CHD Clinical Practice Algorithm: Repaired Coarctation Algorithm < 1 Year

Inclusion Criteria:
• Isolated CoA ± BAV
• Age of surgery < 1 y

Exclusion Criteria:
• Complex arch repair
• ≥ Moderate AoV disease

First post-discharge visit at 1 month

1-mo visit:
• Clinic visit
• UE/LE BPs
• Echo

Cuff BP gradient ≥ 20 mm Hg,
Arch mean systolic gradient > 20 mm Hg or decreased LVEF

Follow-up every 1-3 m with UE/LE BPs, echo, ± ECG

Increased BP gradient, echo gradient or decreased, LV EF?

Yes

Consider further evaluation (CMR/CCT or cath) and/or intervention

No

Follow-up based on algorithm for 1-18 y of age
CHD Clinical Practice Algorithm: Repaired Coarctation Algorithm 1-18 Years of Age

Inclusion Criteria:
- Isolated CoA ± BAV
- Age 1-18 y

Exclusion Criteria:
- Complex arch repair
- ≥ Moderate AoV disease
- Pregnancy

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Routine Follow-Up Visits
- UE/LE BPs
- ECG
- Echo
- CV risk assessment and counseling (HTN, obesity, dyslipidemia)

Follow-up: 1 mo post-op, then:
- Every 6-12 mo (toddler, <1 y postop)
- Every 1-2 y (older child, ≤ mild residual)

Additional Testing
- ABPM every 1-2 y (when available)
- CPET every 2-3 y (pts >age 10 y, exertional symptoms, athletes)
- CMR/CCT baseline as teenager, then every 3-5 y

Any of the following present?

- Symptomatic
- Resting HTN
- UE vs. LE BP gradient >20 mm Hg
- Echo Doppler: mean systolic gradient >20 mm Hg or obstructive pattern
- LVH
- Decreased LV function
- Exaggerated BP response to exercise (>50-80 mm Hg change above resting)
- Anatomical evidence of significant recoarctation

Optimize medical management, obtain CMR/CCT, or consider intervention
CHD Clinical Practice Algorithm: Repaired Coarctation Algorithm ≥18 Years of Age

**Inclusion Criteria:**
- Isolated CoA ± BAV
- Age > 18 y

**Exclusion Criteria:**
- Complex arch repair
- ≥ Moderate AoV
- Pregnancy

**Repaired CoA**
(≥18 y)

**Initial Standard Workup**
- UE/LE BP
- ECG
- Echo
- Consider cardiopulmonary stress test (CPET)
- CMR vs. CCT
  *Consider at baseline if limited echo images and/or concerns of recurrent CoA
- Consider ABPM
  *Diagnostic if 24-h mean SBP > 130 mm Hg and/or DBP > 80 mm Hg
- Consider screening for cerebral aneurysm

**Follow-up Schedule:**
- Every 1-2 y: Visit, ECG, echo, consider ABPM
- Every 2-3 y: CPET
- Every 3-5 y: CMR/CCT

**Abnormal Findings:**
- Resting NIBP gradient > 20 mm Hg or decreased femoral pulses
  - Abnormal ABPM

- Yes
- No

**Conservative/Medical Management**

**Additional Abnormal Findings?**
- Mean Doppler systolic gradient > 20 mm Hg
- NIBP gradient > 10 mm Hg or mean Doppler gradient > 10 mm Hg, plus either decreased LV systolic function or AI
- Resting NIBP gradient > 10 mm Hg or mean Doppler gradient > 10 mm Hg, with collateral flow
- Narrowing > 50% relative to aortic diameter at level of diaphragm

- Yes
- No

**Intervention:**
- Catheter based, when feasible
- Surgical
<table>
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<tr>
<th>Abbreviation Key</th>
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<td>ABPM = ambulatory blood pressure monitor; Ai = aortic insufficiency; AoV = aortic valve; BAV = bicuspid aortic valve; BP = blood pressure; cath = catheterization; CCT = cardiac computed tomography; CHD = congenital heart disease; CMR = cardiac magnetic resonance; CoA = coarctation of the aorta; CPET = cardiopulmonary exercise testing; CV = cardiovascular; DBP = diastolic blood pressure; ECG = electrocardiography; echo = echocardiography; HTN = hypertension; LE = lower-extremity; LV = left ventricular; LVEF = left ventricular ejection fraction; LVH = left ventricular hypertrophy; NIBP = noninvasive blood pressure; postop = postoperative; pts = patients; SBP = systolic blood pressure; UE = upper-extremity.</td>
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References


