Neuroendocrine changes in HPV+ oropharyngeal squamous cell carcinoma: a case series

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INTRODUCTION

- HPV-positive oropharyngeal squamous cell carcinoma (OPSCC) generally associated with better prognosis compared to HPV-negative counterparts.
- A subset of HPV-positive OPSCC patients still experience aggressive disease progression and mortality.
- Objective: Identify and analyze pathological features in patients with HPV-positive OPSCC who succumbed to the disease.

METHODS

- Retrospective chart review of HPV-positive OPSCC patients from August 2013 to July 2022 at a single institution.
- Collected demographic data from patient charts, including age, gender, and treatment history.
- Inclusion criteria: aggressive locoregional recurrence, evidence of metastatic disease, documented death from disease.
- Performed detailed pathology re-review to identify potential aggressive features contributing to poor outcomes.

RESULTS

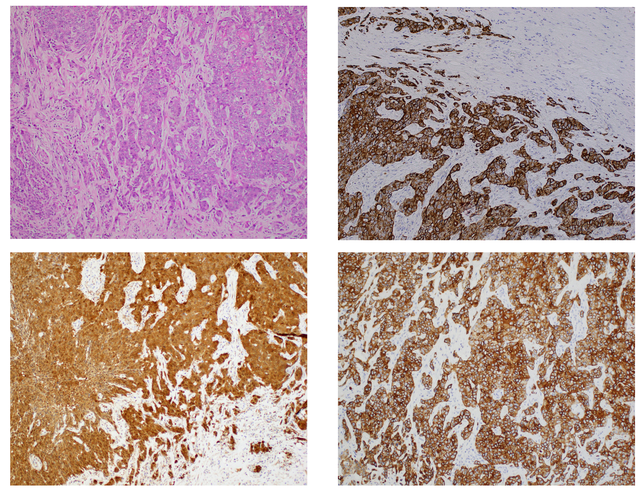
- Study Population: Nine patients met the inclusion criteria for the study.
- Neuroendocrine Features identified in four out of nine patients (1 female, 3 male).
  - Defined as nested growth of basaloid neoplastic cells without keratinization.
  - Accompanied by expression of neuroendocrine markers in over 10% of tumor cells.
- Demographics:
  - Mean age: 63.5 years (range: 56-67 years).
  - All patients were former smokers.
- Disease Characteristics:
  - Metastatic disease observed in bone (n=2) and lungs (n=2)
- Prevalence of Neuroendocrine Features: Approximately 50% of patients with aggressive HPV-positive OPSCC exhibited neuroendocrine features upon pathology review.
  - All patients with neuroendocrine features developed distant metastases and died from disease.

OPSCC with Neuroendocrine Features

	Gender	Age	TNM	
Patient #1	Female	65	T4N1M1	Recurrence after prior CRT
Patient #2	Male	56	TxNxM1	Recurrence after prior surgery
Patient #3	Male	66	T1N1M1	
Patient #4	Male	67	T4N2M1	

DISCUSSION

- The presence of neuroendocrine features in nearly half of the patients suggests a potentially aggressive phenotype within HPV-positive OPSCC.
- Neuroendocrine differentiation may contribute to poor prognosis and treatment challenges in this subset of patients.
- Findings highlight the need for heightened awareness of neuroendocrine features in aggressive HPV-positive OPSCC for better prognostic evaluation.
- Adaptation of therapeutic approaches may be necessary for patients exhibiting these aggressive features.
- Call for further research with larger sample sizes to validate these findings and explore the relationship between neuroendocrine characteristics and treatment outcomes in HPV-positive OPSCC patients.



Images A-D from top left to right: HE slide (a), immunostain for CYK5/6, a marker for SCC (b), immunostain for p16 (c), immunostain for synaptophysin, a marker for neuroendocrine (d)