL COMMENTS

Health professionals, including dental surgeons, must be alert to episodes of myiasis in humans, since Brazil has favorable conditions for the proliferation of the main species of flies that cause this condition. The observation, diagnosis and combating of this disease must be made before it reaches a critical, sometimes lethal, state with a marked destruction of tissue and bone, as described in this case.

RESUMO

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Objetivo: relatar um acaso de miíase oral e maxillofacial em um paciente encontrado em uma região de mata fechada na cidade de Belém, Pará, no Brasil. **Relato do caso**: homem, idade desconhecida, indigente, foi encontrado em uma área de mata fechada dentro da cidade de Belém, Pará, e sua boca e o terço inferior da face estavam cobertos de larvas. Ele foi encaminhado para o Pronto Socorro Municipal. O exame físico revelou uma extensa área de necrose envolvendo a maior parte do terço inferior da face, mostrando inúmeras larvas vivas, medindo cerca de três milímetros, em média e com odor fétido. O paciente estava febril, desnutrido e desidratado. A anamnese não pôde ser adequadamente conduzida, devido o paciente não conseguir comunicar-se, nem verbalmente, nem através de escrita. O procedimento inicial foi a remoção mecânica das larvas, sendo que, posteriormente, o paciente foi encaminhado para cirurgia. **Considerações finais:** profissionais de saúde, incluindo cirurgiões-dentistas, devem estar atentos para a ocorrência de miíase em humanos, pois o Brasil possui condições favoráveis a proliferação de várias espécies de moscas causadoras desta condição.

Palavras-chave: Miíase, oral, facial.

REFERENCES

1. Fares NH, Melo DV, Stucchi N, Carvalhosa AA, Castro PHS, Siqueira CRB. Miíase em paciente com 10 anos de idade: Relato de caso clínico e revisão de literatura. Rev de Clin Pesq Odontol 2005; 4:49-54.
2. Cencil J, Zardo M, Takahashi A, Sá ACD, Martins LD, Gonçalves RCG. Miíase bucal – Revisão da literatura. Publ UEPG Ci Biol Saúde 2006; 12:39-43.
3. Ribeiro FAQ, Pereira CSB, Alves A, Marcon MA. Tratamento da miíase humana cavitária com ivermectina oral. Rev Bras Otorrinolaringol 2001; 6:755-761.
4. Takahagi RU, Gonçalves FP, Madeira NG, Schellini AS. Oftalmomiíase externa causada por Cochliomyia hominivorax. Rev Bras Oftalmol 2007; 1:58-62.
5. Fonseca DR, Azevedo IKZ, Canonice AD, Cornélio SS, Oliveira JR MR, Santos CA. Miasis buco-maxilo-facial: Reporte de un caso. Acta Odontologica Venezolana 2007; 45(4).
6. Pasternak J, Joo SH, Ganc AJ, Durão JR MS, Morsh RD, Pinto TH. Um caso de infestação de orofaríngе por Cochliomyia hominivorax. Einstein 2007; 5:170-172.
7. Marquez AT, Mattos MS, Nascimento SB. Miíases associadas com alguns fatores sócio-econômicos em 5 áreas urbanas do Estado do Rio de Janeiro. Rev Soc Bras Med Trop 2007; 40:175-180.
8. Boros LF, Boros LH, Boros LF, Silva PA, Bordini JR J. Miíase labial. Rev Dens 2006; 1:1-10.
9. Nascimento EMF, Oliveira JB, Paes MJ, Lobo AP, Silva ALA, Santos JR ER, Leal JLF, Moya-Borja GE. Miíases humanas por Cochliomyia hominivorax (Coquerel, 1858) (Diptera, Calliphoridae) em hospitais públicos na cidade do Recife, Pernambuco, Brasil. Entomol Vect 2005; 12:37-51.
10. Shinohara EH, Martini MZ, Oliveira Neto HG, Takahashi A. Oral myiasis treated with ivermectin: case report. Braz Dent J 2004; 15:79-81.
11. Carvalho RWF, Santos TS, Antunes AA, Filho JRL, Anjos ED, Catunda RB. Oral and maxillofacial myiasis associated with epidermoid carcinoma: a case report. J Oral Sci 2008; 1:103-105.
12. Rossi-Schneider T, Cherubini K, Yurgel LS, Salum F, Figueiredo MA. Oral myiasis: a case report. J Oral Sci 2007; 1:85-88.

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