Candida: case report of an uncommon presentation of the common culprit

Précis

Oral candidiasis is a relatively common infection, which can significantly impact on patient quality of life. While clinicians are aware of the common presentations of *candida*, we highlight an atypical presentation.

Abstract

Candida albicans is present as a normal commensal fungus of the oral cavity in 35-69% of the healthy adult population. Infection is caused by an overgrowth of these normal fungi, which can be precipitated by systemic or local host factors. Thrush is a well-known and recognisable presentation of oral candidiasis; however, it is prudent that clinicians be aware of other less common presentations.

Here we describe a case involving soft tissue changes in the oral cavity that proved to be a diagnostic challenge for clinicians across various disciplines. This case aims to highlight the diagnostic dilemma that can face clinicians when diagnosing oral lesions and the benefits of a multidisciplinary approach. Candidiasis may not always present as a white coating on the mucosa, but can also cause soft tissue changes of the tongue. The patient's medical history should be thoroughly inspected to identify any potential contributing factors.

Keywords: *Candida*; *Candida albicans*; oral manifestation; tongue nodule; fissured tongue.

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Introduction

Various species of *Candida* are present as normal commensal fungi of the oral cavity. Carriage of *Candida* in the oral cavity is reported to be as high as 69% in the normal, healthy adult population.[1-3] A variety of local and systemic host factors can lead to an overgrowth of the opportunistic pathogen (**Table 1**).[4] It is likely that the increasing prevalence of antibiotic and steroid use, along with an ageing or medically compromised patient population, has contributed to an increased incidence of symptomatic *Candida* in recent years.[5] Candidal infection commonly presents as a white, creamy coating on the mucosa that can be scraped away leaving a red erythematous appearance.[6] Symptoms such as a burning, tingling or stinging sensation are not uncommon.[7] Other, more discrete presentations are possible (**Table 2**).[8]

Case report

We present an atypical case of candidal infection in a postmenopausal woman. An asymptomatic, fissured, nodular appearance of the right dorsum tongue was noticed by the patient in December 2018. This appearance prompted the patient to attend her general medical practitioner (GMP). The tough, fibrous lesion measured approximately 2cm in length by 1cm in width on presentation. On attending her GMP, a referral was made to an ear, nose and throat (ENT)

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Table 1: Local and systemic factors predisposing to candidiasis.[4]

Local factors	Systemic factors
Impaired local defence mechanisms	Impaired systemic defence mechanisms
Decreased saliva production	Primary or secondary immunodeficiency
Smoking	Immunosuppressive medications
Atrophic oral mucosa	Endocrine disorders – diabetes
Topical medications – corticosteroids	Malnutrition
Mucosal diseases (oral lichen planus)	Congenital conditions
Altered or immature oral flora	Broad-spectrum antibiotic therapy
Poor oral hygiene	
Dental prostheses	

Table 2: Differential diagnosis on presentation.

- Fibrous hyperplasia
- Wegener's granulomatosis
- Lichenoid reaction
- Oral lichen planus

FIGURE 1: Lesion on presentation on the right lateral tongue.

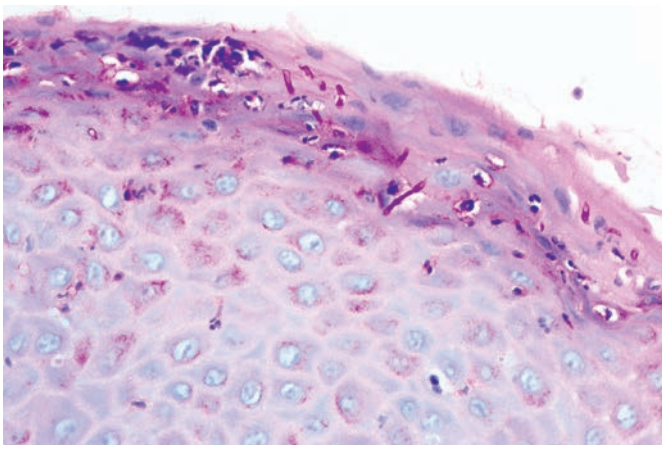

FIGURE 2: 40x image of a PAS stain highlighting fungal hyphae within the parakeratin layer.

consultant in South Infirmary University Hospital, Cork. The lesion remained asymptomatic, but the tongue felt enlarged and swollen. This lady was seen by a consultant in December 2018, who reassured her that there were no sinister features to the lesion; however, no definitive diagnosis was provided. The ENT consultant referred the patient to Cork University Dental School and Hospital for further examination.

