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Case Report

Verrucous Leukoplakia: A Case Report of Persistent Oral Lesion with Malignant Potential

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ABSTRACT:
Verrucous leukoplakia is a rare and unique clinical entity characterized by its progressive and recurrent nature with a high potential for malignant transformation. This report details the case of a 44-year-old male presenting with persistent, thickened, white plaques on the lateral surface of the tongue. Clinical examination revealed well-demarcated, non-scrapable plaques with a verrucous surface. Biopsy confirmed the diagnosis of verrucous hyperplasia with very mild evidence of dysplasia.

Keywords: Verrucous Leukoplakia, Verrucous Hyperplasia, Proliferative Verrucous Leukoplakia, Oral Lesions, Malignant Transformation, Case Report

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INTRODUCTION

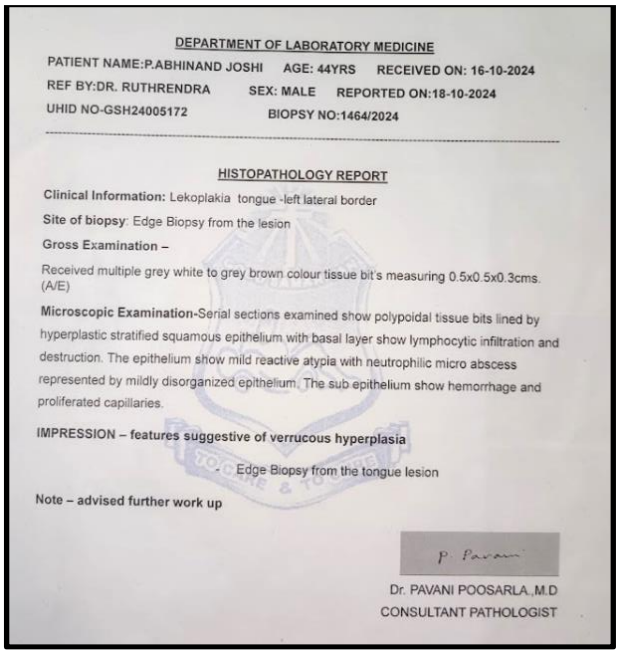
Verrucous leukoplakia is a distinctive and challenging variant of leukoplakia, characterized by its persistent and progressive nature. Unlike homogeneous leukoplakia, it presents as an exophytic, warty, or corrugated lesion, typically affecting the buccal mucosa, gingiva, or tongue. This condition is uncommon but notable for its significant risk of malignant transformation, with studies reporting progression to verrucous carcinoma or squamous cell carcinoma in a considerable number of cases. The etiology of verrucous leukoplakia remains multifactorial. While tobacco use—especially smokeless tobacco—is a major risk factor, other contributors include chronic irritation, alcohol consumption, and possible associations with human papillomavirus (HPV) infection. It predominantly affects middle-aged to elderly individuals, with a slight female predilection. Clinically, the lesion's verrucous appearance and resistance to standard therapies distinguish it from other oral white lesions. Histopathologically, it demonstrates hyperkeratosis, acanthosis, and minimal cellular atypia, emphasizing the importance of biopsy for diagnosis. Management includes eliminating predisposing factors, excisional surgery, or laser ablation, yet recurrence and progression remain significant concerns. Early recognition and intervention are critical to preventing malignant transformation. Long-term follow-up is essential due to its persistent and progressive nature, highlighting the need for heightened clinical vigilance in managing this high-risk lesion.

CASE REPORT

A 44-year-old male patient came to the Department of Oral Medicine and Radiology, St. Joseph Dental College, Duggirala, Eluru, with a chief complaint of whitish discoloration of his tongue since 1 year. Patient gives the history of pain, which is continuous, gradual, in onset, dull throbbing type, aggravates on chewing and doesn't relieve on medication which is non radiating. Also gives history of burning sensation

