

Unusual presentation of more common disease/injury

Myiasis infestation in advanced oral squamous cell carcinoma

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Oral myiasis is a rare manifestation in humans and is vulnerable to attack in conditions leading to persistent mouth opening along with poor oral hygiene, suppurating lesions and cancerous wound, mainly in tropical countries. Myiasis is diagnosed clinically based on the presence of maggots and traditional management is the mechanical removal of the larvae. This is a case report of myiasis in a 44-year-old man diagnosed with invasive oral squamous cell carcinoma. The treatment consisted of manual removal of the larvae and cleaning with aqueous chlorhexidin 0.12%. The patient's management was antisepsis, larval removal and general care, performed weekly. The patient died 2 months later. The management of patients by healthcare service and hygiene orientations is recommended to prevent oral myiasis infestation, mainly in patients living in fly breeding habitats and who do not comply with basic oral hygiene measures, which may make individuals more prone to develop myiasis.

BACKGROUND

Myiasis is a rare complication of advanced ulcerated cancer.¹ It is a pathology caused by the larvae in human tissue

that evolve to a parasite and is mainly found in tropical countries.^{2,3} The main contributing factor is probably the higher levels of exposure to myiasis-causing flies due to



Figure 1 Chronic malignant wound developed from the extension of advanced cancer into the structure of the skin, producing a raised or ulcerating necrotic lesion in the patient.

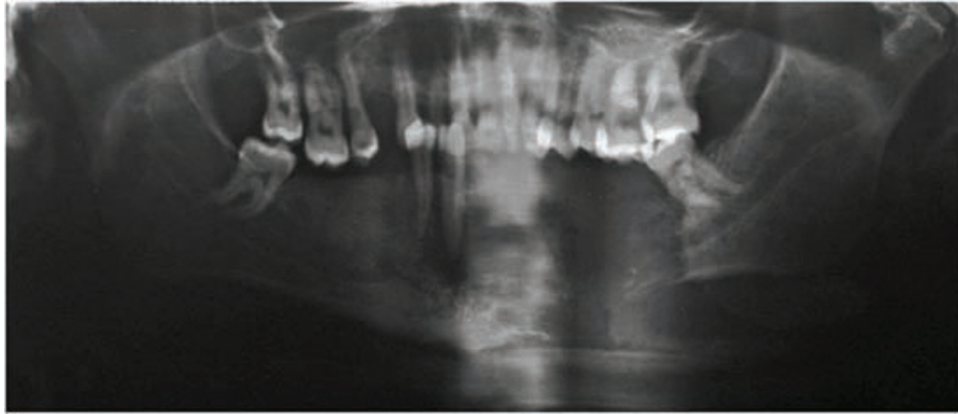


Figure 2 Panoramic radiography shows radiolucent area in anterior alveolar ridge and left side of the mandible, pathological fracture and involvement of the mandibular canal.