Medically, this patient had a hysterectomy in 2003 and commenced hormone replacement therapy (HRT) in the form of an oestrogen patch in September 2018. A daily seretide (salmeterol) inhaler for asthma was taken, along with a daily antihistamine (cetirizine) for dust and pollen allergy. The patient reported that she was careful to rinse her mouth out following use of the inhaler. The patient was a non-smoker, a retired laboratory technician, and was currently caring for her elderly mother.

On initial presentation to Cork University Dental School and Hospital in January 2019, clinical examination showed no cervical lymphadenopathy, no asymmetry and a normal skin tone. Mouth opening was not restricted. Intra-orally, the hard and soft palate, floor of mouth and buccal mucosa were normal, pink and healthy in appearance. The patient was partially dentate and did not wear any dental prosthesis. Oral hygiene was good.

The right lateral border of the tongue extending to the dorsal surface showed a corrugated, fibrous, fissured, puckered appearance approximately 2.5cm in length by 1.5cm in width. This area had a tough fibrous texture. The left side of the tongue was of normal soft texture and had a healthy, pink, papillated appearance on initial presentation in January 2019. There was no alteration of taste, sensation or range of movement of the tongue. The tongue was a uniform pink colour. No white coating was present on the tongue. No induration, ulceration, striation or speckling were observed on presentation. Saliva quantity and quality appeared normal on subjective assessment by the treating clinician; however, objective saliva assessment was not undertaken.

Clinically, the tongue appeared granulomatous and fissured (**Figure 1**). The patient consented to an incisional biopsy under local anaesthetic to aid definitive diagnosis. Two samples were taken, one from the posterior aspect of the lesion on the right lateral tongue, the second from the anterior aspect of the lesion.

Initial histopathology reports indicated that both biopsy specimens showed similar features characterised by hyperplastic squamous mucosa with surface parakeratosis and intraepithelial neutrophils. There was underlying acute and chronic stromal inflammation with a somewhat band-like pattern, raising the possibility of lichen planus. Granulomas were not identified. There was no evidence of a vasculitic process, dysplasia or malignancy. The histopathology department was contacted seeking any further advice or findings that might aid diagnosis. A supplementary report followed, stating that periodic acid-Schiff (PAS) stain had highlighted the presence of fungal hyphae in both specimens (**Figure 2**). *Candida albicans* was identified.

FIGURE 3: Lesion on the right lateral tongue at four-week review.

FIGURE 4: Lesion on the left lateral tongue identified at four-week review appointment.

FIGURE 5: Lesion on the right lateral tongue at six-month review.

FIGURE 6: Resolution of lesion on the right lateral tongue at 12-month review.

FIGURE 7: Complete resolution of lesion on the left lateral tongue at 12-month review.

Following diagnosis of fungal hyphae, a systemic antifungal was prescribed – 100mg fluconazole once daily for two weeks followed by 50mg fluconazole daily for a further two weeks. Upon review after four weeks, the patient reported that the tongue had felt less swollen following the initial 100mg course of antifungal; however, the patient felt that the corrugated appearance started to return once dosage reduced to 50mg daily. On clinical examination following four weeks of oral fluconazole, the right lateral tongue retained the fissured, puckered appearance, but the fissures appeared less deep and pronounced (**Figure 3**). However, a new 0.5 x 0.5cm shallow corrugated lesion was noted on the left lateral border of the tongue, which was not present on previous examination (**Figure 4**). The patient continued fluconazole 100mg daily for six months. Liver function tests were continuously monitored.

On review in November 2019, 10 months following presentation to Cork University Dental School and Hospital, the texture of the tongue was soft and uniform (**Figure 5**). Both the lesions on the left and right lateral borders of the tongue had resolved completely. Further review in January 2020 showed maintenance of normal healthy soft tissue intra-orally (**Figures 6** and **7**). Our department will continue to monitor the health of the oral soft tissues in the coming months.

