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Trigeminocardiac: a critical review

Pooyan Sadr Eshkevari
University of California, USA

Abstract

Trigeminocardiac reflex (TCR), may present as a shocking event through the course of surgery in craniomaxillofacial area. The original definition of TCR describes a sinus bradycardia leading to a 10% to 20% decrease in the resting heart rate that is sustained for at least 5 seconds, which may in some cases be followed by atrioventricular block, ventricular bigeminy, ventricular tachycardia, and asystole. Several studies, especially in the field of ophthalmology and neurosurgery, have concerned the triggering factors, preventive measures, and mechanism of this phenomenon. The reflex shares many similarities to other reflexes like diving reflex, elicited by cold test for example, and is thought to be of oxygen preserving value for the brain. Although the reflex seems to be avoidable by the application of a less aggressive surgical approach, and treatable simply by ceasing the triggering procedure, there remain some concern about development of asystole and other possible post-operative complications. Moreover, the underlying mechanism of the reflex is still obscure. The author has tried to look into the available evidence on TCR, to propose a more inclusive definition, and to review the most clinically important aspects of the phenomenon.

Biography

Dr. Pooyan Sadr-Eshkevari is a dentist graduated from Azad School of Dental Medicine, Tehran, Iran in late 2006, at the age of 26. He then became, along with the clinical practice, the Director of the Dental Section in Farzan Clinical Research Institute, the one and only Contract Research Organization of Iran. During this time he attended several externships with well known craniomaxillofacial surgeons of Iran and focused his research field in craniomaxillofacial surgery. From July 2010 to July 2011 he has worked as an invited researcher for the oral and maxillofacial plastic surgery of Ruhr University Bochum in Germany where he has been involved in conducting research on osteotomy techniques and implantology. He has published 30 articles in mainstream journals of craniomaxillofacial plastic surgery, dental implantology, and also neuroscience. He is now a student of the Professional Program for International Dentists in University of California, Los Angeles. His focus at the moment is on trigeminocardiac reflex which is the result of his close cooperation with some of the internationally well-known researchers of the field.