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Case report: Co-occurrence of oropharyngeal candidiasis and oral lichen planus

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Abstract

Oral candidiasis is a common oral lesion, and oropharyngeal candidiasis represents the extension of a Candida infection into the oropharynx, typically resulting from untreated oral candidiasis. This condition is most frequently observed in immunocompromised individuals, such as those with HIV or those on steroid treatments. However, this case report highlights an instance of oropharyngeal candidiasis occurring alongside the autoimmune inflammatory condition, oral lichen planus—two distinct and entities presenting together.

Keywords: Oropharyngeal candidiasis, lichen planus, prednisolone, triamcinolone acetonide, case report, biopsy

Introduction

Lichen planus is a chronic inflammatory condition that most commonly affects the oral cavity. It can present in various forms, including atrophic, bullous, erosive, reticular, and plaque-like. Erosive lichen planus manifests as painful ulcers and erythematous areas, causing significant discomfort and a burning sensation for patients.[1] The oropharyngeal candidiasis is the development of candida growth in the pharyngeal region involving most commonly the ventricular bands, pharyngoepiglottic fold and posterior pharyngeal wall. These areas are more since they have limited self-cleansing capacity and with complex anatomy for the growth. The superimposition of candidiasis on lichen planus has been extensively explored in the literature. The types are erythematous and pseudomembranous.[2] The occurrence of candidal infections in lichen planus patients is often attributed to the use of corticosteroids for managing LP symptoms. However, an alternative hypothesis suggests that the prolonged presence of candidiasis may disrupt the normal microbial flora of the oral cavity, potentially contributing to the development of lichen planus due to disruption of mucosal barrier.[3] A recent systematic review has found that erosive lichen planus is more commonly associated with candidiasis compared to other forms of lichen planus and healthy individuals.[4] The altered oral environment in oral lichen planus (OLP) creates favorable conditions for Candida species colonization. This fungal colonization can exacerbate the underlying inflammatory process associated with OLP, leading to increased tissue irritation and worsening of symptoms, such as a heightened burning sensation. The interplay between Candida species and the compromised mucosa in OLP may further aggravate the condition, complicating its clinical management.[5,6]

Case report

A 59 years old female patient reported to the Dental OPD with the complaint of burning sensation in the mouth with difficulty in swallowing for the past three months. Patient gives history of burning sensation aggravated on eating spicy foods and relieved at rest. Patients' medical history was noncontributory. Patients' personal history revealed history of mental stress due to personal issues. Patient general examination revealed pallor in conjunctiva and palms of hand revealed signs of anemia. Extraoral examination revealed no abnormalities detected. Intraoral examination of hard tissue revealed edentulous maxilla except in 21,25 and 26. Mandible partially edentulous in relation to 31,32,33, 36, 37, 38, 41, 43, 45, 46,47. Evidence of root stumps in 42. Patient wears removable partial denture in maxilla. On soft tissue examination evidence of depapillation of dorsal surface of tongue and ulcerations in the lateral borders of the tongue on both sides. Evidence of ulcerations, erythematous patches covered with white pseudomembranous slough involving the right and left buccal mucosa. The white patches extend posteriorly up to the posterior palate region. (Fig 1).

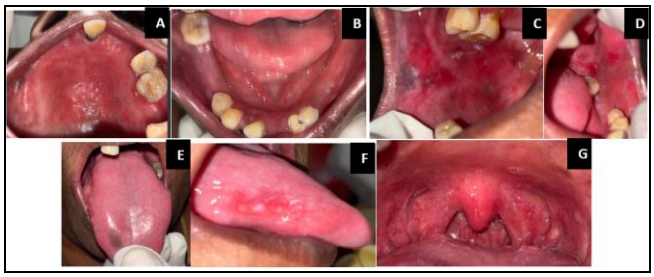

Fig 1: Intraoral Examination revealing Erythematous patches with pseudomembranous slough involving the right and left buccal mucosa, oropharynx region and tongue findings

On palpation tenderness is present and Patient provisionally diagnosed with erosive lichen planus with oropharyngeal candidiasis, anemic stomatitis. Patient advised for routine blood investigations, Serological testing which revealed

HIV is non-reactive, and Hemoglobin level was 9.8mg/dl. The patient further advised for endoscopy, which revealed fungal patches in the aryepiglottic fold and the posterior pharyngeal wall. All other areas, including the pharyngoepiglottic fold, ventricular bands, vocal cords, posterior pharyngeal wall, sub-glottis, vallecula, and epiglottis, appeared normal. (Fig 2)

