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Improving Imaging Practices Following Arterial Switch Operation

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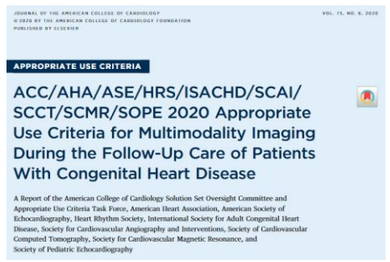
IMPROVING IMAGING PRACTICES FOLLOWING ARTERIAL SWITCH OPERATION

Utilization of advanced imaging following cardiac surgery can improve long-term outcomes

Mollie Walton, MD; Nir Atlas, MD; Sanket Shah, MD

Children's Mercy Kansas City

INTRODUCTION



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APPROPRIATE USE CRITERIA

ACC/AHA/ASE/HRS/ISACHD/SCAI/SCCT/SCMR/SOPE 2020 Appropriate Use Criteria for Multimodality Imaging During the Follow-Up Care of Patients With Congenital Heart Disease

A Report of the American College of Cardiology Solution Set Oversight Committee and Appropriate Use Criteria Task Force, American Heart Association, American Society of Echocardiography, Heart Rhythm Society, International Society for Adult Congenital Heart Disease, Society for Cardiovascular Angiography and Interventions, Society of Cardiovascular Computed Tomography, Society for Cardiovascular Magnetic Resonance, and Society of Pediatric Echocardiography

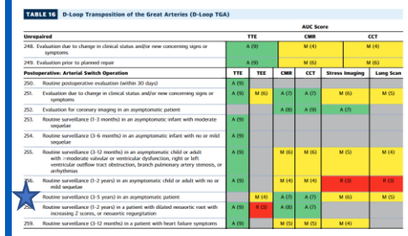
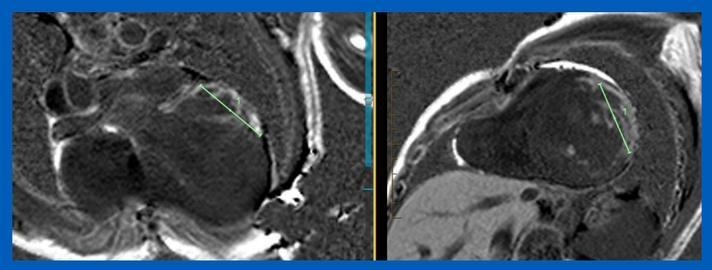


TABLE 16 D-Loop Transposition of the Great Arteries (D-Loop TGA)

	AUC Score					
Unrepaired	**TTE**		**CMR**		**CCT**	
248. Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)		M (4)		M (4)	
249. Evaluation prior to planned repair	A (9)		M (6)		M (6)	
Postoperative: Arterial Switch Operation	**TTE**	**TEE**	**CMR**	**CCT**	**Stress Imaging**	**Lung Scan**
250. Routine postoperative evaluation (within 30 days)	A (9)					
251. Evaluation due to change in clinical status and/or new concerning signs or symptoms	A (9)	M (6)	A (7)	A (7)	M (6)	M (5)
252. Evaluation for coronary imaging in an asymptomatic patient			A (8)	A (9)	A (7)	
253. Routine surveillance (1-2 months) in an asymptomatic infant with moderate sequelae	A (9)					
254. Routine surveillance (1-6 months) in an asymptomatic infant with no or mild sequelae	A (9)					
255. Routine surveillance (1-12 months) in an asymptomatic child or adult with ≥moderate valvular or ventricular dysfunction, right or left ventricular outflow tract obstruction, branch pulmonary artery stenosis, or arrhythmias	A (9)		M (6)	M (6)	M (5)	M (4)
256. Routine surveillance (1-2 years) in an asymptomatic child or adult with no or mild sequelae	A (9)		M (4)	M (4)	R (3)	R (3)
257. Routine surveillance (3-5 years) in an asymptomatic patient		M (4)	A (7)	A (7)	M (6)	M (5)
258. Routine surveillance (1-2 years) in a patient with dilated neoaortic root with increasing Z scores, or neoaortic regurgitation	A (9)	R (3)	A (8)	A (7)		
259. Routine surveillance (1-12 months) in a patient with heart failure symptoms	A (9)		M (5)	M (5)	M (4)	

- Appropriate use guidelines for advanced imaging in the follow-up of cardiac were published in 2020
- Recommends advanced cardiac imaging (CT or MRI) 3-5 years following arterial switch operation (ASO) for D-Looped Transposition of the Great Arteries (TGA) in asymptomatic patients
- Our goal: Assess and improve our clinical practice alignment with the guidelines

- 3D CT reconstruction of aorta and coronary arteries, s/p ASO
- Demonstrates a missing circumflex artery, which was previously shown to originate from the right coronary artery pre-ASO



- MRI images following cardiac arrest in a s/p ASO patient
- Demonstrates delayed gadolinium enhancement (green) in the left coronary artery and circumflex artery territory

METHODS

- Single-center, retrospective chart review was performed to establish baseline
- Reviewed ASOs (n=110) performed from 2000-2015
- Approximately 25% patients received appropriate surveillance per guidelines

INTERVENTION

- Increase provider awareness of recommendations
- Implement reminder alert in electronic medical record when time to order
- Re-assess utilization rates one year after intervention

NEXT STEPS

- Optimize utilization of advanced imaging in follow-up of other conotruncal defects

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