Repair of asymmetric aortic root aneurysm

ONASSIS CARDIAC SURGERY CENTER

G T Stavridis MD FETCS

Age.: 41 male h: 183 cm w: 84 kgr.
Exam. date: 15/06/2017
Clinical information: ASYMPTOMATIC, WEIGHT TRAINING

TTE

	Normal	Actual		Normal	Actual
A. Root	20 - 38 mm	**52**	EDD LV	36 - 56 mm	**48**
LA	19 - 39 mm	**35**	ESD LV	25 - 37 mm	
RVOT	7 - 25 mm				
IVS	7 - 11 mm		EF LV (BIPLANE)	> 55 %	**65**
Post. W	7 - 11 mm				

Doppler			
Mitral	Em: 0 m/sec	Am: m/sec	DTE: msec
Aortic	Max Vel: m/sec		
Tricuspid	PASP: mmHg	PA Max Vel: m/sec	

Aortic sinus Valsalva: 52mm enlarged non cor.sinus

Sinotubular junction : 40mm.

Asc Aorta : 42mm

Arch: normal 23mm

Aortic valve : tricuspid valve

Mitral valve: normal , prolapsing

Doppler study:

No A. Regurgitation .

Mild Mitral regurgitation

Repair of asymmetric aortic root aneurysm

Gender differences in aortic root dimensions

Aortic Root	Absolute Values (mm)		p	Indexed Values (mm/m^2)		p
	Men	Women		Men	Women	
Annulus						
Mean	21.0 ± 2.2	18.7 ± 1.6	0.0001	10.9 ± 1.3	11.2 ± 1.1	0.0001
25th	19.2	18.0		10.0	10.5	
Median	21.0	19.0		10.8	11.2	
75th	22.0	20.0		11.7	11.9	
Sinuses of Valsalva						
Mean	31.8 ± 3.7	28.5 ± 3.0	0.0001	16.5 ± 2.2	17.1 ± 2.1	0.0001
25th	29.0	26.0		15.1	15.7	
Median	32.0	28.0		16.3	17.1	
75th	34.0	31.0		17.8	18.3	
Sinotubular junction						
Mean	26.9 ± 3.7	24.4 ± 2.9	0.0001	14.0 ± 2.1	14.6 ± 1.9	0.0001
25th	24.0	22.0		12.5	13.4	
Median	27.0	24.0		13.8	14.6	
75th	29.0	26.0		15.2	15.8	
Proximal ascending aorta						
Mean	29.1 ± 4.3	27.4 ± 3.4	0.0001	15.1 ± 2.5	16.5 ± 2.1	0.0001
25th	26.0	25.0		13.5	15.1	
Median	29.0	27.7		15.0	16.5	
75th	32.0	30.0		16.6	17.8	

Data are presented as mean ± SD and median and twenty-fifth and seventy-fifth percentiles. p Values indicate the difference between gender.

Normal Values of Aortic Root Dimensions in Healthy Adults

Olga Vriz, MD[a], Victor Aboyans, MD, PhD[b], Antonello D'Andrea, MD, PhD[c], Francesco Ferrara, MD, PhD[d], Edvige Acri, MD[e], Giuseppe Limongelli, MD, PhD[c], Alessandro Della Corte, MD, PhD[f], Caterina Driussi, MD[g], Manola Bettio, MD[a], Francesca R. Pluchinotta, MD[b], Rodolfo Citro, MD[d], Maria Giovanna Russo, MD, PhD[c], Eric Isselbacher, MD[i], and Eduardo Bossone, MD, PhD[d,*]