and gives VAS of 6. The patient is under medication for Diabetes since 2 years. The past dental history of the patient was non-contributory. The patient gave the history of deleterious habits of having a habit of chewing Khaini 4-5 packets per day since 1 years and consumption of alcohol occasionally since 3years. On Intra-oral inspection, a whitish patch of size approximately 3 x 3 cm seen involving the left lateral surface of the tongue extending Anterio-Posteriorly from the tip of the tongue to the posterior surface of the tongue and Superio-Inferiorly involving lateral surface of the tongue and erythematous is evident. An ulcer of size approximately 1x1cm seen involving lateral surface of the tongue presents with yellowish slough with irregular margins and erythematous hallo is evident. On palpation, all the Inspectory findings are confirmed, and the lesion is tender, soft to firm in consistency, rough in texture and non-scrapable. Base of the ulcer is non indurated, edges are sloppy. Based on above mentioned clinical features in the above case the provisional diagnosis is given as Verrucous Leukoplakia with a differential diagnosis of Squamous papilloma, Verrucous carcinoma, Frictional Keratosis, Homogenous Leukoplakia, Verrucous Carcinoma, Squamous Cell Carcinoma, and Chronic Hyperplastic Candidiasis. The complete hemogram reports were within normal limits. The incisional biopsy specimen was taken from the lesion area and was sent to histo-pathological analysis. The 10X and 40X microscopic views revealed polypoidal tissue bits lined by hyperplastic stratified squamous epithelium with basal layer shows lymphocytic infiltration and destruction. The epithelium shows mild reactive atypia with neutrophilic micro abscess represented by mildly diagnosed epithelium. The sub epithelium shows haemorrhage and proliferated capillaries. Based upon all the clinical and histopathological features, Verrucous hyperplasia was given as final diagnosis. The patient has been instructed to quit the habit of khaini consumption and prescribed antioxidants – lycopene 8 mg once daily, multivitamin tablets once daily, isotretinoin 10mg capsules twice daily for 15 days. Follow up for every 15 days has been instructed to the patient.

Figures showing lesion present in the lateral surface of the tongue



DEPARTMENT OF LABORATORY MEDICINE

PATIENT NAME:P.ABHINAND JOSHI AGE: 44YRS RECEIVED ON: 16-10-2024
REF BY:DR. RUTHRENDRA SEX: MALE REPORTED ON:18-10-2024
UHID NO-GSH24005172 BIOPSY NO:1464/2024

HISTOPATHOLOGY REPORT

Clinical Information: Lekoplakia tongue -left lateral border

Site of biopsy: Edge Biopsy from the lesion

Gross Examination –

Received multiple grey white to grey brown colour tissue bit's measuring 0.5x0.5x0.3cms. (A/E)

Microscopic Examination-Serial sections examined show polypoidal tissue bits lined by hyperplastic stratified squamous epithelium with basal layer show lymphocytic infiltration and destruction. The epithelium show mild reactive atypia with neutrophilic micro abscess represented by mildly disorganized epithelium. The sub epithelium show hemorrhage and proliferated capillaries.

IMPRESSION – features suggestive of verrucous hyperplasia

- Edge Biopsy from the tongue lesion

Note – advised further work up

P. Pavani

Dr. PAVANI POOSARLA.,M.D
CONSULTANT PATHOLOGIST

Figure showing histopathological report

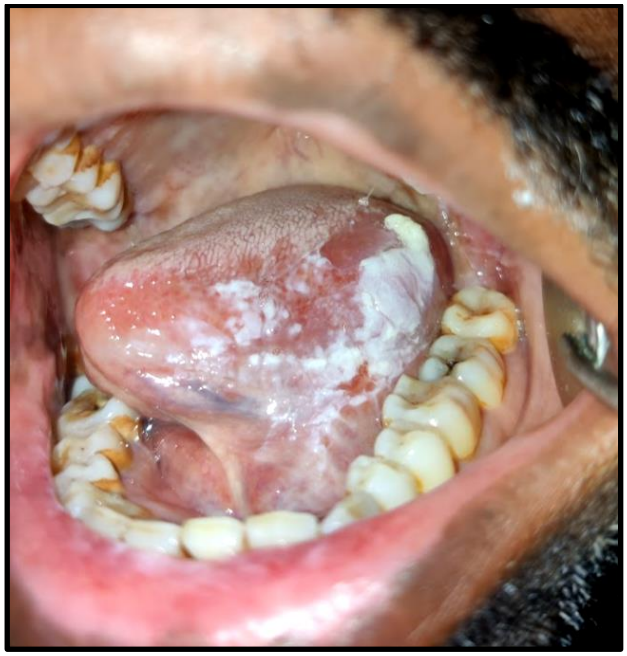


Figure showing lesion after 15 days of follow up

DISCUSSION

Verrucous leukoplakia (VL) is a rare, yet significant subtype of oral leukoplakia characterized by its distinct clinical and histopathological features. It is typically associated with a progressive course, transitioning from hyperkeratotic plaques to an exophytic or verrucous growth pattern, often resistant to conventional treatment. This condition has been linked to high-risk factors such as chronic tobacco use, betel quid chewing, and possibly human papillomavirus (HPV) infection. The etiology remains multifactorial, involving a complex interplay of carcinogenic irritants, genetic predisposition, and immune modulation.

