

The nasocardiac reflex during nasoendoscopy: A commonly overlooked risk

Arthur Wong, MD, Mohd Zulkiflee Abu Bakar, MBBS, MS

Department of Otorhinolaryngology, University Malaya Medical Centre, Kuala Lumpur, Malaysia.

ABSTRACT

Introduction: The nasocardiac reflex is a vagally mediated reflex induced by stimulation of the nasal mucosa which may lead to severe bradycardia. We aimed to ascertain its electrocardiographic features and to map the heart rhythm dynamics during nasoendoscopy. We also intended to identify variables that could affect its occurrence. **Methods:** This was a prospective, quasi-experimental study. Individuals 18-40 years old with normal heart rates were selected. Those with diabetes, hypertension, cardiac disease, nasal obstruction, cigarette smoking, or anxiety were excluded. Clinic setting flexible nasoendoscopy in first pass without local anaesthesia were conducted on the subjects while being observed electrocardiographically in three phases of 20 seconds each – baseline, nasoendoscopic, and recovery phases. Heart rate fluctuations were charted, and the positive and negative nasocardiac reflex groups of subjects were identified. Analyses against age, gender, blood pressure, heart rate, oxygen saturation, pain scale, and past nasoendoscopic experience were done using Fisher's exact test and Kruskal-Wallis test. **Results:** Fifty three subjects (34 males, 19 females, mean age 28.2) were analysed. The heart rates during the baseline, nasoendoscopic, and recovery phases were 81.0, 72.7, and 75.2 respectively. Sixteen subjects (30.2%) had a positive nasocardiac reflex, and they remained in sinus rhythm. One subject (1.9%) developed temporary ectopic premature ventricular contractions. No variables were found affecting the incidence of a nasocardiac reflex. **Conclusion:** The pattern of heart rate dynamics was consistent as heart rates drop rapidly upon endoscope insertion and recover after its withdrawal. Although our subjects remained asymptomatic, clinicians should not overlook the risks of a severe nasocardiac reflex when performing nasoendoscopy. We recommend cardiac monitoring to be part of the management of vasovagal responses during in-office endonasal procedures. Further research should be done on a broader range of subjects as long as ethical and safety concerns are fulfilled.

OP-20

The effects of subthalamic nucleus deep brain stimulation on sleep quality and polysomnographic parameters in patients with Parkinson's disease

Andrew Charles Gomez Junior, MD MRCS (ENT)(Edinburgh)¹, Chong Aun Wee, MBBS MS (ORL-HNS)², Mohd Adzreil Bin Bakri, MBBCh BAO MRCS (ENT) (Edinburgh) MS (ORL-HNS)³, Kamal Azrin Abdullah @ Kalai Arasu Muthusamy, PhD (Oxford), MSurg (UM), MBBS (UM)⁴, Lim Shen-Yang, FRACP (Aust), MBBS (Melb), MD (Neuroscience) (Aust)⁵

¹Department of Otorhinolaryngology, University of Malaya, Kuala Lumpur, Malaysia, ²Department of Otorhinolaryngology, University of Malaya, Kuala Lumpur, Malaysia, ³Department of Otorhinolaryngology, University of Malaya, Kuala Lumpur, Malaysia, ⁴Department of Neurosurgery, University of Malaya, Kuala Lumpur, Malaysia, ⁵Department of Neurology, University of Malaya, Kuala Lumpur, Malaysia

ABSTRACT

Introduction: The prevalence of Obstructive sleep apnea amongst patients with Parkinson's disease is reported to be up to 80%. Parkinson's disease is managed primarily using medications that act on the dopaminergic pathway. Subthalamic nucleus deep brain stimulation (STN-DBS) is now commonly used in patients who do not achieve satisfactory control of symptoms with optimal medical therapy. Although the various motor and non-motor benefits of this procedure has been documented, the changes in objective sleep-oxygenation related parameters in these patients have not been well studied. **Methods:** A prospective longitudinal observational cohort study was done in University Malaya Medical Centre from September 2019 to December 2020. Data was collected from 9 Subjects with Parkinson's Disease who underwent bilateral STN-DBS. Both Subjective and objective parameters of sleep apnea were assessed before and after this procedure. Subjective assessments included Movement disorder Society-Unified Parkinson's Disease Rating Scale (MDS-UPDRS) 1.7 and 1.8, Parkinson's Disease Sleepiness Scale 2 (PDSS-2) and Epworth Sleepiness Scale (ESS) scores. Objective polysomnographic parameters were the Apnea-Hypopnea-Index (AHI), Oxygen desaturation Index (ODI) and respiratory disturbance index (RI) were obtained before and after successful STN-DBS procedure. **Results:** Results obtained showed significant improvements in both Subjective assessments and polysomnographic parameters including the AHI, ODI and RI. **Conclusion:** We conclude, the benefits of STN-DBS go beyond the control of non-sleep related symptoms of Parkinson's Disease.