Marfan Syndrome and vaginal delivery ?

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C-section if aorta >40mm *JACC 2010; 55(14), Guidelines on Thoracic Aortic Disease*
Elkayam, U. et al. J Am Coll Cardiol. 2016;68(5):502–16.

C-section if aortic root diameter >45mm
European Heart Journal 2011; 32

No evidence that caesarean delivery protects against aortic dissection

Objective: Assess obstetrical outcomes according to aortic root diameter

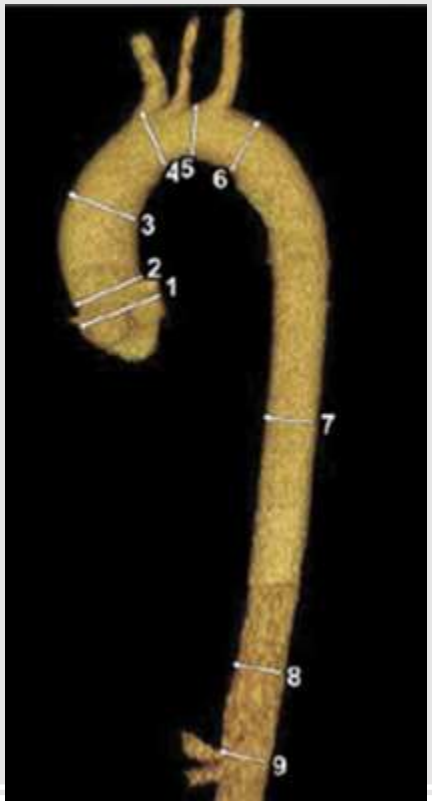
Methods

Marfan Syndrome per 1994 or 2010 Ghent criteria +- FBN1 mutation

Followed prospectively 1994 – 2017

Women with prior aortic surgery excluded

Aortic root diameter ≤45mm: allowed vaginal delivery with early epidural, delayed pushing and outlet forceps