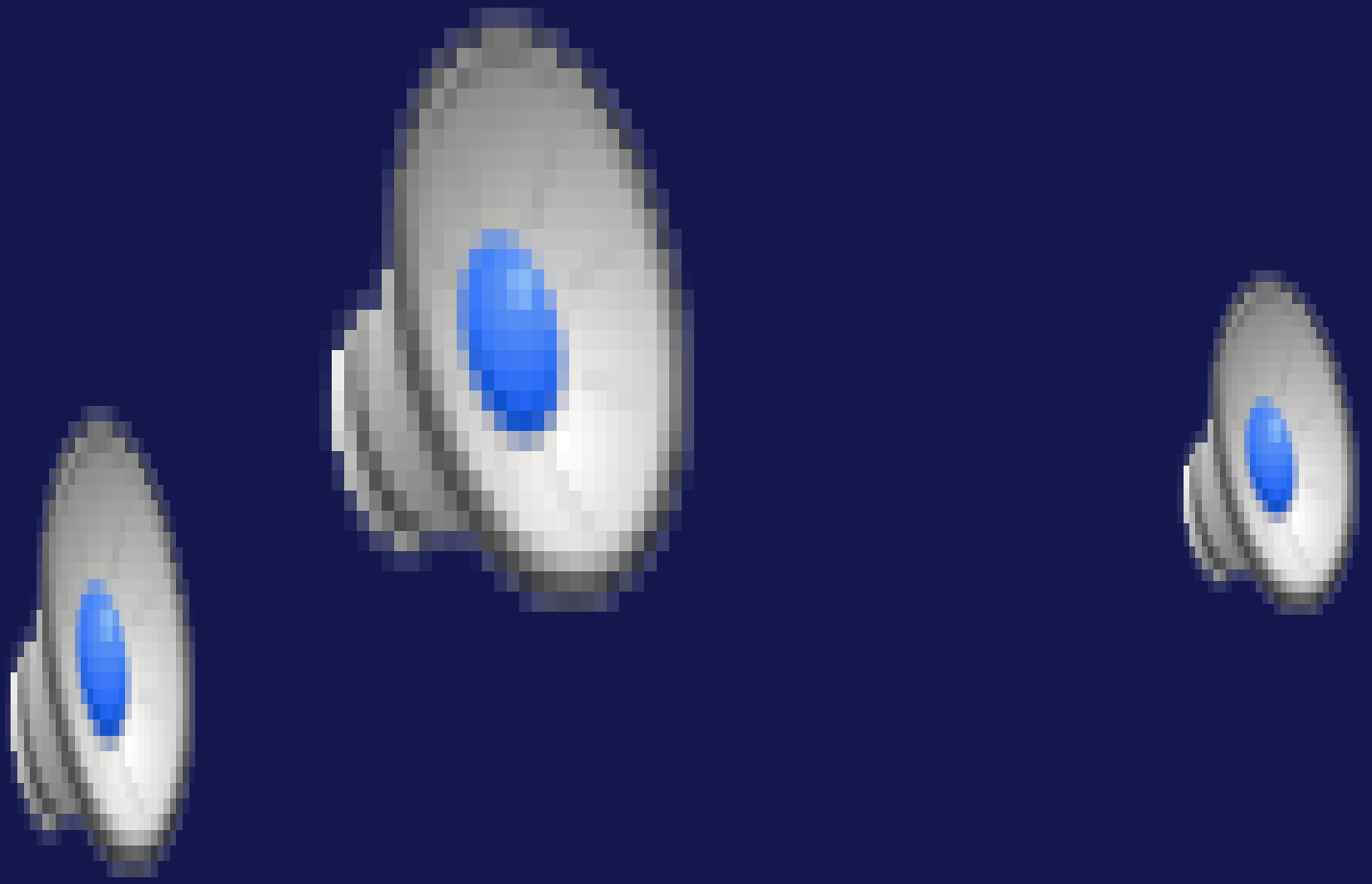
The reported ranges of aortic root (AR) diameters are limited by small sample size, different measurement sites, and heterogeneous cohorts. The aim of this study was to explore the full spectrum of AR diameters by 2-dimensional transthoracic color Doppler echocardiography (TTE) in a large cohort of healthy adults. From June 2007 to December 2013, a total of 1,043 Caucasian healthy volunteers (mean age 44.7 ± 15.9 years, range 16 to 92 years, 503 men [48%]) underwent comprehensive TTE. TTE measurements of the AR were made at end-diastole in parasternal long-axis views at 4 levels: (1) annulus, (2) sinuses of Valsalva, (3) sinotubular junction, and (4) proximal ascending aorta. The absolute aortic diameters were significantly greater in men than in women at all levels, whereas body surface area–indexed aortic diameters were greater in women ($p = 0.0001$). No significant gender differences were registered for sinuses of Valsalva and sinotubular junction to annulus diameter ratios ($p = 0.9$), whereas ascending aorta to annulus diameter ratio was higher in women ($p = 0.0001$). There was a straight correlation between aortic diameters (absolute and indexed values), their ratios, and age in both genders ($p = 0.0001$). In conclusion, we provide the full range of AR diameters by TTE. Knowledge of upper physiological limits of aortic dimensions is mandatory to detect aorta dilatation, follow up the disease over time, and plan appropriate therapeutic interventions.
(Am J Cardiol 2014;114:921–927)

Aortic root dimensions indexed by annulus

Aortic Root	Men	Women	p
Sinuses of Valsalva/annulus			
Mean	1.5 ± 0.2	1.5 ± 0.2	0.9
25th	1.4	1.4	
Median	1.5	1.5	
75th	1.6	1.6	
Sinotubular junction/annulus			
Mean	1.3 ± 0.2	1.3 ± 0.2	0.9
25th	1.1	1.2	
Median	1.3	1.3	
75th	1.4	1.4	
Proximal ascending aorta/annulus			
Mean	1.4 ± 0.2	1.5 ± 0.2	0.0001
25th	1.2	1.3	
Median	1.4	1.5	
75th	1.5	1.6	

Data are presented as the mean ± SD, median, and twenty-fifth and seventy-fifth percentiles.

Repair of asymmetric aortic root aneurysm



Repair of asymmetric aortic root aneurysm

Respect the asymmetry and optimize the “near” normal function !