**ABSTRACT**

The usefulness of the transepithelial brush biopsy was evaluated for choosing treatment pathways for patients with suspicious areas in the mouth who had previously undergone resection surgery from oral cavity cancers. Its benefit was evaluated for minimizing additional biopsy and disfigurement by providing information to assist in a more accurate treatment decision that could prevent unnecessary surgical biopsy.

**METHODS AND MATERIALS**

Over the past 2 years, brush biopsies were performed on patients with a past history of oral cancer who presented with suspicious tissue changes. Transepithelial monitoring for reoccurrence of oral cavity cancer was performed on patients with a past history of oral cancer who presented with a suspicious lesion during periodic reevaluation.

The examining doctor performed the brush biopsy by placing the brush bristles on the lesion, rotating until a bleb red or pinpoint bleeding was obtained. The specimen was transferred to a slide, and a fixative was applied, then sent with a completed test requisition form to OralCDx Laboratories. In the laboratory, the slide was stained by a histological technician, and then scanned by a digital analyzer using an algorithm for detection of abnormal cells.

The pathological results were reviewed in conjunction with previously obtained clinical inspection and repeated biopsy that was evaluated by the doctor to rule out the presence of dysplasia from the submitted tissue specimen.

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The outcomes and clinical treatment decisions were correlated with the brush biopsy findings to understand how this biopsy’s information plays a role in treatment pathways.

**RESULTS**

In review of 22 cases, evaluation of brush biopsy specimens revealed abnormal or dysplastic cells in 27% of cases. These patients were either scheduled for surgical biopsy or were provided definitive treatment without undergoing a surgical biopsy.

In 72% of cases, abnormal or dysplastic cells were not identified; these patients were placed on a periodic reevaluation protocol.

**CONCLUSIONS**

Transepithelial brush biopsy can provide information useful for monitoring patients with past history of oral cancer who present with suspicious tissue changes.

Findings from transepithelial brush biopsy can be utilized in some cases to place a patient into definitive treatment or on an observation schedule, sparing unnecessary surgical intervention.

The high sensitivity of the transepithelial brush biopsy allows it to be utilized to rule out dysplastic or cancerous change in abnormally appearing scarred tissue thus minimizing the situations where additional resection and disfigurement may be required. Its high specificity also allows placing the patient into definitive treatment where the results from the brush test indicated presence of dysplasia or abnormal cells, as this information was enough evidence to make decisions to move forward with treatment of the lesion.