

Updates in Pediatric Cardiology



East Tennessee Pediatric Cardiology P.C.

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Welcome to our First Issue!

Welcome to the first issue of "Updates in Pediatric Cardiology"! We are looking forward to using this forum to interact with you as we partner together in taking care of infants, children, teens, and young adults with cardiac concerns.

We will be addressing a number of topics in the time ahead, ranging from the seemingly (but not really) mundane, to the more

exciting and cutting edge. We hope you find this communication helpful, and would ask up front that if you have a topic of interest or an issue of concern, that you notify us.

Going green? If you prefer to receive your "Update" by e-mail, or would like to be removed from this mailing, please contact us at:

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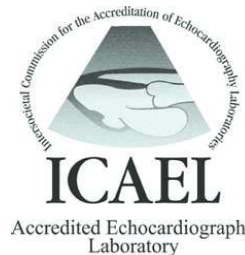
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The Clinical Evaluation of Cardiac Murmurs

A. Why are murmurs important?

More than 50% of all children will be noted to have a heart murmur at some time in their lives. These murmurs could indicate an underlying condition that could result in symptoms, a shortened life span, or even sudden cardiac death. More often, however, murmurs are innocent and as such, reassurance to the family should be the primary aim of management.

B. What are innocent murmurs?

Innocent murmurs are sounds emanating from the normal heart or normal thoracic vasculature. They may also be called "functional" or "normal" murmurs. They may become more evident during times of augmented cardiac output, such as febrile illnesses, anemia, "warm" sepsis, or hyperthyroidism. Many may be missed in early infancy if the patient is active

or fussy, and not all murmurs completely resolve as the child grows. Some adults continue to have innocent murmurs.

"The guilt or innocence of a murmur is more often than not based on other features than the murmur itself"

C. What are the characteristics of an innocent murmur?

FBI agents are trained to recognize counterfeit money by first immersing themselves in the study of normal currency. Similarly, by being knowledgeable of the features of innocent murmurs, the examiner can more confidently identify a pathologic murmur. These, then, are the 6 features of an innocent murmur:

1. Negative cardiac history: the following should be excluded:
 - a. Exertional chest pain
 - b. Unexplained syncope or near syncope, especially with exercise
 - c. Excessive exertional fatigue
 - d. Family history of premature death at age less than 50 years due to heart disease
 - e. Disability from heart disease in a close relative less than 50 years of age
 - f. Family history of inheritable cardiac conditions such as

hypertrophic cardiomyopathy, dilated cardiomyopathy, Marfan syndrome, aortic valve disease, etc.¹

2. Innocent murmurs can only be systolic ejection (“diamond shaped”, mid-systolic), or continuous; they are not holosystolic, late systolic, or diastolic.
3. Innocent murmurs are soft and not harsh.
4. Most innocent murmurs are louder when the patient is supine (venous hums and supra-clavicular bruits are exceptions.)
5. The remainder of the cardiac exam is normal, that is, there are no clicks, no rubs, no hepatomegaly, no clubbing, no edema, and there are normal pulses in the upper and lower extremities.

6. Specifically, as part of the normal exam, the second heart sound is physiologically split, that is, splits with inspiration, and closes with expiration.

To emphasize points 5 and 6, the great congenital cardiologist, Amnon Rosenthal, once stated, “the guilt or innocence of a murmur is more often than not based on other features than the murmur itself,” and, “a complete and systematic cardiovascular evaluation is essential if one is to distinguish between the pathologic and innocent murmur.”²

D. Is an EKG or echo needed in the evaluation of murmurs?

We’ll address this topic as well as specific innocent murmurs in our next issue of “Updates in Pediatric Cardiology”!

¹ Maron B, et al, Circulation, 115:1643-1655, 2007

² Rosenthal A, Ped Clin N Amer, 31:6, 1984

About East Tennessee Pediatric Cardiology

ETPC is a relatively new practice, established in 2009. We are board certified pediatric cardiologists with special expertise in cardiac imaging, fetal cardiology, and care of the patient with complex heart disease. We are pleased to partner with you in managing these patients, as well as evaluating those with chest pain, syncope, murmurs, hyperlipidemias, arrhythmias, athletes needing cardiac clearance, and others with cardiac concerns.

For patients needing testing, we offer EKG, echocardiography, and other diagnostic capabilities on site.

Ours is the only pediatric and fetal echo lab in the region that is certified by the Intersocietal Commission on the Accreditation of Echocardiogram Laboratories (ICAEL), and our doctors perform the scanning themselves in the office.

Importantly, we place a high premium on ensuring that families have a complete understanding of their child’s heart condition prior to leaving the office. We maintain inpatient privileges at East Tennessee Children’s Hospital, University of Tennessee Medical Center, St. Mary’s Medical Center, and Ft. Sanders Regional Medical Center.

Please visit our web-site at www.etpc-hearts.com for many helpful links and printable downloads, especially under “Heart Conditions” and “Condition Specific Organizations.”

If you prefer to receive your “Update” by e-mail, or would like to be removed from this mailing, please contact us at: michael.liske@etpc-hearts.com

