

MICROMETASTASIS IN HEAD AND NECK SQUAMOUS CELL CARCINOMA

Micrometastasis in oral squamous cell carcinoma

Oral cancer is the 6th most common cancer worldwide, with a high prevalence in South Asia.¹ A significant factor affecting prognosis is the inability to detect micrometastasis.

'Micrometastasis is a type of metastasis (the spread of a cancer from its primary location to other sites in the body) in which the newly formed tumors are too minuscule (≤ 2 mm) to be detected'.² These deposits which are initially microscopic could proliferate to form significant tumor deposits or can act as sites from where tumor cells can be further disseminated.

Accurate pathological staging has immense prognostic importance in oral cancer patients with established lymph node metastases. Frequently, the staging in head and neck squamous cell carcinoma (HNSCC) is underestimated due to failure in detecting micrometastasis. This can lead to a compromised treatment protocol.

HNSCC commonly metastasizes to the regional lymph nodes which are the primary site of arrest of tumor cells that have invaded the peritumoral lymphatics; thus they are strongest predictor of disease prognosis and outcome.³ In contrast to node-negative disease, the presence of even a single nodal micrometastasis is linked with a notable difference in survival and recurrence.³

The goal of adjuvant therapy is the removal of micrometastatic tumor cells before metastatic disease becomes clinically evident; oral cancer patients who are most likely to benefit from adjuvant therapy can be identified and targeted by the early detection of micrometastases.⁴

The detection of micrometastasis in patients with early stage oral cancer could have a consequential impact on treatment procedure and prognosis. For this reason, improved direct identification of micrometastasis is particularly important.

The routinely followed technique in India is serial sectioning with hematoxylin and eosin staining, which lacks sensitivity for detection of lymph node micrometastases. Frozen sections (cryosection), immunohistochemistry and reverse transcriptase-polymerase chain reaction analysis are advanced steps in detection of lymph node micrometastasis.

The presence of nodal metastasis in head and neck cancer is an important prognostic factor and crucial in making critical decisions regarding postoperative radiation treatment and follow-up.⁵ Advanced methods should be used in all diagnostic centers and institutions to assess nodal status in relation to occult spread in HNSCC patients for better treatment protocol and favorable prognosis.

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