

Human Papillomavirus-Positive Squamous Cell Carcinoma of the Tonsil: Case Report



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Abstract

The association of squamous cell carcinoma and HPV is increasing especially among young non-smoker males. This fact is likely due to changing sexual behaviors. The main concern of this disease is the high percentage of recurrence especially when the treatment is not well established. We report a case of a human papillomavirus-positive squamous cell carcinoma of the left tonsil without recurrence after 5 years.

The objective of this study is to describe - from our clinical case and literature review- the clinical and radiological features of human papillomavirus-positive squamous cell carcinoma of the tonsil and discuss its therapeutic management and prognosis.

Keywords: Human papilloma virus; Squamous cell carcinoma; Tonsil

Introduction

It is agreed that oro-pharyngeal cancers (OPCs) emerge from two main factors: alcohol and tobacco use, and human papilloma virus (HPV) infection, especially HPV16 [1-4]. The most common site is the lingual and palatine tonsils [5]. The association squamous cell carcinoma and HPV is increasing especially among younger non-smoker males. This is likely due to changing sexual behaviors [2]. It is also reported that this association has a better response to therapy and overall survival [4].

Case Report

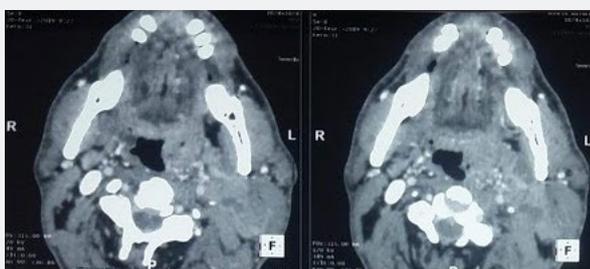


Figure 1: Axial CT scan showing a mass of the left tonsil with enlarged level II lymph nodes.

A 55-year-old male with no medical history or toxic habits consulted the otolaryngology clinic for a left cervical adenopathy evolving for four months without other associated signs. Physical examination revealed an ulcerated mass in the left palatine tonsil and multiple lymphadenopathies at level II of the same side.

Laryngoscopy showed a fungating ulcerated mass of the left tonsil without invasion of the lingual surface of the epiglottis. Base of tongue, larynx, esophagus and the rest of the pharynx were free of any suspicious mass. Pathology revealed a tonsillar papilloma colonized by squamous cell carcinoma.

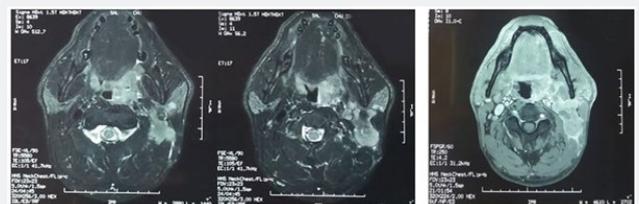


Figure 2: Axial MRI showing the mass of the left tonsil.

Contrast-enhanced computed tomography (CT) and magnetic resonance imaging (MRI) scans of the head and neck showed a 41 x 25 x 60 mm mass in the left palatine tonsil. This process extends to the base of the tongue, glosso-epiglottic, pharyngo-epiglottic and ary-epiglottic folds, left para-pharyngeal fat and the retro-pharyngeal space. It also showed multiple necrotic left cervical lymphadenopathies; the largest of which measures 19.8 x 26.7mm (left IIa level) (Figures 1-3). A whole-body positron emission tomography-computed tomography (PET-CT) did not show metastasis outside of fluorodeoxyglucose uptake within the left palatine tonsil and left level II lymph nodes.



Figure 3: Coronal MRI, showing tumor of the left tonsil and ipsilateral lymph nodes IIa.

The patient underwent an enlarged left tonsillectomy, with contralateral tonsillectomy and left triangular neck dissection. HPV infection was detected in the specimen. He also received postoperative radiotherapy with a dosage of 60 Gray in 30 fractions and two cycles of adjuvant chemotherapy with a regimen of CDDP (30 mg/m², days 1 and 15) and irinotecan (CPT-11) (60 mg/m², days 1 and 15) at four weeks intervals. The evolution was good without recurrence after five years.

Discussion

Human papillomavirus-positive head and neck squamous cell carcinoma (HNSCC) is a major world health problem with 50 000 new cases per year and 11 000 deaths expected annually in the United States alone [6]. In the USA, in 90% of oropharyngeal SCC, subtype 16 was detected which is sexually transmitted. It is well known that HPV subtypes 16, 18, 33 and 35 induce oropharyngeal SCC yet it is associated with a better prognosis than other SCCs [7]. However, the main concern is local and lymph node recurrence [8]. Local extension of tonsillar region tumors ranges between 27 and 77%. It proceeds by invasion of underlying muscle fibers; mainly pharyngeal constrictor muscles, palatoglossus and palatopharyngeus muscles [9,10]. Lymph node involvement was noted in 26.2 % of cases on histology in Laccourreye's study [11].

In 2012, the French society of otolaryngology considered that CT scan was the gold standard for local extension assessment in oropharyngeal cancer [12]. However, Gadolinium-enhanced T1- weighted MRI sequences provide more precise evaluation of invasion of oropharyngeal tissues, both mucosal and muscular, with fine analysis of the parapharyngeal space and styloglossus muscle, while T2-weighted sequences allow lymph-node assessment. It became the main imaging technique for local assessment of tonsillar region cancer [13].

Despite a multimodal treatment including surgical resection, radiotherapy, and chemotherapy, most cases of HNSCC develop distant metastasis in the follow-up periods. It is recommended to include HPV status in initial assessment of HNSCC, owing to the significantly greater survival, to optimize treatment [14]. The prevalence of synchronous bilateral HNSCC of the tonsil is still unknown, and much controversy regarding routinely removing the contralateral tonsil [15]. Performing a routine contralateral tonsillectomy is explained by the potentially fatal consequences

of missing an occult contralateral disease. Moreover, symmetric appearance of the palatal arches improves clinical follow-up and makes detection of tumor recurrence easier without a significant increase in morbidity [15-17].

It is intriguing that the addition of either chemotherapy (typically Cisplatin) or the EGFR targeting monoclonal antibody Cetuximab to radical radiotherapy in the treatment of HPV undetermined tumors historically improves overall survival by 10% [18]. As there is evidence of a relationship between EGFR expression and HPV as measured by p16. On the other hand, it was recently proven that tonsillectomy prior to radiation therapy was beneficial. An American study of 524 patients with early-stage tonsillar SCC noted that 5-year overall and recurrence-free survival after radiation therapy varied significantly; respectively 83% and 69% with prior tonsillectomy and 64% and 76% without tonsillectomy [19].

Conclusion

The incidence of HPV-associated oropharyngeal cancers is increasing. The main concern of this disease is the high percentage of recurrence especially when the treatment is not well established.

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