Total Intravenous Anaesthesia Approach To Overcome The Phenomenon Of Left Bundle Branch Block Induced by General Anaesthesia

Kuan Leong Yew, MBBS, MRCP

Cardiology Department, Sarawak General Hospital, 3rd Roundabout Tabuan-Samarahan Expressway, Kota Samarahan, Sarawak, 94300 Malaysia

Dear Editor,

Athlete's heart had been described as early as 1899 by S. Henschen. As a consequent of exercise-induced cardiac remodeling, an athlete's heart will physiologically adapt leading to bradycardia, cardiac hypertrophy and cardiomegaly. It is a non-pathological condition. Many high performing athletes had suffered sports related injuries and undergone surgeries without significant anaesthesia related adverse events. Hence, it is interesting to note the occurrence of left bundle branch block(LBBB) during general anaesthesia for an otorhinolaryngology case in a young male patient[1]. The LBBB disappeared after anaesthetic drugs exposure was discontinued and the only similar drug exposure in both episodes was sevoflurane. Sevoflurane has been reported to cause malignant hyperthermia. We could not rule out the possibility of inhalational sevoflurane exposure causing the transient LBBB. The authors didn't elaborate whether the patient had eventually gone for a third surgical attempt, the choice of anaesthetic agents being used and its outcome. If the surgery had not been done yet, perhaps the authors could remove sevoflurane from the general anaesthesia for induction and maintenance purposes. In this case, the idea of solely using total intravenous anaesthesia(TIVA)[2] may theoretically be more advantageous and eliminate the exposure to the possible culprit agent. Shorter acting opioids and propofol are commonly used as part of TIVA and delivered by target controlled infusion manner. The infusion can be titrated to achieve the desired level of hypnosis and anaesthesia required for the surgery.

As the authors had pointed out, acute LBBB could be a manifestation of acute myocardial infarction. It was not advisable to give atropine to increase the heart rate as the patient was hemodynamically stable and the resultant tachycardia may worsen any form of ischemia if the aetiology of LBBB was indeed acute coronary syndrome. A good and detailed echocardiogram should be able to provide enough information to distinguish exercise induced left ventricular hypertrophy from pathological cardiomyopathy such as hypertrophic cardiomyopathy(HOCM). Generally in athlete's heart, left ventricular wall thickness should not exceed 13-15mm, the early diastolic relaxation velocity is normal or increased and left ventricular systolic function is normal[3]. When there is indeterminate cardiac enlargement even with echocardiogram study, then cardiac magnetic resonance imaging is advocated to confirm other pathological condition such as myocarditis or apical HOCM[4].

Finally, any young athlete going for operation should be assessed with good history, clinical examination, ECG and/or echocardiocardiogram. It is not cost effective to subject them to a plethora of tests unless mandated by updated guidelines.

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Corresponding Author: Kuan Leong Yew, Cardiology Department, Sarawak General Hospital, 3rd Roundabout Tabuan-Samarahan Expressway, Kota Samarahan, Sarawak, 94300 Malaysia Email: yewkuanleong@yahoo.com