

# The Application of Vizilite in Oral Cancer

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## ABSTRACT

This article depicts the various applications of Vizilite plus in oral cancer. The oral cavity demonstrates a variety of red and white, pigmented and vesiculo-bullous lesions. Oral cancer still happens to carry the highest mortality worldwide, especially in India. In India, the prime focus is on the downstreaming of oral cancer from

an advanced stage to an early diseased state. The techniques that are promoted to facilitate an earlier detection and diagnosis of an oral malignancy include Toluidine blue, ViziLite Plus with TBlue, ViziLite, Microlux DL, Orascope DK, VEL scope, Oral CDx and brush biopsy.

**Key Words:** Oral cancer, Toluidine blue, VELscope, OralCDx, Brush biopsy, Vizilite

## INTRODUCTION

In developing countries such as India, there is a high prevalence of oral cancer and of other Pre-Malignant and malignant lesions of the oral cavity. Prevalence rate of oral cancer worldwide is 300,000 annually and in India it accounts for about 20 per 100,000 population. The universal acceptable diagnostic aid for the oral mucosal lesions that are suggestive of a premalignancy and a malignancy remains a tissue biopsy and a histopathological examination. Diagnosing the oral cancers earlier, even at stage II, not only improves the lives of the patients but it also helps in easing out the financial and emotional healthcare bind which the country [1] faces. Various new techniques have evolved to supplement the clinical examination and to improve the diagnosis of premalignant and early malignant lesions. This article has examined the role of the screening tools in oral cancer and it has evaluated the literature regarding the currently available diagnostic tests or techniques that have been found to be supportive in aiding in the detection and diagnosis of cancerous and precancerous lesions. Recently, a tissue reflectance-based examination has been adapted for use in the oral cavity and it is being currently marketed under the name, ViziLite.

## REVIEW

Oral cancer is a curable disease when it is detected early. A new technology named Vizilite has been developed. Vizilite is stored between 150 and 300 (590 - 860 F). Vizilite uses a technology which has been found to be effective in detecting the soft tissue abnormalities in other parts of the body. A Vizilite examination is essential for the persons who are more susceptible for oral cancer. Vizilite hopes to make early detection of oral cancer in patients who do not show symptoms. Vizilite, in combination with a regular visual examination, provides a comprehensive oral screening procedure for the patients who are at a high risk for oral cancers. Vizilite is a painless, effective and a fast and a life saving procedure. Yes, detecting these cases will result in better quality of life and also lower the death rate. The Vizilite kit comprises of a

1% acetic acid solution, a capsule (which emits light), a retractor and the manufacturer's instructions [2]. For patients at high risk for oral cancers, the cost per life saved would be lower, but would probably still be unacceptably high. In addition, false-positive tests would lead to unnecessary expense and patient anxiety.

The capsule is formed by an outer shell of flexible plastic and an inner vial of fragile glass. To activate it, the capsule is bent for breaking the glass vial, so that the chemical products react with them and produce a bluish-white light with a wave length of 430-580 nm, that lasts for around 10 min. Sensitivity and Specificity is about 77.3% and 27.8% respectively. In short high sensitivity and low specificity. The patient is asked to do a one minute mouth-wash with the acetic acid solution for drying the oral mucosa and for removing the glycoprotein barrier. The intensity of the focussed light is dimmed and a diffuse bluish-white chemiluminescent light is applied, which shows the normal cells that absorb the light and they are depicted in a bluish colour. The abnormal cells reflect the light back with a high nucleus-cytoplasm ratio, and the epithelium with excess keratinization, hyperparakeratinization and a predominant inflammatory infiltrate that appears acetowhite, with more brightness and distinguished borders [3-6].

ViziLite, as has been described above, may be used with or without the ViziLite Plus accessory eyewear, depending on the operator environment. The ViziLite Plus accessory eyewear consists of lenses that filter the ambient light outside the wavelength transmission range of the chemiluminescent light. Any lesion which is seen with ViziLite may show the pathology, and clinical implications should always prevail for deciding the further analysis and management of these pre-malignant and malignant lesions.

However, according to a clinical study in screening of oral cancer, use of vizilite deemed clinically innocuous, proved to be ineffective in detecting dysplasia or cancer [7]. Some investigators have found that vizilite enhances visual lesions to about 60%, identifying all the lesions which was previously detected by standard light, but with no additional lesions [8].

## CONCLUSION

At present, molecular and genetic analyses are not routine procedures for oral lesions in which biopsies are performed regularly. The main contribution of autofluorescence, confocal reflectance imaging and fluorescence imaging is to highlight the oral lesions and to assist the physicians in better locating the surgical margins. The future is promising for the further development and evolution of oral-cancer diagnostic aids for enhancing the quality of the patient care which is provided by all the clinicians. The challenge of controlling oral cancer in developing countries like India is huge, but the impact will be great and to achieve this, we require joint efforts, collaborations and meticulous planning to achieve the desired results. As newer technologies and techniques are coming up, an imaging modality may reduce the need for a biopsy, it may define the surgical margins, and it may provide a direct evaluation of the effectiveness of oral cancer. In spite of vizilite proving to be a useful tool in detecting oral cancer at an early stage, it is still not enough to make the test worthwhile [9].

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