

Brush biopsy sampling of oral lesions

Christopher Naugler MD MSc CCFP

Oral lesions are commonly encountered in family practice and can present a diagnostic dilemma. These patients require microscopic evaluation of the lesion to rule out a diagnosis of squamous cell carcinoma. As an excisional biopsy is often impractical in an office setting, many family physicians refer these patients to dentists or to ear, nose, and throat surgeons for a biopsy. Referring all of these cases for an initial biopsy, however, can result in a delay in diagnosis and increased costs for the patient and the health care system.

Technique

While considering options for office-based biopsies for these patients, I came across a technique called *brush biopsy* in the dental literature.¹ I had difficulty, however, locating a description of the technique as applicable to a family practice setting. After discussing the technique with a dental colleague, I began using the method I am about to describe. I have performed this biopsy technique several dozen times in a clinical setting. It has proven to be efficient and easy to perform and it provides cytologists adequate-quality specimens for interpretation. It also has the added benefits of being minimally invasive, acceptable to patients, and presents a low risk for complications.

This technique employs materials used for Papanicolaou tests, which are generally available in any family practice office. I use a cervical cytology brush for taking the sample. I keep a separate supply of these brushes in a clean area away from the remainder of the Pap test supplies. Because this technique is noninvasive, no preparation of the oral mucosa is necessary. The operator, however, must employ standard universal precautions, including hand washing and the use of gloves. The patient's name is written in pencil on a glass slide and kept in an easily accessible location close to the patient. The cytology brush is lightly applied to the oral lesion with just enough pressure so that the handle of the brush bows slightly.

Next, the cytology brush is rotated 360° on the surface of the lesion. It is placed at one edge of a clean glass slide and again rolled 360° over its surface. The slide is immediately sprayed with a cytofixative spray and allowed to dry. (A delay in the application of the cytofixative spray, even by a few seconds, will result in degradation of sample quality, and could provide a lower diagnostic yield.) Ensure that the specimen is labeled as a "brush biopsy of oral lesion." If cancer is suspected clinically, ask your laboratory to expedite the report.

Applications

I have found 2 main applications of this technique. The first is for cases of oral lesions considered to be clinically low risk. In these instances, I will perform a brush biopsy; if the sample is of adequate quality for interpretation and has negative results, I will observe the lesion in my office with repeat sampling if it persists.

The second application is for cases of obviously suspicious lesions, where I will perform a brush biopsy and refer the patient to an ear, nose, and throat surgeon at the same time. Positive cytology results will often be available for surgeons at the time of their initial consultation with patients, which could considerably speed up the process of definitive surgical resection.

The biggest pitfall with this technique is the risk of false-negative results if the sample is too superficial. Dysplastic (precancerous) lesions might show normal cytology results in the upper layers of the oral mucosa; therefore, a sufficient number of cells must be removed to reach the deeper cell layers of the lesion. It has been suggested that a sufficient sample should cause pinpoint bleeding at the site of the lesion.²

False-negative test results using brush biopsies have been reported,³ so a negative pathology result must be interpreted in light of the clinical pretest probability of cancer. Highly suspicious lesions with negative brush biopsy results should be repeated, or the patient should be referred for an excisional biopsy.

Finally, exercise care in patients using blood thinners, where the risk of bleeding must be balanced with the risk of stopping the anticoagulants before the procedure takes place. ❁

Dr Christopher Naugler is a family physician who is currently completing a residency training program in general pathology at Dalhousie University in Halifax.

Competing interests

None declared

References

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