



Studies find link between tooth loss and cancer

By DrBicuspid Staff
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Do your patients roll their eyes when you press them about their brushing and flossing habits? Researchers this month provided yet another compelling reason why they should take you seriously. Three new studies suggest a strong correlation between periodontal disease, tooth loss, and an increased risk of developing cancer.

In the May issue of *Cancer Epidemiology, Biomarkers & Prevention* (May 2008, Vol. 17:5, pp. 1222-1227), researchers from Aichi Cancer Center in Nagoya, Japan, and Nagoya University Graduate School of Medicine speculate that bacterial infection and inflammation resulting from poor oral care that leads to tooth loss could also be driving development of esophageal, lung, and head and neck cancers.

"Tooth loss is a common consequence of chronic bacterial infection and may therefore serve as a surrogate for chronic infection and inflammation, which in turn may be important to the pathogenesis of cancer," said the study's lead author, Akio Hiraki, Ph.D., a researcher at the Aichi Cancer Center.

The researchers measured rates of 14 different cancers and rates of tooth loss in 5,240 cancer patients in Japan, and compared those rates among 10,480 matched cancer-free participants. The researchers specifically found that people with tooth loss were 136% more likely to develop esophageal cancer, had a 68% increased risk of developing head and neck cancer, and had a 54% greater chance of developing lung cancer. The researchers also found that the cancer rate increased proportionally to the number of teeth a patient had lost.

These increased risks were seen after researchers took into account a patient's history of smoking and alcohol use. The researchers noted that age and gender affected the associations between tooth loss and cancer risk. For head and neck and esophageal cancers, there were clear associations between tooth loss and cancer risk in women and patients younger than 70 years old, but a less clear link in men and older patients.

Researchers from the Imperial College London and Harvard School of Public Health reported in the May 6 online edition of *Lancet Oncology* (DOI:10.1016/S1470-2045(08)70106-2) that periodontal disease was associated with an increase in overall cancer risk among

nonsmokers. This study looked at 48,375 male health professionals with a follow-up of more than 17 years.

Of these individuals, 5,720 persons had cancer, excluding nonmelanoma skin cancer and nonaggressive prostate cancer. The study found that those with periodontal disease had a 14% increase in cancer risk. This included a 36% increase in lung cancer risk, a 49% increase in kidney cancer risk, a 54% increase in pancreatic cancer risk, and a 30% increase in hematologic cancer risk. In nonsmokers periodontal disease was associated with a 21% increased risk of total cancers and a 35% increase in hematologic cancers. They found no association between tooth loss and lung cancer in nonsmokers.

"The increased risks noted for hematological, kidney, and pancreatic cancers need confirmation but suggest that periodontal disease might be a marker of a susceptible immune system or might directly affect cancer risk," the researchers concluded.

Another study out of Harvard, published May 14 in the Online First edition of *Cancer Causes & Control* (DOI:10.1007/s10552-008-9163-4), reviewed the evidence for an association between the risk of cancer and periodontal disease and/or tooth loss. The researchers reported that periodontal disease has been associated with increased risk of oral, upper gastrointestinal, lung, and pancreatic cancers in different populations, and that these associations are still present when corrected for smoking and socioeconomic status.

However, the researchers also noted that while chronic bacterial infections in the mouth may explain the link between tooth loss and cancer risk, tooth loss in cancer patients could simply reflect unhealthy behaviors that contribute to cancer risk.