

Editorial comment on “A practical guideline for performing a comprehensive transthoracic echocardiogram in the congenital heart disease patient” 2022 British Society of Echocardiography

Congenital heart disease (CHD) represents a broad spectrum of conditions, from simple defects to complex ones (1). Transthoracic echocardiography (TTE) is the first-line imaging tool in the diagnosis (2). Since congenital echocardiography is a highly operator-dependent assessment, guidance is needed for technical image acquisition and interpretative reporting skills. Therefore, there have been previous reports on this issue (3-8). In 2022, British Society of Echocardiography also has published a consensus document on congenital echocardiography - “A practical guideline for performing a comprehensive transthoracic echocardiogram in the congenital heart disease patient” (9). This document is somewhat different from the previous guidelines, since it targets details which the other guidelines have limitations. In this editorial, we would like to give you a brief understanding of this guideline.

The guideline covers several key aspects of the TTE examination of CHD patients. Detailing the echocardiographic cardiovascular anatomy in CHD patients in a systematic way is the main topic. During patient preparation, it is strongly recommended to record height, weight (body surface area), heart rate/electrocardiogram, oxygen saturation and blood pressure details in order to maximize sizing, function and hemodynamic quantification. A complete echocardiographic sequential segmental analysis is suggested. To ensure this anatomical and functional sequential segmental CHD TTE study, there are steps to be followed. Systematic evaluation steps are given in details as figures in this paper including echocardiographic images, technical pictures and tables. Subcostal imaging is initially recommended to see the atrial arrangement from the abdominal visceral situs. After the situs positioning, second step is to define the cardiac position and the apex. This paper suggests us simpler descriptions for cardiac position and the apex including left-sided, right-sided, midline alongside a leftward, rightward, or midline apex. The third step is suggested as to examine the atrioventricular connection, the respective valve morphology and ventriculoarterial connection, the respective great artery morphology.

The guideline also emphasizes the importance of obtaining

high-quality images with appropriate image optimization. Problems associated with image quality such as patient size, chest shape malformations, bespoke positioning of surgical baffles/conduits and/or significant surgical scarring can be overcome by image optimization. Sufficient time for image interpretation and reporting should be reserved for each CHD patient. However, the readers are referred to another paper for a detailed knowledge on image optimization (10).

Considerations for patients with complex anatomy or previous surgical interventions are also encountered in this guideline with small hints. It is supplemented by a series of practical pathology specific congenital echocardiography guidelines. The guideline offers some hints on specific situations including the systemic right ventricle; unrepaired univentricular physiology and Fontan palliations, atrioventricular anomalies, shunts, cardiac surgery.

In summary, this guideline emphasizes the importance of obtaining high-quality images and performing a systematic evaluation to accurately diagnose and assess the severity of CHD. It is a practical resource for echocardiographers rather than a duplicate of aforementioned guidelines.

However, since this guideline targets focusing on the details that are not included in the other guidelines; supporting this knowledge with the preceding data will give us a thorough understanding of CHD.

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