To-and-fro murmur in the young due to major congenital cardiac defects: Is cardiac auscultation obsolete?

Avihu Z. Gazit  
Washington University School of Medicine in St. Louis  
Gautam K. Singh  
Washington University School of Medicine in St. Louis  
Mark C. Johnson  
Washington University School of Medicine in St. Louis

Follow this and additional works at: https://digitalcommons.wustl.edu/open_access_pubs

Please let us know how this document benefits you.

Recommended Citation
Gazit, Avihu Z.; Singh, Gautam K.; and Johnson, Mark C., "To-and-fro murmur in the young due to major congenital cardiac defects: Is cardiac auscultation obsolete?." Cardiology in the Young. 20, 6. 707-708. (2010).  
https://digitalcommons.wustl.edu/open_access_pubs/3323

This Open Access Publication is brought to you for free and open access by Digital Commons@Becker. It has been accepted for inclusion in Open Access Publications by an authorized administrator of Digital Commons@Becker. For more information, please contact vanam@wustl.edu.
Dear Sir,

Cardiac auscultation is becoming a dying clinical art. The balance between cardiac physical examination and imaging modalities in the diagnosis and delineation of congenital cardiac disease has changed significantly since the introduction of echocardiography, and more recently computed tomography, and magnetic resonance imaging, and is now leaning towards a mechanistic approach while the art of cardiac examination is losing its pivotal role.

To-and-fro murmur in the young emphasises the importance of cardiac auscultation. It comprises a low-pitched crescendo decrescendo systolic component and a decrescendo diastolic component with a short pause between the two, best heard at the mid-left parasternal border. Its presence indicates a major congenital cardiac defect and requires initiation of intensive cardiorespiratory monitoring in an intensive care unit setting as well as prompt diagnostic evaluation. The differential diagnosis must include the following major cardiac lesions: aortic-left ventricular tunnel, absent pulmonary valve syndrome, and truncus arteriosus with truncal valve incompetence. These lesions can occur in infants but have a diphasic murmur, often without the characteristic pause. The echocardiographic evaluation of children with coronary artery fistula reveals normal coronary artery anatomy. Both transthoracic and transoesophageal echocardiography reveal the aneurysmal dilatation associated with the ruptured sinus of Valsalva, the site of rupture, and the length of the diverticulum. Ventricular septal defect with aortic regurgitation is associated with a to-and-fro murmur but is rare in young children. Echocardiographic evaluation of congenital absence of the pulmonary valve permits visualisation of the anterior misaligned ventricular septal defect with overriding aorta and a

Figure 1.

Figure 2.
patent right ventricular outflow tract (in the para-
sternal short- and long-axis views). Delineation of the
stenotic pulmonary valve annulus reveals in most cases
an immobile rudimentary valve tissue. The character-

Doppler colour echocardiography shows the severity of stenosis and insufficiency of the truncal valve. Truncus arteriosus and aortopulmonary window are sometimes difficult to differentiate. The latter lesion is usually not associated with a ventricular septal defect, and the right ventricular outflow tract and pulmonary valve are usually in the expected position. Direct visualisation of an aortopulmonary window is possible using a high parasternal short-axis view.

In summary, it is not our intention to put down the importance of the state-of-the-art diagnostic modalities; however, gaining expertise in these techniques should not lead to the degeneration of our basic clinical capabilities. These continue to be a key component in planning the approach to the child with a congenital cardiac defect.

Avihu Z. Gazit
Divisions of Critical Care and Cardiology

Gautam K. Singh, Mark C. Johnson
Division of Cardiology, Department of Pediatrics
Washington University, St. Louis, Missouri
United States of America

References