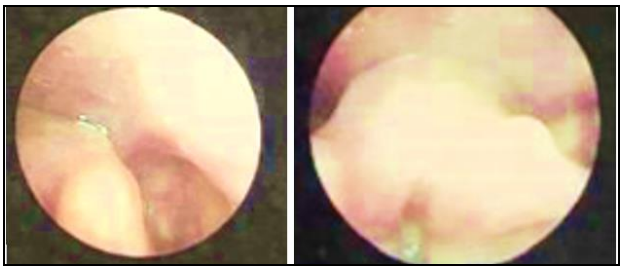

Fig 2: Endoscopic findings

The patient underwent punch biopsy in the right buccal mucosa (Fig 3) for histopathological evaluation. The H&E-stained soft tissue section reveals Ortho keratotic stratified squamous epithelium with areas of atrophy and basal cell degeneration. A subepithelial band of chronic inflammatory cells, predominantly lymphocytes, is observed, along with artefactual separation of the epithelium from the connective tissue. The underlying connective tissue comprises dense collagen fibers and exhibits moderate vascularity. These findings confirm the diagnosis of erosive lichen planus. (Fig 4)

Fig 3: Punch Biopsy in relation to Right buccal mucosa

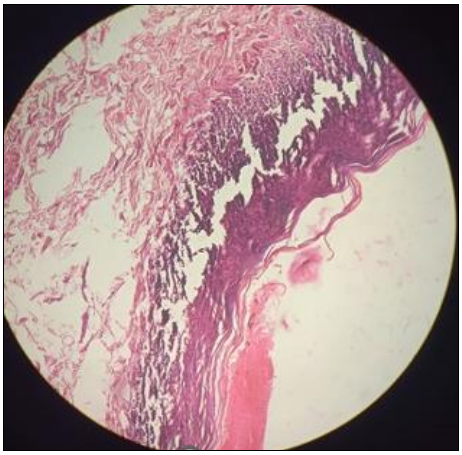

Fig 4: Histopathological findings of Lichen planus

Patient then managed with topical Clotrimazole 1% advised to apply thrice daily for three days and Tablet Fluconazole 100mg once daily for five days. After 5 days, patient advised to apply topical Triamcinolone acetonide for one week. Patient reviewed back after one-week, complete remission of candidiasis was evident and partial remission of oral ulcers. Patient advised to continue the triamcinolone acetonide for further two weeks, to avoid using the denture for two weeks and multivitamin tablets were advised.

Discussion

Oropharyngeal candidiasis is most commonly observed in denture wearers, and its association with oral lichen planus (OLP) is hypothesized to involve an inflammatory response triggered by the acrylic material of the denture. In this case report, the patient is medically fit and not on any immunosuppressants but has been wearing a maxillary denture for three years. This occurrence of lesions was also superimposed with the presence of candidiasis. This occurrence of both candidiasis and OLP is a common clinical scenario. However, identifying the underlying aetiology and formulating an appropriate treatment plan are crucial for achieving optimal outcomes.

The patient was initially managed with antifungal therapy, followed by corticosteroid treatment. This stepwise approach was adopted to prevent drug interactions and to ensure the maintenance of mucosal integrity. *C. albicans* can penetrate epithelial cell barriers through a paracellular route by secreting lytic enzymes, particularly members of the secreted aspartyl proteinase (SAP) family. These proteases degrade E-cadherin and other junctional proteins between epithelial cells, allowing the organism to infiltrate the spaces between them. 7

The association between candidiasis and oral lichen planus (OLP) remains a subject of debate in the literature, with ongoing genotypic studies aimed at exploring this relationship. Earlier research identified the albicans group as a phenotype associated with OLP. However, these findings are insufficient to confirm whether *Candida albicans* acts as an antigen for OLP, serves as a symbiotic organism, or functions as a causative factor.8,9

To address these uncertainties, genotyping analyses have been initiated to retrieve detailed DNA profiles and distinguish genetic variants and infection stages. A study conducted by Hong He et al. in 2020 investigated the relationship between OLP and the genotypes of *C. albicans* using BLAST, UIV Band, and Vector NTI Suite Sequence Analysis software. The results indicated that candidiasis occurs as endogenous infection rather than exogenous infection.6

The most promising treatment for lichen planus is corticosteroids however the occurence of candidiasis in these cases due to application of topical steroids varies from case to case. The topical corticosteroids are the most effective treatment option for OLP according to the recent systematic review. 10

The association between erosive OLP and candidiasis is well-established, likely due to the increased susceptibility of the eroded oral mucosa to opportunistic Candida infections. 11,12

The treatment for OLP is challenging since the rate of occurrence of candidiasis is more in patients. To overcome this antioxidant therapy is highly recommended for the treatment of oral lichen planus. Lycopene, curcumin, raspberry leaf extract, selenium and multivitamins are need to be studied in depth for the effective treatment for OLP 13

Conclusion

This case report sheds light on the interplay between the etiology of oral lichen planus (OLP) and superimposed candidiasis, as well as the various treatment strategies for managing these conditions. It highlights the complex relationship between erosive OLP and opportunistic Candida infections, stressing the necessity for a tailored and multifaceted treatment plan to achieve optimal outcomes.