Discussion

This case describes a hyperplastic, nodular lesion of the dorsum and lateral border of the tongue. There were no typical signs or symptoms that one would expect to see associated with a candidal infection. Oral *Candida* commonly

Table 3: Classification of oral candidiasis.[8]

Primary oral candidiasis	Secondary oral candidiasis
Acute	**Oral manifestations of systemic mucocutaneous candidiasis**
Pseudomembranous	Thymic aplasia
Erythematous	Candidosis endocrinopathy syndrome
Chronic	
Erythematous	
Pseudomembranous	
Hyperplastic	
Nodular	
Plaque-like	
Candida-associated lesions	
Angular cheilitis	
Denture stomatitis	
Median rhomboid glossitis	
Keratinised primary lesions with candidal superinfection	
Leukoplakia	
Lichen planus	
Lupus erythematosusa	

presents in two forms: white or erythematous (**Table 3**).[8,9] White subgroups include hyperplastic and pseudomembranous, while erythematous or red subgroups include acute atrophic, median rhomboid glossitis and angular cheilitis.[8] These presentations are generally well recognised and treated by clinicians. This case proved a diagnostic challenge as the entire oral mucosa had a normal, pink healthy appearance. However, the topography and the texture of the tongue was dramatically altered. Histopathological reports need to be correlated with clinical findings if no definitive findings are reported. In this case, the initial histopathological report was suggestive of oral lichen planus; however, there were no clinical findings such as Wickham's striae to correlate this finding. It is prudent to involve the whole team in challenging cases; in this scenario we contacted the histology department to see if any further information could be provided to aid diagnosis.

It is accepted that medications such as corticosteroids can have xerostomic effects, which predispose patients to oral candidiasis.[10] In retrospect, critical review of the patient's current list of medications, which included a corticosteroid inhaler and an antihistamine, should have led to the inclusion of candidiasis in the differential diagnosis.

Of note, this patient was postmenopausal and had commenced HRT in the form of an oestrogen patch three months prior to noticing the changes in appearance of the tongue in December 2018. Although there is no definitive evidence that this was a causative relationship, it has been shown that patients on HRT who wear dentures are a high-risk group for candidiasis.[11,12] Hormone depletion post menopause can influence the condition of the oral mucosa and lead to oral symptoms such as dry mouth.[13] Budtz-Jorgensen *et al.* emphasise the effect of hormonal changes and endocrine disorders on the progression of normal fungus to fungal infection.[14] However, it should be noted that this study focused on dependent women in full-time care with a mean age of 85 years. Other *ex vivo* studies show that HRT, such as estradiol, an oestrogen patch used by the patient in our case, increased the susceptibility of candidiasis.[15] It was discussed with the patient that the HRT could be a contributing factor to the onset of the alteration to the tongue. Finding alternative treatment or cessation of the HRT in discussion with the medical practitioner was discussed. The patient was reluctant to cease HRT due to the much improved quality of life with regard to postmenopausal side-effects experienced since commencement.

Following advice from histopathology on the presence of fungal hyphae and commencement of systemic antifungal medication, an almost immediate improvement was noted in the appearance and texture of the tongue. Although significant improvement of the lesion was seen immediately, the lesion had not resolved completely on review at two and four weeks. Following a protracted six-month period of treatment with systemic fluconazole, the tongue had returned to a normal, healthy appearance and texture.

Conclusion

Oral candidiasis is a relatively common infection, which can significantly impact on patient quality of life. While clinicians, both dental and medical, are well aware of the common presentations of *Candida*, we believe it is useful to highlight the more atypical presentation seen in this case and to note the referral route to diagnosis. In this case the referral from GMP to ENT surgery and then on to oral surgery at Cork University Dental School and Hospital highlights how oral lesions often do not have a single definitive referral pathway and the benefits of building interdisciplinary links. The case presented here is suggestive of a potential association between the oral lesion and the HRT therapy; however, there are many confounding factors and more detailed research is required in the field.

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CPD questions

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1. What is the most common species of *candida* found in the oral cavity?

- ○ A: *Candida albicans*
- ○ B: *Candida glabrata*
- ○ C: *Candida tropicalis*

2. What is the first line systemic treatment for oral candidiasis?

- ○ A: Amoxicillin
- ○ B: Fluconazole
- ○ C: Amphotericin

3. What clinical feature is suggestive of oral lichen planus?

- ○ A: White plaque that can be wiped away
- ○ B: Wickham's striae
- ○ C: Nodular appearance