The dilemma of microinvasion

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Abstract

Introduction

Microinvasive oral squamous cell carcinoma is an early stage malignant tumour showing invasion of the epithelial cells confined to the superficial lamina propria without invasion of the deeper structures and are diagnosed mainly based on certain pre-defined histopathological criteria. Such lesions are generally a matter of debate in respect to the clinical presentation, metastatic ability, therapeutic intervention and prognosis. This short communication attempts to compile the available information regarding microinvasive oral squamous cell carcinoma and highlight the importance of efficient communication to the clinician regarding the nature of the lesion for appropriate management.

Short communication

Most of the oral carcinomas arise through malignant transformation of certain precursor lesions collectively known as potentially malignant disorders. Grading systems of OSCC help in proper treatment planning and evaluating prognosis of these lesions. However the diagnosis of microinvasive oral squamous cell carcinoma poses therapeutic challenges due to inadequate knowledge regarding its behaviour and prognosis and hence further documentation of these lesions is necessary for their better understanding.

Conclusion

Microinvasive oral squamous cell carcinoma is not well represented in the grading system of oral cancer much like the microinvasive tumors of other sites. This leads to difficulty in treatment planning and prognostic assessment. Thus adequate representation of this entity through proper classification system is necessary.

Introduction

Potentially malignant disorders such as leukoplakia and oral squamous cell carcinoma are common epithelial lesions seen in the South Asian countries caused principally due to the use of smokeless tobacco. Histopathological grading of epithelial dysplasia is significant to assess the risk of malignant transformation of these potentially malignant disorders. Dysplastic lesions confined to the epithelium are graded based on the extent of involvement ranging from mild dysplasia to carcinoma in situ. Any form of invasion of dysplastic cells into the underlying stroma through a breach in the basement membrane constitutes malignancy/carcinoma.

Oral squamous cell carcinoma (OSCC) has pre-defined criteria for histopathological grading that have potential therapeutic and prognostic implications. The microscopic features help in appropriate grading of OSCC into well, moderate and poorly differentiated lesions which are well understood by clinicians and pathologists alike.

One aspect of squamous cell carcinoma that requires consideration is microinvasive squamous cell carcinoma which is an early stage relatively ‘thin’ tumour without invasion of deep tissues.¹ There is no clarity on defining microinvasive oral squamous cell carcinoma although classification systems do exist for similar lesions occurring elsewhere, viz. microinvasion in cervical cancer. For an early invasive lesion to be categorized as microinvasion, the tumour should be confined to papillary lamina propria as defined by the depth of rete processes.² The depth generally varies from 0.5 to 2mm and must be measured from the basement membrane of the adjacent non-neoplastic surface epithelium because of greater variations in epithelial thickness.³ The invasion is further defined as one with an irregular infiltrative border often accompanied by a reactive desmoplasia and not by the pushing type expansion of hyperplastic epithelium.⁴

A better understanding of the various aspects of this terminology is thus mandatory. The aim of this paper is to stress on the importance of identifying microinvasive oral squamous cell carcinoma as a distinct entity for appropriate communication to the clinician regarding its nature, behaviour and treatment planning.

Short communication

Classification of microinvasive cervical carcinoma was done based on the depth and the stromal invasion of the tumour cells that have therapeutic and prognostic significance. A similar classification system could be adopted for microinvasive oral squamous cell carcinoma. The purpose of defining microinvasive OSCC is to identify groups of lesions with minimal risk for lymph node metastases and recurrence and thus can be treated conservatively. Such a diagnosis can help the clinician perform appropriate treatment and avoid the morbidity associated with a more radical approach.

However a classification system for microinvasive OSCC is difficult owing to the limited literature data, the timing of clinical presentation, the difference in the keratinization pattern at various sites in the oral cavity and inconsistencies in the use of the term. Although an isolated study revealed that these lesions presented more frequently as patches, plaques or erosion than as ulcers or verrucous lesions,¹ further retrospective studies are necessary to understand the definite clinical presentations of

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microinvasive oral squamous cell carcinomas.

The occurrence of microinvasion is purely a histopathological diagnosis. The hallmark is the presence of dense inflammatory infiltrate which can be suggestive of an invasive situation. Differences in diagnosis may arise due to the invasive component being very small and remaining undetected, or the inflammation itself masking the basement membrane integrity.

Histochemical procedures, such as the use of PAS stain, help in identifying the basement membrane more vividly, and also the immunohistochemical application of pancytokeratin markers may help in the identification of keratinocytes in the stroma. Also, serial sections must be made to examine the entire tissue, and a diagnosis should not be given on small, tangentially cut biopsy specimens.

A repeat biopsy must be performed in case the diagnosis cannot be given conclusively; and can be reported as lacking unequivocal evidence of invasion in case of severe dysplasia. An additional comment must be made in the histopathological report on the nature of the lesion as well as the prognosis, in lieu of microinvasion, to avoid inappropriate treatment.

Microinvasive OSCC is a biologically potential lesion capable of gaining an access to lymphatics and blood vessels resulting in metastasis, even though it may be rare. An important factor governing regional metastasis is the nature of invasion wherein, if the invasion is in clusters, the chances of metastasis is higher than those invading in a single cell pattern.

There is no universally accepted treatment protocol for microinvasive OSCC with clinically negative nodes, and elective neck dissection is debatable; although a thorough examination of the lymphatic drainage of the affected area may be warranted. Surgical treatment aimed at excising the lesions with a 1 to 2 mm margins at the periphery and deep margins is recommended for these lesions.

Discussion

As much attention is paid in today's date to establish genetic basis for oral squamous cell carcinomas, majority of the countries across the globe require prevention, and more so, timely diagnosis of this condition.

Although with an increase in awareness, the outpatient reporting with a potentially malignant disorder has increased, accurate diagnosis to search and state the "break in basement membrane" is a must, and may change the outlook of the surgical therapy for these lesions.

Further, this may also warrant a thorough analysis of the lymphatic drainage associated with the area of the lesion, which may not be so on the report of a dysplasia, or also a de facto carcinoma in situ.

Conclusion

Retrospective analysis of microinvasive carcinomas of oral cavity is important in order to determine the clinical presentations and evaluate the prognosis of these lesions, hence demanding us to refresh our knowledge continually.

References