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Letter to the editor

Trigemino-cardiac reflex could occur during routine dental treatment



Dear Editor,

We read an interesting article in your journal about trigemino-cardiac reflex (TCR) occurred during bilateral sagittal split osteotomy.¹ TCR is a brainstem reflex during surgical procedures stimulating the Ganglion Gasser, central, and peripheral parts of the trigeminal nerve evoking hemodynamic perturbation that might cause asystole and even cardiac arrest.² The consensus of TCR is an abrupt decreased more than 10–20% heart rate (HR) and mean arterial blood pressure (MABP).² TCR is observed frequently on the occurrence during ophthalmic surgery, skull base surgery, and craniofacial surgery. However, most dentists are unfamiliar with this operating-induced sudden onset of bradycardia.

Form the literature review, TCR could also occur during routine dental treatment. A pilot case-crossover study reported that a total of 61 patients were found to have significant HR and BP decreases during the extraction of posterior mandibular teeth.³ Previously, our observational prospective study demonstrated that a significant HR and MABP reduction occurs during dental implant surgery of 135 healthy patients.⁴ In this study, the drop of 15% MABP could be recognized as TCR exaggerated. Interestingly, a substantial MABP decrease possibly related to TCR is occurred during endodontic treatment of irreversible pulpitis teeth.⁵ Vital pulp extirpation may stimulate the dental branch of trigeminal nerve and in turn trigger TCR, resulting in lowering MABP.

Taken together, dentists should gain knowledge of TCR and gentle manipulation during each procedure to avoid stimulating the peripheral portion of the trigeminal nerve. Monitor used for the status of heart rate and blood pressure is highly advised to assure medical quality and promote patient safety.

Declaration of Competing Interest

The authors have no conflicts of interest relevant to this article.

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