

Case Study 9: Abdominal Aorta

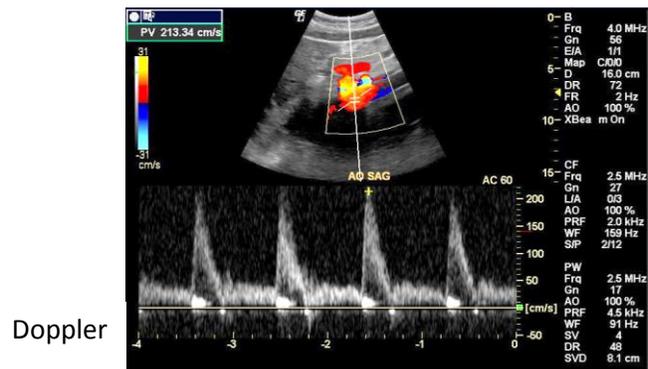
Concern: 31-year-old male, acute abdominal pain after eating. Fasting and non-fasting AO exams were performed. No major change was noted between fasting and non-fasting. The suggested guideline for evaluating the Aorta is Diameter > 3cm, or > 2X change in diameter, or >3X change in velocity places the Aorta in the severe category. Patient is normal by criteria in vascular ultrasound exam. However, it is very difficult to measure diameter of a 3D object on a 2D longitudinal view. *Visualize:Vascular* uses slices through the 3D object and then reconstructs 3D to take a true 3D measurements. The patient was further evaluated with CTA to verify the results. CTA and *Visualize* place in the severe category.

Summary:

	Duplex Ultrasound	<i>Visualize: Vascular™</i>	CTA
Results	Change in Diam < 2X Diameter < 3 cm Change in Velocity < 3X	> 2X Change in Diameter	> 2X Change in Diameter
Category	Normal	Severe	Severe

Duplex Exam:

	Duplex Results (PSV/EVD cm/sec)
Prox AO	165/20
Mid AO	213/50
Distal AO	126/30
Mid AO Diameter	Max: 1.6 cm Min: 1.1 cm

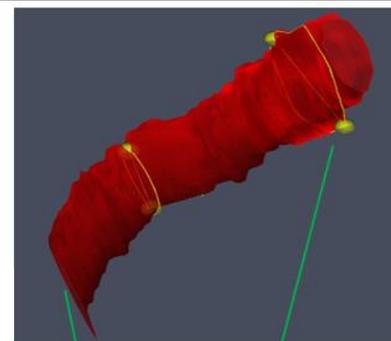


Doppler

***Visualize:Vascular™* 3D Rendering Exam:**

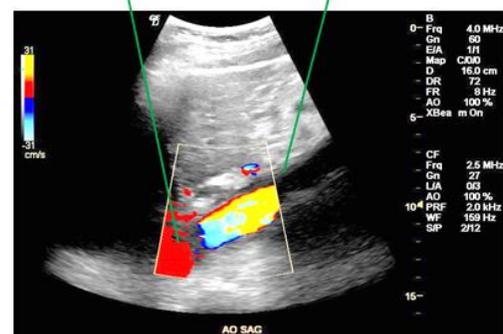
	<i>Visualize:Vascular™</i> Results
Change in diameter	54% reduction in diameter presence of plaque

3D Rendering



Visualize renders the residual lumen in 3D and measures the maximal and minimal diameters 360 degrees around the center point to calculate luminal reduction. Max and min diameters were found to be 1.24 and .56 cm, which is a greater than 2X reduction in diameter. The yellow rings show the min and max locations on the 3D Rendering.

Color Flow



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Comparison to CTA:

A CTA of the abdominal aorta was performed. CT measurements found the maximal diameter to be 1.251 cm and the minimal diameter 0.571 cm which confirmed measurements made with *Visualize:Vascular*.

Visualize:Vascular results:

1/1

Visualize: Vascular Report

Patient Name	Aorta 1	Exam Date	2/26/2015
MRN		Accession Number	-
DOB (Age)	8/5/1983 (31 years)	Exam Type	76377 3D Reconstruction
Sex	Male	Report Author	Administrator
Date Reported	6/16/2015		

Aorta
Vessel Segment: Transverse - AO 3D Reconstruction

3D #1



Vessel Segment: Transverse - AO **Suplimentary Information**

Min Frame 32Max Frame 34



Luminal diameter: Min 5.686, Max 12.446 mm
Luminal reduction: 54% *