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Pseudomembranous oral candidiasis resolved with a mouthwash containing 0.05% chlorhexidine + 0.05% cetylpyridinium chloride

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Abstract. – A 50-year-old woman was referred to the clinic reporting oral discomfort during the previous month and plaques of a white removable slough. Diagnosis of pseudomembranous oral candidiasis was clinically confirmed. When the tongue and palatal mucosa were wiped with gauze, the soft yellowish-white slough detached revealing the erythematous surface beneath. The patient also presented paranoid schizophrenia and severe depression, pulmonary emphysema, and two vertebral hernias. She was a smoker (10 cigarettes per day) with xerostomia that was being treated with: bupropion, reboxetine, quetiapine, trazadone clotiapine, pregabalin, fentanyl (patches), and alprazolam. To minimize the risk of potential drug interactions, a mouthwash containing 0.05% chlorhexidine + 0.05% cetylpyridinium chloride was prescribed three times a day for two weeks. At the end of the two weeks, the candidiasis had abated.

Key Words:
Pseudomembranous oral candidiasis, Chlorhexidine, Cetylpyridinium chloride, Schizophrenia, Drug interactions.

Introduction

Pseudomembranous oral candidiasis is the best-known clinical form of oral candidiasis. It is characterized by the presence of yellowish-white lumps or plaques of a soft or gelatinous consistency that grow centrifugally. This is the 'classic' form of oral candidiasis but not the most common variant[1]. The plaques of yellowish-white color can be detached and removed with gauze and have an appearance reminiscent of curdled milk. Areas beneath the plaques usually exhibit signs of inflammation. Slight hemorrhaging may occur when the plaques are removed, revealing erythematous areas beneath. The plaques may be located on any part of the cheek or oropharyngeal mucosa or tongue. They are usually odorless. Some patients report a burning sensation, dysgeusia or dysphagia. Diagnosis is usually made by clinical examination and culture of samples[1,2].

Clinical Presentation

A 50-year-old woman came to the Department for Medically Compromised Patients in Dentistry (University of Granada, Spain). She reported oral discomfort during the previous month, making eating and swallowing difficult. In oral exploration, white 'stains' were observed on the oral mucosa, mainly in the palatal region and on the surface of the tongue. They presented a yellowish-white slough that detached when wiped with gauze, revealing an erythematous area beneath. These observations confirmed a diagnosis of pseudomembranous oral candidiasis (Figure 1).

The patient had been diagnosed with paranoid schizophrenia and severe depression since 2013. This was being treated with: 300 mg quetiapine (0-0-1); 40 mg clotiapine (0-0-1); 100 mg trazodone (0-0-1); 150 mg bupropion (1-0-0); 4 mg reboxetine (1-1-0); 100 mg trazodone hydrochloride (0-0-1); 1 mg alprazolam (1-1-1); and 2 mg lormetazepam (0-0-1).

Diagnosed with pulmonary emphysema in 2019, the condition was in treatment with oxygen therapy and (160 mg) budesonide/formoterol inhalers and 2.5 mg tiotropium bromide (0-0-1). In 2020, two hernias were diagnosed in the lumbar region of the vertebral column and according to the patient, a specialist had deemed them inoperable. The hernias were being treated with

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Figure 1. Initial lesions showing white plaques on a mild hemorrhagic base and erythematous areas.

150 mg pregabalin (1-1-1); 25 mcg/h fentanyl (transdermal patches, changed every three days); 1 g paracetamol (1-1-1); and 20 mg omeprazole (1-0-0).

The patient said that she smoked 10 cigarettes a day. She also commented that she suffered from a dry mouth and did not often brush her teeth. Gingivitis was observed in the areas surrounding the remaining teeth.

Given the medical pathologies that the patient presented and the considerable number of drugs she was taking, it was decided to prescribe mouthwashes containing 0.05% chlorhexidine + 0.05% cetylpyridinium chloride three times a day for two weeks in order to minimize potential adverse reactions to drug interactions. The patient was urged to improve her oral hygiene regime. After two weeks, the candidiasis had abated (Figure 2). The patient has kindly given the authors her informed consent to describe and publish her case.

