Continuing Medical Education Article

PET/CT Imaging and Human Papilloma Virus–Positive Oropharyngeal Squamous Cell Cancer: Evolving Clinical Imaging Paradigm

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Disclosure

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Target Audience

This article contains information of value to nuclear medicine and radiology residents, fellows, and staff at academic and private practice centers.

Objectives

On successful completion of this activity, participants should be able to…

1. Understand the clinical pathologic features of human papilloma virus–positive oropharyngeal squamous cell cancer.
2. Review the evolving role of ¹⁸F-FDG PET/CT in the management of patients with human papilloma virus–positive oropharyngeal squamous cell cancer.
3. Postulate the imaging strategy of management of patients with human papilloma virus–positive oropharyngeal squamous cell cancer.
Questions
1. Most HPV-positive OPSCCs are associated with which type of HPV virus?
A. HPV type 16.
B. HPV type 18.
C. HPV type 31.
D. HPV type 33.

2. Which imaging modality is recommended for better detection of cystic lymph node metastases commonly seen in HPV-positive SCCs?
A. $\text{^{18}F-FDG PET/nonenhanced CT.}$
B. $\text{^{18}F-FDG PET/enhanced CT.}$
C. MR imaging.
D. Nonenhanced CT.

3. For detection for HPV-positive SCCs, which of the following is a characteristic of p16 immunohistochemistry when compared with in situ hybridization?
A. Easier interpretation.
B. Greater expense.
C. Lower sensitivity.
D. Higher specificity.

4. What is the most common late complication of chemoradiation among HPV-positive SCC patients?
A. Thyroid cancer.
B. Lymphoma.
C. Swallowing abnormalities.
D. Development of peptic ulcers.

5. What is a histologic characteristic of HPV-positive OPSCCs, compared with HPV-negative OPSCCs?
A. Well-differentiated.
B. Keratinizing.
C. High mitotic rate.
D. No distinct basaloid appearance.
6. Which characteristic is often associated with HPV-positive OPSCCs?
A. Large primary tumor.
B. Large lymph node metastases.
C. Low rate of lymph node involvement.
D. Noncystic lymph nodes.

7. Which clinical feature is associated with HPV-positive OPSCCs?
A. Older age at onset.
B. Predominance in women.
C. Predominance in African Americans.
D. Strong association with sexual behaviors.

8. What is the distinct location of HPV-positive SCC in the head and neck region?
A. Palatine and lingual tonsil (oropharynx).
B. Oral cavity.
C. Larynx.
D. Nasopharynx.

9. Which statement is true regarding the response of OPSCC to chemoradiation?
A. HPV-negative OPSCCs responds better than HPV-positive ones.
B. HPV-positive OPSCCs responds better than HPV-negative ones.
C. There is no difference in response between HPV-positive and -negative OPSCCs.
D. Neither HPV-positive nor HPV-negative OPSCCs respond to chemoradiation.

10. HPV-positive status has been proven to be a good prognostic marker in which of the following cancers?
A. Oropharynx.
B. Nasopharynx.
C. Larynx.
D. Lung.