Squamous Cell Carcinoma of the Larynx in a 16 Year Old Male

Fernando Acosta, M.D., Songlin Zhang, M.D., Ph.D.
The University of Texas Health Science Center at Houston, Department of Pathology, Houston, TX, USA

Introduction

Laryngeal squamous cell carcinoma (SCC) is extremely rare in the pediatric age group. It accounts for less than 0.1% of all head and neck malignancies (1). Unlike adult laryngeal SCC, which is more common and associated with tobacco and alcohol use and human papilloma virus (HPV) infection, etiology for the pediatric population remains largely unknown (2). Both sexes are almost equally affected with 60% occurring in boys compared to 80% in adult males (4). Due to its rarity, treatment is largely extrapolated from adult cases. Initial management consists of surgical resection with possible adjuvant chemoradiotherapy (3). Due to its rarity and non-specific symptoms, hoarseness can be attributed to upper respiratory tract infection, voice abuse, and puberty (1). The most significant risk factor for developing childhood laryngeal carcinoma is prior radiation for juvenile papillomatosis caused by low risk HPV infection (4). In our case, the patient did not have a history of radiation, and the lesion was positive for HPV16. Relationship between HPV and laryngeal SCC is currently not well established with prevalence ranging from 7 to 59% (5). Of those cases positive for HPV, the most common types are 6, 11, 16, and 18. It is considered that laryngeal squamous cell carcinoma behaves more aggressively in children than in adults (4). However, HPV related carcinoma may behave differently.

Patient History

A 16 year old male with no significant medical history was admitted for recent dysphagia and hoarseness. A papillary lesion at the true vocal cord was noted during laryngoscope examination with a presumed diagnosis of laryngeal papilloma. The lesion was removed and submitted for pathologic evaluation.

Materials and Methods

- Hematoxylin–eosin stained slides were prepared from formalin-fixed, paraffin-embedded tissue blocks
- In-situ hybridization test for HPV was performed

Results

A-B: The hematoxylin–eosin stained slides show a predominantly exophytic squamous lesion with unequivocal focal stromal invasion. C-D: Higher magnification; the infiltrating SCC is well differentiated with keratinization, moderate nuclear pleomorphism, and atypical mitotic figures. HPV test on the tumor tissue (not shown), performed by the referring outside institution, was positive for HPV16. The follow-up laryngoscope examination at our institution after the initial resection shows no visible residual tumor.

Discussion

Diagnosis of laryngeal squamous cell carcinoma can be delayed in the pediatric population due to its rarity and non-specific symptoms. Hoarseness can be attributed to upper respiratory tract infection, voice abuse, and puberty (1). The most significant risk factor for developing childhood laryngeal carcinoma is prior radiation for juvenile papillomatosis caused by low risk HPV infection (4). In our case, the patient did not have a history of radiation, and the lesion was positive for HPV16. Relationship between HPV and laryngeal SCC is currently not well established with prevalence ranging from 7 to 59% (5). Of those cases positive for HPV, the most common types are 6, 11, 16, and 18. It is considered that laryngeal squamous cell carcinoma behaves more aggressively in children than in adults (4). However, HPV related carcinoma may behave differently.

Conclusion

Increased clinical suspicion is important for early detection and proper management of the pediatric patient.

References