Discussion

Various systematic reviews by Mushi et al[3], state that pseudomembranous oral candidiasis is the most prevalent form of candidiasis. In the present case, candidiasis was diagnosed in a poly-medicated patient with various systemic pathologies, in particular, schizophrenia and severe depression. She also presented poor oral hygiene. When a patient exhibits oral mucosa lesions characterized by white plaques, differential diagnosis must be conducted to confirm the presence of pseudomembranous oral candidiasis, differentiating it from leukoplasia, oral lichen planus, lesions derived from biting the cheek mucosa, Queyrat erythroplasia, or oral squamous cell carcinoma (as *Candida* produces substances [nitrosamines] with an oncogenic capacity). In this patient, the decisive diagnostic sign was the white slough that detached when wiped with gauze. As noted by Baumgardner[4], a distinguishing feature of pseudomembranous oral candidiasis is that the white plaques can be wiped away, exposing an erythematous surface.

The patient presented several factors that would favor candidiasis: poor oral hygiene, smoking and xerostomia produced by the antipsychotics, antidepressants, and benzodiazepines that she was taking. In particular, drug-induced xerostomia was a crucial factor for developing candidiasis. Mahajan et al[5], have shown that the pseudomembranous type of oral candidiasis is associated with decreased salivary activity, as noted by Muzyka in 2005[6].

Treatment of pseudomembranous oral candidiasis is based mainly on: improving predisposing factors; imidazole antifungals (miconazole, ketoconazole, itraconazole, or fluconazole)[3] administered either topically (in solution, suspension, or as tablets) or systemically (ketoconazol); small volumes of hydrogen peroxide mouthwash; and preventative antimicrobial mouthwashes of the chlorhexidine type[1,2,4,7,8]. Drug treatment should be topical in the first instance but combined topical and systemic administration is recommended in severe or persistent cases[1,2].

In response to the patient's predisposing factors, we urged her to improve her oral hygiene,

Figure 2. Appearance of the oral cavity after 2 weeks administration of a mouthwash containing 0.05% chlorhexidine + 0.05% cetylpyridinium chloride, three times a day.

as recommended by authors such Baumgardner[4]. We also encouraged her to cut down smoking, even though her psychiatric conditions would make this difficult. In fact, the patient reported back that she had been unable to do this. Halting the drug treatments causing the xerostomia was unviable due to the underlying pathologies. Their treatment depended on these drugs and halting administration could affect the patient's stability. Ardizzoni et al[9], have suggested that chlorhexidine- and cetylpyridinium-containing mouthwashes may be effective in regulating microbial homeostasis of the oral cavity, by providing a positive balance for oral health. To treat the candidiasis, we opted for a mouthwash containing 0.05% chlorhexidine + 0.05% cetylpyridinium chloride, three times a day for two weeks, as diverse research articles support its use not only as prevention but also for treating oral candidiasis[10-17]. According to Moroz[10], chlorhexidine exhibits strong antifungal efficiency. The antifungal effect of a mouthwash depends on its composition and the species of fungus to be dealt with.

Antifungals present numerous drug-drug and drug-disease interactions which the clinician must be aware of when prescribing one[18,19]. In this sense, our patient was taking trazodone, which can produce drug interactions with itraconazole and ketoconazole, causing adverse reactions[19]. This was the main reason why we decided to prescribe a chlorhexidine- and cetylpyridinium-containing mouthwash.

After two weeks, the candidiasis had abated, and the patient reported that she could now eat and swallow without any discomfort.

Conclusions

Treatment of pseudomembranous oral candidiasis with mouthwash containing 0.05% chlorhexidine + 0.05% cetylpyridinium chloride three times a day for two weeks was found to be effective in this case of a polymedicated patient with schizophrenia and severe depression, for whom imidazole antifungals could potentially cause adverse drug interactions.

Conflict of Interest

The Authors declare that they have no conflict of interests.

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