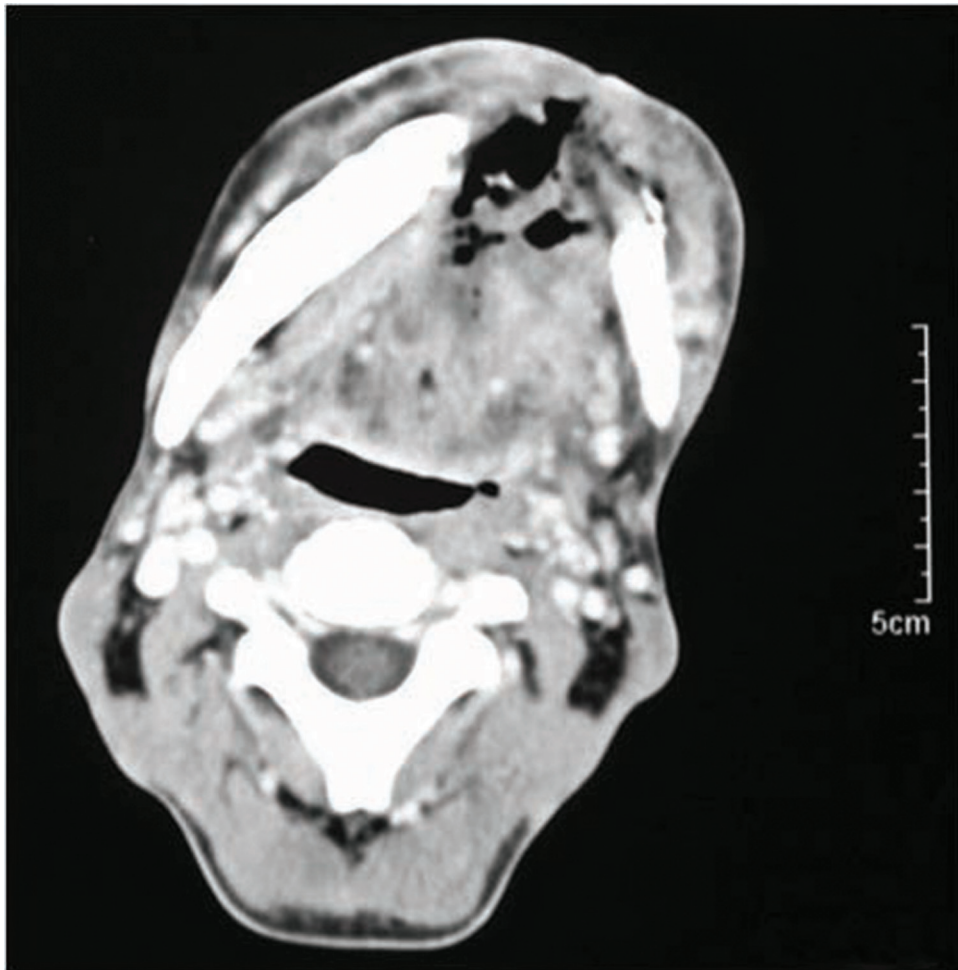


Figure 3 Axial CT scan reconstructed shows soft-tissue mass in anterior alveolar ridge. Mass extends posteriorly into the floor of the mouth. CT scan was interpreted as showing mandibular invasion with infiltration of adjacent subcutaneous tissue and loss of anatomical planes.

persistent poor hygiene and open wounds.⁴⁻⁶ Myiasis is diagnosed by observing the larvae as they periodically surface in the central punctum of the lesion.⁷ The maggots scrape away the tissues and lacerate the fine blood vessels, while feeding. During feeding on necrotic or living tissue,

the caudal ends of the maggots remain visible at the surface of the lesion, enabling the larvae to breathe.⁵ Rapid extension into surrounding tissues may occur and can cause tissue destruction and morbidity.⁷ Haemorrhage from the lesion is severe and the surrounding tissue becomes tense,



Figure 4 Intraoral analysis of the patient: limitation on mouth opening, malodor, poor hygiene and dental caries.

oedematous, emitting characteristic foul-smelling lesion.⁵ The treatment is based on local disinfection and mechanical removal of the larvae.¹ Recently, a systemic therapy with ivermectin, a semi-synthetic macrolide antibiotic, has been used for treat oral myiasis,^{4 7–10} but removal of the parasite is essential to cure the inflammatory process and prevent secondary infections.⁸ Flushing the wound with nitrofurazone has also been suggested to cause an anaerobic environment to the larvae.¹¹ The disease should be prevented by controlling fly population, maintaining good oral and personal hygiene, cleaning and covering the wounds and by educating the susceptible population where basic sanitation is meagre.^{2 6 12 13}

