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Letter to the Editor

Heart rate variability after ventricular septal defect closure

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Ventricular septal defect (VSD) is the most common congenital heart disease by far, with a birth prevalence of 2.62 per 1000 live births [1]. Arrhythmias are common complications even after VSD closure. However, Heiberg J et al.'s perspective article about Heart rate variability is impaired in adults after closure of ventricular septal defect in childhood: deserved comment [2].

First, only subjects with operated VSD-patients who had undergone surgical closure of a congenital, isolated VSD through right atrial approach were included in the research. As we all know, there are many types of VSD: perimembranous, conoventricular, muscular and inlet VSD and most of the VSDS can be repaired through the right atrial approach. The arrhythmias may be different from the types of VSD as the edge of muscular VSD is further from the conduction bundle than perimembranous VSD. So the authors should identity the types of VSD.

Second, the control group is patients with an open VSD. There is ongoing controversy regarding the need to close very small defects, the presence of a significant left-to-right shunt may cause left ventricular overload, ventricular dysfunction, pulmonary arterial hypertension, arrhythmias and aortic regurgitation [3]. Even small shunt may place the patients at risk of bacterial endocarditis [4]. And the heart rate variations and events were observed in some of the patients in the Open VSDs group.

How the authors deal with the problems? Also the author did not define how small the VSD is small VSD.

In summary, the researches have shown that adults who had surgical VSD closure in early childhood had impaired heart rate variability and, particularly, participants with complete RBBB had lower heart rate variability. However, if the baseline information of the included patients is more detailed, the result will be convincing.

Competing interests

None declared.

References

[1] D. van der Linde, E.E. Konings, M.A. Slager, M. Witsenburg, W.A. Helbing, J.J. Takkenberg, et al., Birth prevalence of congenital heart disease worldwide: a systematic review and meta-analysis, J. Am. Coll. Cardiol. 58 (2011) 2241–2247.
[2] J. Heiberg, F. Eckerström, C.E. Rex, M. Maagaard, H. Mølgaard, A. Redington, et al., Heart rate variability is impaired in adults after closure of ventricular septal defect in childhood: a novel finding associated with right bundle branch block, Int. J. Cardiol. 274 (2019) 88–92.
[3] M.E. Menting, J.A. Cuypers, P. Opić, E.M. Utens, M. Witsenburg, A.E. van den Bosch, et al., The unnatural history of the ventricular septal defect: outcome up to 40 years after surgical closure, J. Am. Coll. Cardiol. 65 (2015) 1941–1951.
[4] C.L1. Backer, R.C. Winters, V.R. Zales, H. Takami, A.J. Muster, D.W. Benson Jr., et al., Restrictive ventricular septal defect: how small is too small to close, Ann. Thorac. Surg. 56 (1993) 1014–1019.

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