

# SEVERE COARCTATION OF THE AORTA: A DELAYED DIAGNOSIS

Barrie Kaiser, MD, Taylor Couch, MD, Kyle Bielefeld, MD.

Department of Pediatrics, University of Oklahoma School of Community Medicine, Tulsa, OK

## INTRODUCTION

- Systolic heart murmurs are a common finding during pediatric physical exams.
- It is important to differentiate a benign versus pathologic heart murmur.
- There are pertinent physical exam findings that can be used to help identify a pathologic heart murmur.
- Coarctation of the aorta (CoA) accounts for 6–8% of all congenital heart disease.

## CASE PRESENTATION

- 10 year old male presented to a pediatric clinic with an acute viral illness and was found to have a systolic heart murmur.
- After recovering from the viral illness patient returned to clinic to have murmur reassessed.
- Murmur was first noted at patient's 2 year well child exam, but patient was then lost to follow up for 7 years.

## CASE DESCRIPTION

### PHYSICAL EXAM

- Hypertensive 130/82
- III/VI systolic heart murmur heard best at the left upper sternal border with radiation throughout the chest.
- No palpable femoral or lower extremity pulses
- Pallor of the lower extremity nail beds

### DIFFERENTIAL DIAGNOSIS

- Benign heart murmur, ASD, VSD, Aortic stenosis, pulmonary artery stenosis, and coarctation of the aorta

### TESTS

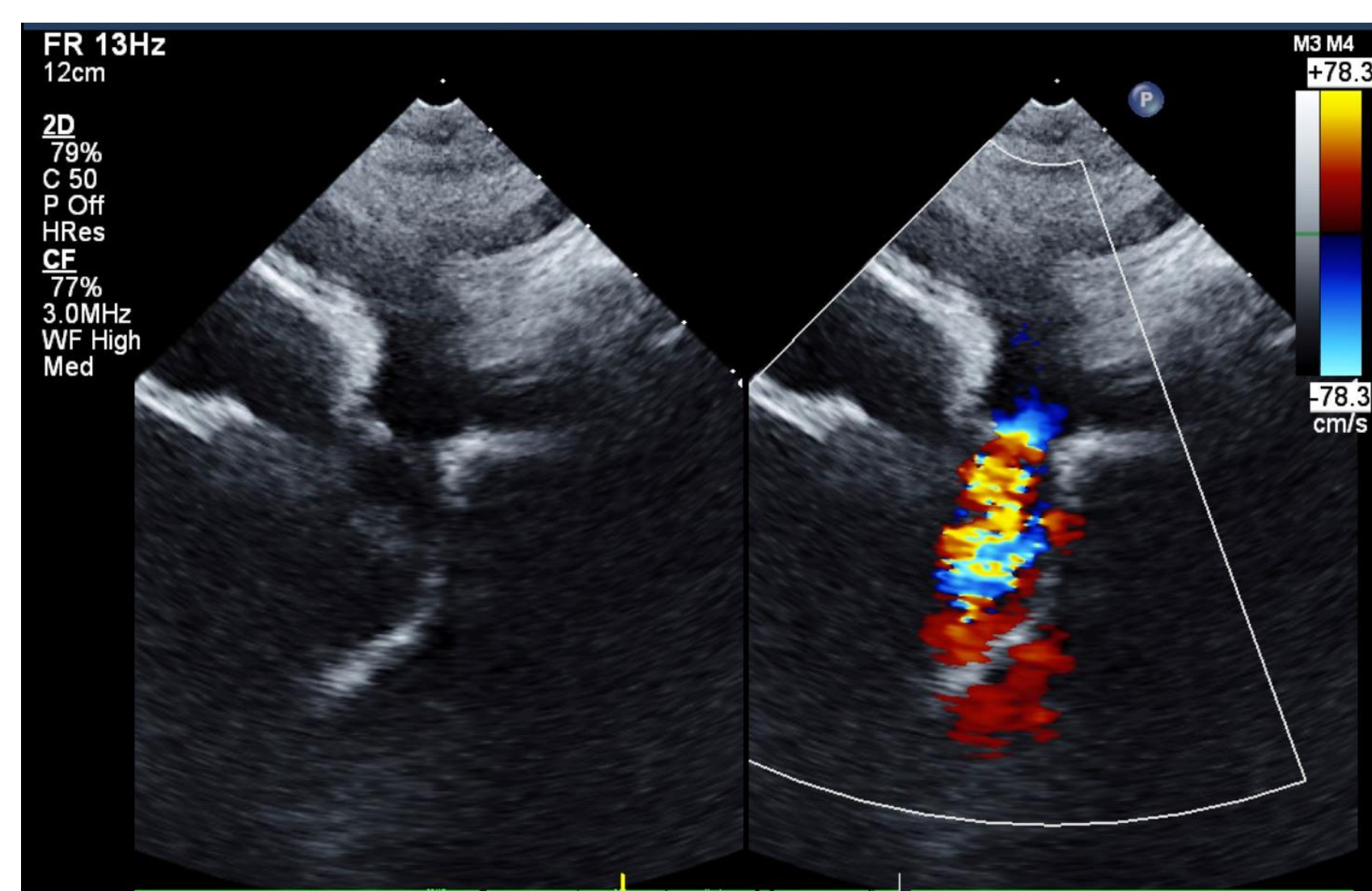


Image 1. Echocardiogram demonstrating high velocity flow through the aorta.

