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SPECIAL SECTION ON CORONARY ANOMALIES

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Coronary artery anomalies: A multidisciplinary approach to shape the landscape of a challenging problem

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Abstract

Coronary artery anomalies, particularly anomalous aortic origin of a coronary artery with an inter-arterial course, are associated with sudden cardiac arrest or death in the young. There is paucity of data on risk stratification and longitudinal follow up is lacking in these patients. Collaboration and sharing of data among specialized centers might shed much needed light in this complex problem.

KEYWORDS

anomalous coronary arteries, multidisciplinary team, sudden cardiac death

Coronary artery anomalies, congenital and acquired, continue to challenge the health care community. Children of all ages, from neonates to young adults, present with these conditions and variable clinical manifestations of myocardial ischemia. Some of them, as in the case of anomalous aortic origin of a coronary artery, may present initially with cardiogenic shock or sudden cardiac arrest or death. This is the second leading cause of sudden cardiac death in young athletes in the United States and yet we lack prospective longitudinal data providing evidence as to the best management strategy for these patients.

Despite decades of research, we still have limited understanding of the mechanisms of sudden death in these patients and there is incomplete data on risk stratification. Noninvasive functional imaging is commonly used to risk stratify these patients and emerging data from invasive cardiac catheterization with intravascular ultrasound and measurement of fractional flow reserve may be useful in a select group of patients. Myocardial bridges and acquired coronary lesions as a result of Kawasaki disease also pose management dilemmas in many patients. It is compelling to envision that common strategies to best define impairment of myocardial perfusion might be feasible also in this population, as seen in patients with anomalous aortic origin of a coronary artery.

Given controversies on risk stratification and incomplete understanding in the natural history of these conditions, the Coronary Anomalies Program was developed at Texas Children's Hospital in December 2012. This led, subsequently, to the establishment of a scientific forum to discuss coronary anomalies where speakers from several leading institutions discussed and presented updates on the diagnosis, evaluation, and management of these patients. This issue highlights lectures presented at the second Symposium on Coronary Artery Anomalies held at Texas Children's Hospital on December 4 and 5, 2014. We believe that, with the gathering and sharing of longitudinal data and experience, our knowledge will expand and we will be able to provide to patients and families evidence-based guidance and recommendations. We also believe it is essential a multidisciplinary approach to help support these patients and their families who embark in a long journey with many unknowns and stormy roads. Through continued collaboration among several experts and institutions we shall be able to achieve better understanding of outcomes in the many facets of coronary artery anomalies in children and young adults.

CONFLICT OF INTEREST

The authors have no conflicts of interest to declare

AUTHOR CONTRIBUTIONS

All the listed authors have made significant contribution in the preparation and review of the manuscript

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