The management of such cases requires a stepwise approach, starting with the eradication of candidiasis using antifungal agents to restore microbial balance and reduce fungal load. This is followed by corticosteroid therapy to control the chronic inflammation associated with OLP, ensuring minimal drug interactions and preserving mucosal integrity.

Moreover, addressing predisposing factors is crucial in the holistic management of the condition. Factors such as prolonged denture use, which can harbor Candida and perpetuate inflammation, and systemic health conditions like anemia, which may impair mucosal healing and exacerbate symptoms, need to be carefully evaluated and managed.

References

1. Boorghani M, Gholizadeh N, Taghavi Zenouz A, Vatankhah M, Mehdipour M. Oral lichen planus: clinical features, etiology, treatment and management; a review of literature. J Dent Res Dent Clin Dent Prospects,2010:4(1):3-9. doi: 10.5681/joddd.2010.002.
2. Epstein JB, Polsky B. Oropharyngeal candidiasis: a review of its clinical spectrum and current therapies. Clinical Therapeutics,1998:20(1):40–57. doi:10.1016/s0149-2918(98)80033-7
3. Rai LS, van Wijlick L, Chauvel M, d'Enfert C, Legrand M, Bachellier-Bassi S. Overexpression approaches to advance understanding of Candida albicans. Mol Microbiol,2022:117(3):589-599. doi: 10.1111/mmi.14818.
4. Ma D, Yang X, Wang M. Association between oral lichen planus and Candida albicans infection: a systematic review and meta-analysis. Am J Transl Res,2024:16(8):3462-3471. doi: 10.62347/WCDS1944.
5. Molkenthin F, Hertel M, Neumann K, Schmidt-Westhausen AM. Factors influencing the presence of Candida dubliniensis and other non-albicans species in patients with oral lichen planus: a retrospective observational study. Clin Oral Investig,2022:26(1):333-342. doi: 10.1007/s00784-021-04004-5.
6. He H, Wang Y, Fan Y, Li C, Han J. Hypha essential genes in Candida albicans pathogenesis of oral lichen planus: an in-vitro study. BMC Oral Health,2021:21:614. doi: 10.1186/s12903-021-01975-5.
7. Swidergall M, Filler SG. Oropharyngeal candidiasis: fungal invasion and epithelial cell responses. PLoS pathogens,2017:13(1):e1006056.
8. Xiang Y, Zhu X, Huang Q, Zheng J, Fu W. Real-time monitoring of mycobacterium genomic DNA with target-primed rolling circle amplification by a au nanoparticle-embedded SPR biosensor. Biosens Bioelectron,2015:66:512–9.
9. Bokor-Bratic M, Cankovic M, Dragnic N. Unstimulated whole salivary flow rate and anxiolytics intake are independently associated with oral Candida infection in patients with oral lichen planus. Eur J Oral Sci,2013:121:427–33.
10. Andabak-Rogulj A, Vindiš E, Aleksijević LH, Škrinjar I, Juras DV, Aščić A, Brzak BL. Different Treatment Modalities of Oral Lichen Planus—A Narrative Review. *Dentistry Journal*,2023:11(1):26. https://doi.org/10.3390/dj11010026
11. Ma D, Yang X, Wang M. Association between oral lichen planus and Candida albicans infection: a systematic review and meta-analysis. Am J Transl Res,2024:16(8):3462-3471. doi: 10.62347/WCDS1944.
12. Rodriguez-Archilla A, Fernandez-Torralbo S. *Candida* species colonization in oral lichen planus: A meta-analysis. Int J Health Sci (Qassim),2022:16(4):58-63.
13. Saraswathi Gopal K, Srividhya S, Mahesh Kumar P, SowmyaHemanthakumar NC. Antioxidants in Oral Mucosal Diseases: A Scoping Remedy. Annals of the Romanian Society for Cell Biology,2021:25(6):18549-56.