AEPC-AHA-JSPCCS Joint Symposium

AEPC-AHA-JSPCCS-TSPC Joint Symposium (I-AJS)

New applications of cardiovascular magnetic resonance in pediatric cardiology

Chair:Satoshi Yasukochi(Heart Center, Nagano Children's Hospital, Japan)
Chair:Brandley S. Marino(President of VDY, AHA)
Chair:Gurleen Sharland(President of AEPC)
Fri. Jul 7, 2017 1:00 PM - 2:30 PM ROOM 3 (Exhibition and Event Hall Room 3)

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[I-AJS-03]Advanced applications of CMR for understanding pathophysiology in CHD – The Senning Model

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The Senning or Mustard procedure for repair of transposition of the great arteries (TGA) results in a right ventricle (RV) sustaining the systemic circulation,as well as in extensive suture lines at the level of the atrial baffles, which may lead to an abnormal atrial function and to arrhythmias. During longterm follow up RV function and occurrence of arrhythmias are the ultimate predictors of outcome.Patients with TGA after atrial repair with the Sessing or Mustard procedure represent a good model for studying complex pathophysiology in CHD, such as the systemic RV and an abnormal preload due to alterated atrial geometry and elasticity. CMR, by combining sequences, is the ideal tool for studying such complex pathophysiology in the same examination and " in vivo".

In this lecture different studies using CMR for assessing Senning patients are presented. Some studies have demonstrated that the function of the atrial baffles, and therefore preload conditions are abnormal. This was already indirectly postulated by comparing stress response in Senning versus in ccTGA patients. The direct CMR measurements of the baffle function confirm this hypothesis. Advanced imaging of the RV function may help to describe the peculiar RV adaptation to the abnormal physiologic condition, and detect early RV dysfunction. CMR feature tracking helps to understand the myocardial mechanics of the systemic RV and of the subpulmonary LV.

These and more data from the literature will be discussed in a global context for understanding the pathophysiology in patients after the Senning repair for TGA.