Interventions in Adult Congenital Heart Disease: The Role of Echo
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DISCLOSURES

- I have no disclosures relevant to today’s talk
Why should all echocardiographers know/care about congenital heart disease?

Pediatric patients

Adult patients

1965

1985

2005

700,000

1,000,000

Role of echo in ACHD interventions

- Transthoracic echocardiography
- Transesophageal echocardiography
- Intracardiac echocardiography
Atrial Septal Defects

- Percutaneous intervention recommended for secundum atrial septal defects with adequate tissue rims
- Percutaneous intervention for patent foramen ovale in special circumstances
- Surgical intervention indicated for sinus venosus defects, coronary sinus defects, and primum defects
Amplatzer Device

The Septal Occluder

Device
Cardioseal Device
Helex Device
Potential Complications

- Device migration
- Erosion
  - Aorta
  - Atrium
- Atrial arrhythmias
Transcatheter Pulmonary (Melody) Valve
Store in progress
No R Trig

63dB S1/ 0/1/4
Gain= 2dB Δ=3

10F10 84Hz
8.5MHz 60mm
Intracardiac
General
Other Potential Interventions

- Coil Occlusions
  - PDA
  - Coronary fistulas
  - Collaterals (veno-veno, veno-arterial, veno-atrial)

- Coarctation Stenting
  - Native coarctation
  - Re-coarctation
  - Pseudoaneurysm (covered stent)

- Baffle Interventions (D-transposition patients)
  - Stenting
  - Occlusion of leaks

- Fenestration closure
  - Fontan/Single ventricle patients
Recommendations for Interventional and Surgical Treatment of Coarctation of the Aorta in Adults

- In native coarctation with appropriate anatomy, stenting has become the treatment of first choice in adults in many centers.
- Whether to use covered or bare metal stents is unresolved.

ACC/AHA 2008 Guidelines for the Management of Adults With Congenital Heart Disease

Canadian Cardiovascular Society 2009 Consensus Conference on the management of adults with congenital heart disease: Outflow tract obstruction, coarctation of the aorta, tetralogy of Fallot, Ebstein anomaly and Marfan’s syndrome

ESC Guidelines for the management of grown-up congenital heart disease 2010. The Task Force on the Management of Grown-up Congenital Heart Disease of the European Society of Cardiology (ESC). Endorsed by the Association for European Pediatric Cardiology (AEPC)
e-PTFE Covered NuMED CP Stent & BIB Catheter

- Polytetrafluoroethylene (PTFE) covering, Platinium-Iridium welded stent in a zig pattern, with gold to increase strength.
- It can expand from 12–24 mm.
- Zigs represent the repeating patterns in a row. With the 8 Zig, the diameter is 24 mm with ~25% shortening.
- Each Zig height is 5.5 mm, so the lengths of the stent are 22 (4), 28 (5), 34 (6), 39 (7), and 45 (8) mm.
- Usually only 8 Zig designs are used in order to keep expansion to 24 mm.
- Approved worldwide, except in the US.
- IDE trials in progress.
Native Coarctation
Severe CoA: IVUS
Post Angio: Covered Stent
Post CCPS IVUS
THANK YOU