Verrucous hyperplasia is a distinct histopathological entity characterized by a thickened epithelium with a verrucous or wart-like surface architecture. It is often considered a precursor to verrucous carcinoma, a well-differentiated form of squamous cell carcinoma. Verrucous hyperplasia primarily affects the oral mucosa and is associated with chronic irritation, tobacco use (including smokeless forms), and human papillomavirus (HPV) infection. Clinically, it appears as a whitish, thickened lesion with a corrugated or granular surface, often indistinguishable from other hyperkeratotic conditions. While not inherently malignant, its potential for transformation underscores the importance of biopsy and histological examination for accurate diagnosis and management. The diagnosis of VL is challenging due to its overlapping features with other oral potentially malignant disorders (OPMDs) and its dynamic progression. Initial presentations are often misdiagnosed as benign keratoses. However, the hallmark feature is its multifocal involvement and relentless spread, leading to the development of thickened, wart-like lesions. Histopathological examination reveals hyperkeratosis, epithelial acanthosis, and varying degrees of dysplasia. Importantly, VL is associated with a higher risk of malignant transformation into verrucous carcinoma or squamous cell carcinoma compared to conventional leukoplakia, with reported rates ranging between 30% and 70%. Management of VL is a clinical challenge, necessitating a multidisciplinary approach. Conservative treatments such as cessation of tobacco use and excision often yield unsatisfactory outcomes due to recurrence. Advanced lesions may require extensive surgical resection or laser ablation, with adjunctive therapies including topical chemo preventive agents. Despite intervention, recurrence rates remain high, emphasizing the need for vigilant, long-term follow-up. This case underscores the critical importance of early detection and differentiation of VL from other OPMDs. Advanced imaging techniques, such as autofluorescence and optical coherence tomography, alongside molecular diagnostics, are emerging as valuable tools for enhancing diagnostic accuracy. The aggressive nature and malignant potential of VL warrant heightened awareness among clinicians to ensure timely intervention and comprehensive patient education on risk modification strategies. Further studies are essential to elucidate the pathogenesis of VL and optimize management protocols to reduce the burden of malignant transformation in affected individuals. The sole histological method for differentiating between VC and Verrucous Hyperplasia (VH) lesions is to compare the lesion's epithelium's rete ridge level to that of the nearby normal epithelium.

Furthermore, verrucous leukoplakia and VH instances might be mistaken for one another. Therefore, to guarantee an accurate diagnosis, samples of verrucous lesions should include the nearby normal epithelium. Patients with VH should

get treatment comparable to that for VC patients because of the possibility of malignant transformation.

CONCLUSION

Verrucous leukoplakia (VL) represents a unique and aggressive variant of oral leukoplakia with significant clinical implications due to its high risk of malignant transformation. This case highlights the importance of early and accurate diagnosis, facilitated by a combination of clinical vigilance, histopathological evaluation, and emerging diagnostic modalities. The recurrent nature and multifocal presentation of VL necessitate a comprehensive, multidisciplinary approach to management, including risk factor modification, surgical intervention, and long-term follow-up. Clinicians must remain cognizant of the challenges associated with VL, ensuring proactive monitoring and tailored treatment strategies to mitigate its progression and transformation into invasive malignancy. Continued research into its etiology, progression, and therapeutic options is essential for improving patient outcomes and reducing the overall burden of this potentially life-threatening condition. Verrucous hyperplasia is a benign but potentially precancerous lesion requiring early identification and monitoring. Accurate diagnosis through biopsy and histopathology is essential to differentiate it from similar conditions. Timely intervention and elimination of risk factors, such as tobacco use, are crucial to prevent progression to verrucous carcinoma or other malignancies.

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