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**INTERPRETING ECHO REPORTS: MISSED DIAGNOSES ON
ECHOCARDIOGRAM**

BACKGROUND: It is not uncommon for us Pediatric Cardiologists to come across several reports in a single day of echocardiograms done by adult cardiologists carry incorrect or incomplete diagnoses. Even Adult Cardiologists now accept that Pediatric Cardiology is a different field and their echocardiograms need to be confirmed. Hardly any Pediatric Cardiac Surgeon would take a patient up for surgery unless the patient has been evaluated by their Pediatric Cardiologist.

FACTS ABOUT ECHOCARDIOGRAPHY:

- Many units have a default pre-formatted structure to their echo reports; so even if an echocardiographer has NOT evaluated a particular structure(eg. Pulmonary veins, arch of aorta), the report could still read as having normal pulmonary veins. **So, don't necessarily change your clinical opinion on the basis of the echo report alone.**
- Even if they have evaluated the mentioned structures, there may be one more issue: **has the evaluation been done with a Pediatric Probe ?** If the evaluation has not been done with a Pediatric probe (especially for a newborn) then the images are going to be suboptimal and again the diagnosis cannot be made.

**CARDIAC STRUCTURES REQUIRING SPECIAL ATTENTION DURING
ECHOCARDIOGRAPHY:**

1. **ARCH OF AORTA:** Unless someone specially looks at the arch proactively, it is unlikely that coarctation diagnosis on echocardiogram may be made. For this reason, one has to specifically ask the echocardiographer whether the arch has been evaluated.
2. **PULMONARY VEINS:** One of the most often missed diagnosis involves abnormalities of the pulmonary veins. These are not only difficult to evaluate but need special probes which adult cardiologists may not have.

- 3. CORONARY ARTERIES:** These are difficult to evaluate and require not only special equipment (Pediatric Probe) but also require a hand skill i.e. training and experience. So, diagnoses like Kawasaki involvement of Coronary, Anomalous Left Coronary Artery from Pulmonary Artery (ALCAPA) may not be made when they are present.

MISSED DIAGNOSES IN PEDIATRIC ECHOCARDIOGRAPHY

1. **Coarctation of Aorta:**
 - a. Isolated Coarctation of Aorta or
 - b. In Association with other lesions
 - i. **Ventricular Septal Defect** most commonly presents as
 1. **Intractable CHF** or
 2. **CHF in 1st few weeks of life.**
2. **Dilated Cardiomyopathy:** when an echocardiogram report says Dilated Cardiomyopathy, what are the differentials which could have been missed on an echocardiogram unless looked for proactively:
 - a. **Coarctation of Aorta:** The LV function could have decreased significantly to a point that the LV is dilated with poor function. Arch in this case will not show any gradient because the function is poor. **The only way to diagnose coarctation of aorta with poor LV function on echocardiogram would be to assess the anatomy on 2-D. The Doppler MAY NOT show the required gradient to diagnose CoA.**
 - b. **Aortic Stenosis:** As in CoA, similarly, AS may show a poorly functioning Ventricle. It may not be able to generate adequate gradient across the aortic valve to diagnose the condition on Doppler. Similar to CoA, the **diagnosis of AS with poor LV function is made by assessing the valve Anatomy and leaflet mobility on 2-D echo.**
 - c. **ALCAPA:** Anomalous Left Coronary Artery from Pulmonary Artery results in an abnormal stealing of blood from the Coronary artery into Pulmonary Artery (since the pulmonary pressures are lower). This results in the LV function becoming weak resulting in **the mistaken diagnosis of dilated cardiomyopathy.**

Since the above 3 mentioned causes are all correctable and completely reversible, it is extremely important that whenever LV dysfunction is seen, these causes be ruled out.