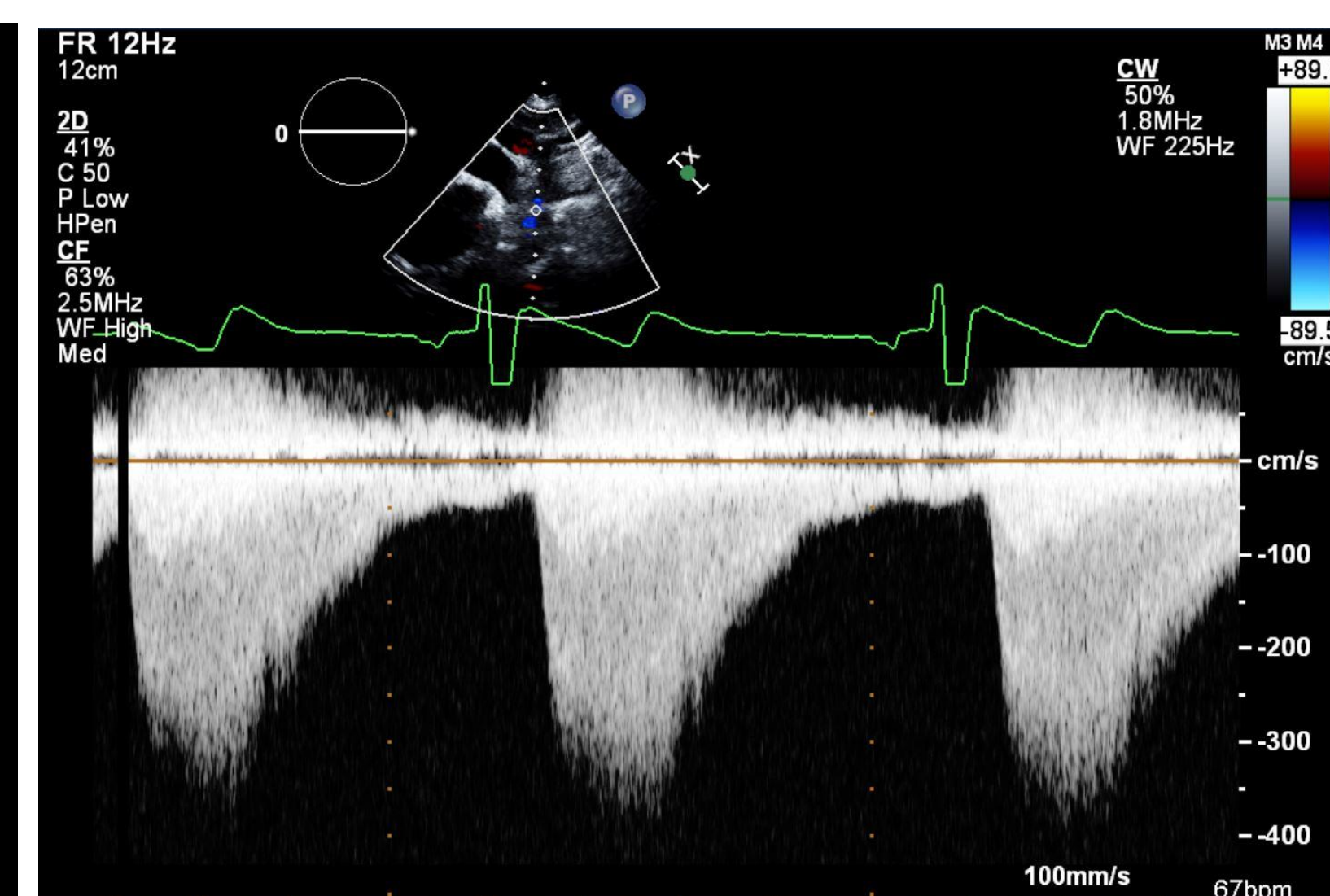


Image 2. Echocardiogram with Doppler consistent with CoA.

### FINAL DIAGNOSIS

- Severe CoA with bicuspid aortic valve with aortic root dilatation.

### TREATMENT

- Immediately started on beta blocker for aortic root dilation.
- Catheterization and placement of EV3 IntraStent LD Max 18-26 stent inflated to 14 mm.

## DISCUSSION & REVIEW

- Early diagnosis and treatment of CoA is crucial, as mean age of death in untreated CoA is 34 years old.
- Any heart murmur that does not completely disappear with Valsalva maneuver requires further work up.
- In the setting of a pediatric heart murmur upper and lower extremity pulses should be palpated.

## CONCLUSION

Incidence of CoA is 4 out of every 10,000 births. Patients will often present with a systolic heart murmur that radiates to the scapula accompanied by delayed or absent lower extremity pulses. Early diagnosis and intervention is crucial to improving long-term outcomes.

## REFERENCES

Adams FH, Emmanouilides GC, Moss AJ. *Heart Disease in Infants, Children, and Adolescents: Including the Fetus and Young Adult*. 9th ed. Baltimore: Williams & Wilkins; 2016.

Kirby RS. The Prevalence of Selected Major Birth Defects in the United States. *Seminars in Perinatology*. 2017;41(6): 338–344.

Van der Linde D, Konings EE, Slager MA, Witsenburg M, Helbing WA, Takkenberg JJ, Roos-Hesselink JW. Birth Prevalence of Congenital Heart Disease Worldwide: A Systematic Review and Meta-analysis. *Journal of the American College of Cardiology*. 2011;58(21): 2241–2247.