HPV-Driven Oropharyngeal Carcinoma – Diagnosis, Treatment and Recovery in a 41-Year-Old Male with HPV-Positive Cancer

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Abstract

Human Papilloma Virus (HPV) is responsible for a subset of head and neck cancers, including those in the oropharynx region, leading to a rise in oropharyngeal cancer (OPC) worldwide. Around 38,000 cases per year of HPV-related cancers arise in the head and neck region, of which 21,000 cases are oropharyngeal squamous cell carcinomas (OPSCCs), with an increasing frequency in high-income countries [1]. More than 80% of oropharyngeal cancers in the United States are caused by HPV, primarily HPV 16, co-factors such as smoking and immunosuppression contribute to increasing the risk of acquiring this virus [2]. These cancers often affect younger individuals and frequently present after metastasis to the neck, appearing as a neck lump.

This case study highlights the clinical presentation and treatment of HPV-mediated oropharyngeal cancer (OPC) and underscores the global health importance of HPV prevention. With the rising global incidence of HPV-related cancers, this study aims to raise awareness of the urgent need for HPV vaccination and education worldwide.

Clinical Case

A 41-year-old male with a history of GERD and eosinophilic esophagitis presented with two weeks of left neck swelling and dysphagia. Imaging revealed a left tonsillar mass with cystic cervical lymphadenopathy. Biopsy confirmed p16-positive squamous cell carcinoma, consistent with HPV-mediated OPSCC. He underwent definitive concurrent chemoradiation with IMRT and cisplatin, along with swallow therapy for treatment-related dysphagia.

Biopsy and Histopathology:

Immunohistochemistry revealed P40 (+) and p16 (strong/diffuse +) staining, confirming HPV-driven etiology.

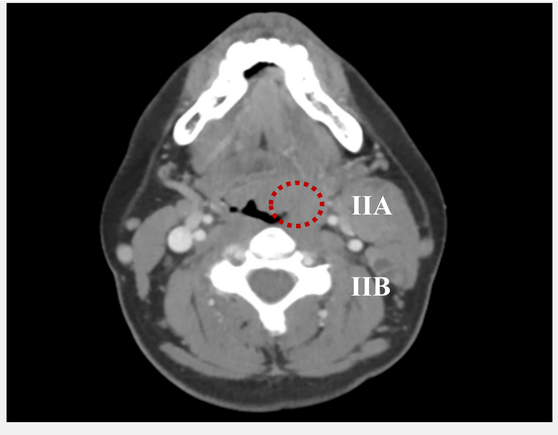
Laboratory Findings: Baseline and follow-up labs were obtained to guide therapy and monitor tolerance. Results showed mild anemia (Hgb ~7.3 g/dL, improved pre-therapy), normal WBC and platelet counts, and controlled hypothyroidism on levothyroxine 75 µg daily. p16 immunostaining confirmed high-risk HPV subtype 16.

Physical Exam Findings

System	Findings
General	Well-appearing, cooperative, in no acute distress
Voice	Mild glottic fry
Cranial Nerves	Grossly intact
Respiratory	No stridor, stertor, or retractions; breathing comfortably
Nose	No rhinorrhea or epistaxis
Oral Cavity/Oropharynx	Tongue smooth; no roof of mouth abnormalities; no lesions on floor of mouth, tongue, or buccal mucosa; full tongue mobility; posterior pharyngeal wall flat
Neck	No laryngeal tenderness or major salivary gland enlargement; thyroid not enlarged; no thyrohyoid space tenderness; large bulky non tender left lymphadenopathy

Nasolaryngoscopy demonstrated a large exophytic mass at the left base of the tongue, consistent with a primary oropharyngeal lesion. Mild erythema and post-cricoid edema were also noted, suggesting localized inflammation. No vocal fold involvement or airway compromise was observed.

Diagnostic Imaging



Imaging:

- CT Neck with IV Contrast (Dec 2024) revealed a 3.5 × 2.7 cm left tonsillar pillar mass extending toward the vallecula, with level IIa/IIb lymphadenopathy showing cystic degeneration—suspicious for metastatic spread
- PET/CT (June 2025) demonstrated complete metabolic resolution of both the primary lesion and nodal disease, confirming favorable treatment response.

Case Follow-up

Clinical Course and Outcome

- Following a **7-week concurrent chemoradiation regimen** (IMRT with cisplatin), the patient achieved **complete radiologic resolution** of the primary oropharyngeal mass and associated cervical lymphadenopathy, confirmed by **PET/CT imaging (June 2025)**
- The patient's post-treatment recovery was marked by **progressive improvement in swallowing**, reduction of dysphagia, and **removal of the PEG tube**..
- **Speech-Language Pathology (SLP) evaluation** documented 94% successful swallow rate with soft solids and thin liquids.
- At the **September 2025 follow-up**, the patient maintained stable weight (170 lbs), tolerated a regular diet, and demonstrated continued improvement in swallowing efficiency.

Awareness on Signs and Early Detection of OPSCC

- Neck masses can present as one of the first signs of head and neck cancers and it's important to rule out malignancy when these are seen [4].
- Early diagnosis is key as metastatic spread can occur.
- More younger patients, non-smokers are being diagnosed.
- HPV vaccination programs (gender-neutral) have already shown a decline in cervical cancer rates, offering a model for preventing rising HPV-mediated oropharyngeal cancers

Multidisciplinary Collaboration

- Coordination among **ENT, oncology, radiology, gastroenterology, and SLP teams** facilitated early diagnosis, effective treatment, and functional restoration.

Future Direction

- Conduct survey-based studies assessing awareness of HPV-related head and neck cancers and vaccination attitudes in South Asian populations.
- Promote gender-neutral HPV vaccination campaigns and early screening programs globally to reduce disparities in cancer prevention and outcomes.

References/Acknowledgments

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