

Study examines chronic inflammation in oral cavity and HPV status of head and neck cancers

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Among patients with head and neck squamous cell carcinomas, a history of chronic inflammation in the mouth (periodontitis, i.e. gum disease) may be associated with an increased risk of tumors positive for human papillomavirus (HPV), according to a report published Online First by *Archives of Otolaryngology – Head & Neck Surgery*.

The National Cancer Institute has reported a steady increase in the prevalence of oropharyngeal cancers in the United States since 1973, despite a significant decline in tobacco use since 1965, according to background information in the study. Similar trends have been recognized worldwide, and the authors note that the increase has mainly been attributed to oral HPV infection.

Mine Tezal, D.D.S., Ph.D., of the University at Buffalo, and colleagues evaluated data from 124 patients diagnosed with primary squamous cell carcinoma (SCC) of the oral cavity, oropharynx, and larynx between 1999 and 2007 for whom tissue samples and dental records were available.

Of the 124 primary cases of head and neck squamous cell carcinoma, 31 (25 percent) were located in the oral cavity, 49 (39.5 percent) in the oropharynx and 44 (35.5 percent) in the larynx. Fifty (40.3 percent) of the 124 tumor samples were positive for HPV-16 DNA. The authors found that a higher percentage of oropharyngeal cancers were HPV-

positive (65.3 percent) compared with oral cavity (29 percent) and laryngeal (20.5 percent) cancers.

Periodontitis history was assessed by alveolar bone loss (ABL) in millimeters from available dental records. Patients with HPV-positive tumors had significantly higher ABL compared with patients with HPV-negative tumors. Each millimeter of ABL was associated with an increased odds of HPV-positive [tumor](#) status 2.6 times after adjustment for other factors. The strength of this association was greater among patients with oropharyngeal SCC compared with those with oral cavity SCC and laryngeal SCC.

"Periodontitis is easy to detect and may represent a clinical high-risk profile for oral HPV infection," the authors conclude. "Prevention or treatment of sources of inflammation in the oral cavity may be a simple yet effective way to reduce the acquisition and persistence of oral HPV infection."

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