CASE PRESENTATION

A 44-year-old man, dependent on alcohol and tobacco, living in a rural area with low economic status and having poor living conditions came to the Federal District Base Hospital, Brazil and presented with the complaint that worms were crawling out of the cancer ulcer since 4 days. The patient was diagnosed with advanced oral squamous cell carcinoma with ulcerated necrotic wound (figure 1). The initial stage of disease was T₂N₂M₀. Panoramic radiograph and CT scans were taken before the occurrence of myiasis. Panoramic radiograph shows an osteolytic area in the mentum and left ramus of the mandible, with irregular margins involving the teeth 43, 44 and 38. The mandibular canal was affected and it is possible to observe the extension of the cancer lesion to the base of the mandible (figure 2). CT scan shows soft-tissue mass in anterior alveolar ridge with infiltration of adjacent subcutaneous tissue and loss of anatomical planes (figure 3). Medical

history revealed a palliative treatment for oral cancer and the oncology therapy was planned for symptomatic reductions of disease with intravenous administration of *morphine daily*.

Intraoral examination revealed limitations on opening mouth, malodor, high plaque accumulation and dental caries (figure 4). The patient's family reported extreme difficulty in performing the cleaning for him, mainly after meals, in which much of the food was expelled from the cancer ulcer. Although he presented with bandage to protect the exposed area, poor hygiene, a foul smell and extensive oral myiasis were observed (figure 5). The extension of ulcer was related to cancer. Myiasis occurred after the advanced disease status of cancer.

INVESTIGATIONS

Laboratory findings were normal except for a slightly low haematocrit (34%). He was negative for HIV, and hepatitis B and C.

TREATMENT

The maggots were manually removed with clinical pincer (figure 6) and the wound was cleaned with aqueous chlorhexidin 0.12%. Bleeding through the lesion was controlled by the application of pressure with sterile gauze. The patient was advised on personal hygiene and oral hygiene instructions were given.

OUTCOME AND FOLLOW-UP

A nasogastric tube was inserted into the patient for feeding because the food was being expelled from the cancer ulcer.



Figure 5 Extensive myiasis localised within cancerous wound.



Figure 6 Removed maggots.

All the maggots were manually removed. The patient's management was realised weekly by antiseptics and general care. The patient died 2 months later. The cause of death was acute haemorrhage caused by extension of oral cancer.

DISCUSSION

Myiasis in oral squamous cell carcinoma is a rare condition. It was found in only three cases in the literature.^{3 5 13} Myiasis is diagnosed clinically based on the presence of maggots and affects mostly the uncovered body areas where oviposition is easily carried out and is associated to poor socioeconomic living conditions.^{2-5 7 12} In the reported case, the affected patient lived in a hostile habitat and had deficient hygiene. This may have contributed to the occurrence of myiasis. The myiasis is diagnosed clinically based on the presence of the maggots.⁴ In the present case, the larvae could not be identified. Regarding therapy, ivermectin has been suggested to contribute in the treatment of myiasis,^{4 7-10} but removal of the parasite is essential to cure the inflammatory process and prevent secondary infections.⁸ Some authors reported that after 5 days the maggots were mobile despite the ivermectin therapy (6 mg orally) and the careful surgical removal of the larvae and the adequate debridement were the efficient treatment.⁴ However, it has been suggested that the dose should be associated with the patient's weight for successful results—which therapy should start with doses that are two tablets for patients weighing 40–60 kg (12 mg) and three tablets (18 mg) for patients of 60–90 kg.⁹ Moreover, flushing the wound with nitrofurazone has been recently suggested to cause a successful anaerobic environment to the larvae.⁷ However, some authors have argued that irrigation of the maggots by a disinfectant and mechanical removal are usually sufficient.^{1 4 10 13} In the reported case, the treatment consisted by manual removal of the maggots and disinfection with aqueous chlorhexidin 0.12%. Complete removal of the larvae was performed manually and no systemic treatment was necessary.

Learning points

- Myiasis is a rare complication of oral advanced squamous cell carcinoma that needs attention.
- Poor socioeconomic living conditions, mainly among homeless, aged, or debilitated persons, may predispose to cases of myiasis.
- Myiasis should be prevented by controlling fly population, maintaining good oral and general cleanliness such as cleaning and covering the wounds and by educating the susceptible population where basic sanitation is meagre.

Competing interests None.

Patient consent Obtained.

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