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Dental X-rays and Risk of Meningioma: Response to Drs. Jorgenson and White

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Abstract

Report of past dental x-rays has been reported to be associated with the diagnosis of intracranial meningioma. The authors respond to commentary regarding their recent case/control study of the topic.

Letter

We thank Drs. Jorgensen and White for re-iterating two important considerations presented in the discussion section of our manuscript¹ that relate to interpretation of our results, i.e. recall bias and the fact that exposures reported by our study subjects are from the past when exposure to ionizing radiation associated with dental x-rays was higher than in the current era. Recall bias is an important issue in every case/control study when validation of reported exposures is not available. In our study, presuming an average of 4-5 dentists seen per study subject,² validation of dental records would require contact with a minimum of 12,000 dentists, a task not technically or financially possible. As cohort datasets containing information on both dental x-rays and meningioma are, to our knowledge, limited at present, the case/control design (with its associated limitations) remains one important tool to gain information regarding associations between this exposure and a diagnosis of intra-cranial meningioma. Validation of dental x-ray reports has been previously addressed by Dr. White and his colleagues² and suggests that while under- and over-reporting of this exposure does occur, recall of this exposure is unbiased with a similar measure of agreement for cases and controls. The authors thus concluded that interview data alone may be used for case/control comparisons of dental x-ray exposure.²

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The association between therapeutic radiation to the head (whether for benign or malignant conditions) and meningioma risk is consistently reported and our study confirms these findings.¹ The suggestion that oral-facial region pain associated with meningioma may lead to increased use of imaging is interesting; in our data only one study subject to date reported such a presenting symptom.

It is important for readers to note that the amount of radiation exposure associated with dental x-rays has markedly decreased over the past several decades. As Dr. White and his colleagues state, current exposure levels for any given dental x-ray are likely to be low. As receipt of medical imaging (including dental x-rays) remains one of the few modifiable exposures to ionizing radiation and the effect of interaction of cumulative exposure with patient genotype is unclear it is prudent for patients and health-care providers to converse regarding use of such technology. We concur with the American Dental Association guidelines and recent reaffirmation that dental x-rays, an important component of good dental care, should be ordered for patients only when necessary for diagnosis and treatment.³

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