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Short communication: Vizilite®- A Non-Invasive Oral Cancer Screening Tool Using Chemiluminescent Technology; Does it's Use Make Sense?

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ABSTRACT

Background: *Early detection of oral cancer is crucial in improving survival rates. To improve early detection, the use of a dilute acetic acid rinse and observation under a chemiluminescent light (ViziLite; Zila Pharmaceuticals, Phoenix, AZ) has been recommended. Several screening techniques based on light interaction with tissue have been described to aid clinicians in the detection of early oral cancerous lesions. One of the most studied techniques is chemiluminescence. This method has been used in different studies but always by Oral Medicine specialists.*

Conclusion: *Vizilite is a non-invasive screening technology widely used and best suited for clinicians with experiences, training, and proven real-time results, It is one of the modern device for oral cancer screening and consciousness, which has definite diagnostic value but limitations should be overcome by more confirmatory, sensitive, and specific tests.*

Keywords: Vizilite®, Chemiluminescence, Screening Method, and Oral cancer.

Article Information

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INTRODUCTION

ViziLite® test kit is classified by FDA as a dental operating light and regulated as a Class II (moderate risk) device, that has been cleared as an adjunct to visual examination of the oral cavity in November 2001 and received FDA 510(k) premarket approval on January 31, 2005, for testing people 'at increased risk' of oral cancer.

ViziLite® TBlue Annual Oral cancer screening System helps oral healthcare professionals identify, evaluate, monitor and mark abnormal oral cell lesions suspicious for pathology. The systems also detects and differentiates precancerous and cancerous cells that may be difficult to see during regular visual exams. Dentists can ensure the survival rate of the patients suffering from oral and oropharyngeal cancers by risk assessment with the avail of the simple oral cancer screening light examination. It is a chemiluminescent test, which is a single use product (three component swab system) consisting of an acetic acid rinse, retractor, and light stick. The patient rinses with the acetic acid solution and expectorates. The ViziLite fluorescent light stick (430, 540 and 580 nm) is activated and inserted into the hollow end of retractor. After dimming the lights, the provider examines the oral cavity using the ViziLite device. The light is purposed to impart a blue hue to normal tissue, while lesion counterparts (hyperkeratinized or dysplastic tissue) take on an 'acetowhite' appearance, thus becoming clinically discernable.

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VizLite TBlue offers some advantages:

1. Quick and less technique sensitive system that incorporates seamlessly into the standard of visual examination- scanning takes couple of minutes only to finish
2. Because of the small size it improves the accessibility and focus precisely the light inside the oral cavity even in the small mouth openings.
3. Disposable technology minimizes the chance of cross contamination and facilitate the disinfection.
4. Clinical study has proven the system is least prone to give False negative outcomes which supports the evidence of successful identification of precancerous or cancerous lesion with relevant risk evaluation.
5. It significantly reduces the number of False positive lesions identified during standard visual examinations and thus limits the number of biopsies may have normally be performed.

But recently, there are some shortcomings found in the system like:

1. Low specificity for dysplastic changes
2. Unable to detect some red lesions
3. Acetic acid pre-rinse induces hypersalivation which interferes with mucosal surface reflectance.
4. No permanent record preserved unless photographed.
5. Inability to objectively measure the visualization results.
6. Provides adjunct information only about the horizental extension of the lesion
7. Malignant behaviour can't be assessed.

CONCLUSION

Vizilite is a non-invasive screening technology widely used and best suited for clinicians with experiences, training and proven real time results. But locking their ability to discriminate the high risk lesions, high cost, poor specificity to red lesions and problems in assessment of malignant behavior of the lesions brings attention to its authenticity. It is one of the modern device for oral cancer screening and consciousness, which has definite diagnostic value but limitations should be overcome by more confirmatory, sensitive, and specific tests.

REFERENCES

- **Antonio** Carrera Torres, Ángel Martínez-Sahuquillo Márquez, Javier Fernández Farhall, María José Cobos Fuentes and Isabel Gallardo Castillo. Efficacy of Chemiluminescence (ViziLite™) as a Screening Method in the Detection of Clinically Suspicious Oral Cancerous and Precancerous Lesions. *Journal of Analytical Oncology*, 2013, *2*, 176-181.
- **Rashid** A, Warnakulasuriya S. The use of light-based (optical) detection systems as adjuncts in the detection of oral cancer and oral potentially malignant disorders: a systematic review. *J Oral Pathol Med*. 2015 May; 44(5):307-28.
- **Shashidara,** Raju; Sreeshyla, Huchanahalli Sheshanna[1,]; Sudheendra, Udyavara Sridhara. A diagnostic adjunct in oral precancer and cancer: A review. *Journal of Cancer Research and Therapeutics* 10(3):p 487-491, Jul–Sep 2014.*DOI:* 10.4103/0973,1482.138215.
- **Walsh** T, Macey R, Kerr AR, et al. Diagnostic tests for oral cancer and potentially malignant disorders in patients presenting with clinically evident lesions. *Cochrane Database Syst* Rev. 2021 Jul 20;7(7): CD010276.

