**Evaluation of p16 immunostaining on fine needle aspiration in cervical lymph node metastasis in head and neck squamous cell carcinoma**

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**INTRODUCTION**

Head and neck squamous cell carcinoma (HNSCC) is the third most common cancer worldwide. The survival rates in HNSCC have decreased in the over 50-year-olds because of the presence of lymph node metastases. The most common sites of origin of head and neck cancers are those arising in the oral cavity and oropharynx.

HNSCC can be divided into two major subgroups:
- Non-keratinizing SCC
- Keratinizing SCC

Non-keratinizing SCCs are often characterized by aggressive behavior, high metastatic potential, and a high tendency towards recurrence.

The most common subtypes of non-keratinizing SCC are squamous cell carcinoma (SCC) and adenocarcinoma. SCC is further divided into keratinizing and non-keratinizing subtypes.

**RESULTS**

The present study was conducted on 50 patients who presented with cervical lymph node metastases and were diagnosed as metastatic squamous cell carcinoma of the head and neck. The patients were evaluated for the primary site of tumor and histological evaluation was done for all cases.

**MATERIALS AND METHODS**

- **Patients**
  - Patients with cervical lymph node metastases were enrolled in the study.
  - Patients with a known primary site of tumor were excluded.
- **Cytology**
  - Cytological smears were prepared from fine needle aspirates and stained with May-Grünwald-Giemsa (MGG), H&E, and Papanicolaou stain.
- **Immunostaining**
  - Immunostaining for p16 was performed on cytological smears and histopathological tissue sections.
  - The primary site of tumor was known in 38 (76%) cases at the time of lymph node metastasis and in 12 patients the primary site was located subsequent to lymph node metastasis.
  - HPV testing was done to determine the HPV status of the primary tumor.
  - Immunostaining for p16 was carried out on both cytological smears and histopathological tissue sections.
- **Immunohistochemistry**
  - The immunohistochemical staining for p16 was performed using an anti-p16 antibody on formalin-fixed paraffin-embedded tissue sections.
  - The p16 positivity was scored as positive when 50% or more cells showed strong and diffuse nuclear and cytoplasmic staining.
  - The p16 positivity was scored as negative when less than 50% of cells showed nuclear and cytoplasmic staining.
- **Positive cases**
  - Positive cases included those with nuclear and cytoplasmic staining in 50% or more cells.
  - The p16 positivity was scored as positive when 50% or more cells showed strong and diffuse nuclear and cytoplasmic staining.
  - The p16 positivity was scored as negative when less than 50% of cells showed nuclear and cytoplasmic staining.

**DISCUSSION**

- HPV-positive HNSCC show an affinity for the oropharynx, especially the tonsils and the base of the tongue, and tend to show poor differentiation on clinical presentation and clinical manifestation.
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- HPV testing should be incorporated into routine cytologic evaluation of metastatic SCC in cervical lymph nodes.

**CONCLUSIONS**

- HPV testing should be incorporated into routine cytologic evaluation of metastatic SCC in cervical lymph nodes.
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**REFERENCES**


