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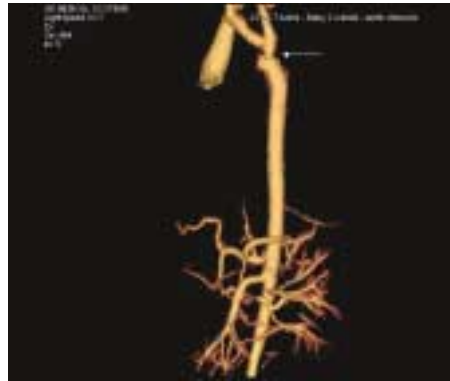
# CT Clinical Case Study CT Angiography Pediatric – Congenital Aortic Isthmus Stenosis

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**Figure 1**  
Reformatted volume rendering view demonstrating aortic isthmus stenosis.



**Figure 2**  
Reformatted oblique MIP image.



**Figure 3**  
Angiographic view demonstrating aortic isthmus stenosis.

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### Patient History

A 14-day-old male patient presented with a history of blood pressure differences in the upper and lower extremities (an increase in upper extremity blood pressure and a decrease in lower extremity blood pressure). Because of this difference in blood pressure, the patient had an ultrasound exam to try to determine the cause of the blood pressure difference. The ultrasound exam demonstrated hypertrophy of the left ventricle. Due to the age of the patient and the risks associated with a conventional angiography exam, the patient had a CT Angiography (CTA) exam to determine the cause of the left ventricular hypertrophy.

### Exam Protocol:

Scanner:	Lightspeed VCT
Scan Type:	Helical
Rotation Speed:	0.4 Seconds
Detector Configuration:	64 x 0.625
Slice Thickness:	0.625mm
Pitch:	1.375:1
SFOV :	32cm
kVp:	100
mAs:	66
Total Scan Time:	1.4 Seconds
Coverage:	18.3cm

### Contrast Injection Parameters:

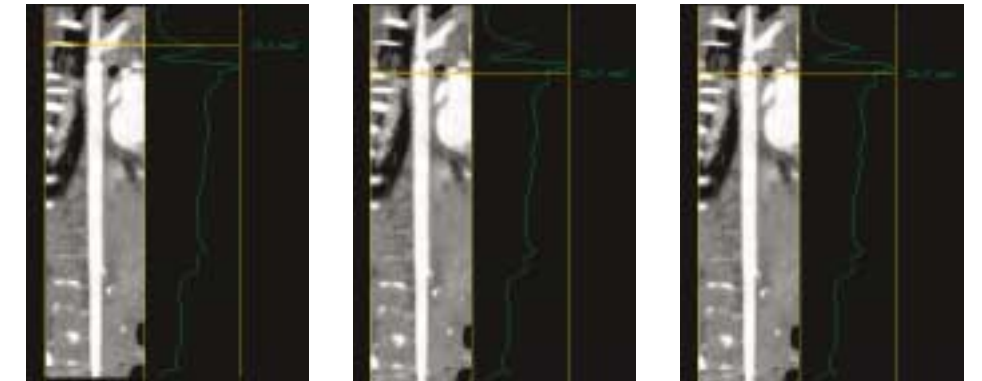
Dual-Phase Injection:

- Prep Delay = SmartPrep in Aorta = 14 Seconds
- 7 ml of contrast at .8cc/sec.  
+ 10 ml of saline at .8cc/sec.

Contrast Type: 300mg I/ml



**Figure 4**  
Axial image with vessel analysis diameter measurements.



**Figure 5**  
Curved view demonstrating Left Anterior Descending (LAD) stent and Left Main (LM) coronary artery plaque.

### Clinical Findings

The CTA exam demonstrated a congenital defect of the great vessel just below the left subclavian artery called an aortic isthmus stenosis which was ~70 percent Stenosed. This stenosis was ultimately determined to be the cause of the left ventricular hypertrophy and the increase in blood pressure in the upper extremities and the decrease blood pressure in the lower extremities.

The patient was subsequently taken to surgery to repair the congenital defect and recovered nicely and was discharged from the hospital.