Results

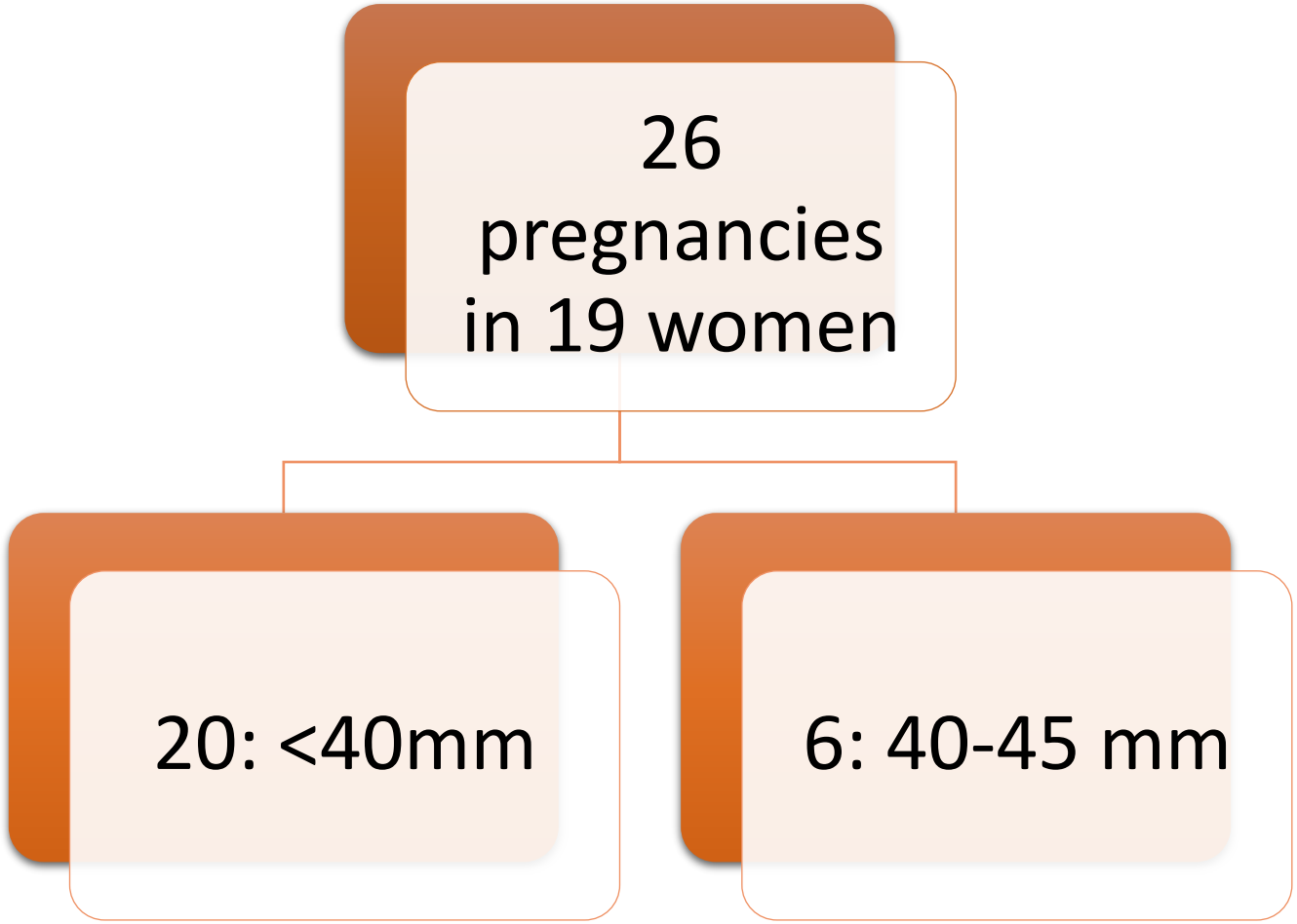


Table 1. Maternal characteristics and perinatal outcome in pregnancies with Marfan syndrome

	All pregnancies (n=26)	Aortic root <40 mm (n=20)	Aortic root 40-45 mm (n=6)	
	N (%) or median (interquartile range)			*p*-value
Induction for cardiac reason	4 (15,4)	3 (15,0)	1 (16,7)	1
Loco-regional anesthesia	22 (84,6)	18 (90,0)	4 (66,7)	0,22
Caesarean delivery	5 (19,2)	4 (20,0)	1 (16,7)	1
Assisted vaginal delivery	13 (50,0)	12 (60,0)	1 (16,7)	0,16
Preterm birth	6 (23,1)	4 (20,0)	2 (33,3)	0,60
Gestational age at birth (weeks)	38,8 (37,9-40,0)	38,9 (38,1-39,9)	38,4 (36,7-40,1)	0,78
Birthweight (g)	3270 (3080-3475)	3317 (2955-3600)	3103 (3080-3410)	0,52
Length of second stage (minutes)	83 (45-126)	101 (65-126)	59 (44-59)	0,16
Postpartum length of stay (days)	2,5 (2,0-3,0)	2,0 (2,0-3,0)	3,0 (2,0-4,0)	0,61

Cardiac outcome /1

1 acute type B dissection 31 weeks

non progressive aortic root diameter < 40mm,

β-blockers

Not in labor, pregnancy otherwise uncomplicated

Both mother and child survived

Cardiac outcome /2

Aortic growth: Median aortic root diameter

Prior to pregnancy: 35mm (interquartile range: 34.0-39.0)

End of pregnancy: 37mm (35.6-39.0)

Postpartum: 38mm (35.0-42.0)

Overall progression pre-post pregnancy within 1 year postpartum statistically significant (p=0,016)

Conclusion


High rate of successful vaginal deliveries
No evidence that CS is protective
Recent published series: CS for all ≥40mm
Dissection 3rd trimester with aortic root < 40mm
Risk might be higher than expected based on factors other than aortic root diameter > 40mm
Pregnancy high risk WHO II-III

References

- 1. Silversides CK, Kiess M, Beauchesne L, et al. Canadian Cardiovascular Society 2009 Consensus Conference on the management of adults with congenital heart disease: outflow tract obstruction, coarctation of the aorta, tetralogy of Fallot, Ebstein anomaly and Marfan's syndrome. Can J Cardiol 2010;26:e80-97.
- 2. Hiratzka LF, Bakris GL, Beckman JA, et al. 2010 ACCF/AHA/AATS/ACR/ASA/SCA/SCAI/SIR/STS/SVM guidelines for the diagnosis and management of patients with thoracic aortic disease: executive summary. A report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines, American Association for Thoracic Surgery, American College of Radiology, American Stroke Association, Society of Cardiovascular Anesthesiologists, Society for Cardiovascular Angiography and Interventions, Society of Interventional Radiology, Society of Thoracic Surgeons, and Society for Vascular Medicine. Catheterization and cardiovascular interventions : official journal of the Society for Cardiac Angiography & Interventions 2010;76:E43-86.
- 3. European Society of G, Association for European Paediatric C, German Society for Gender M, et al. ESC Guidelines on the management of cardiovascular diseases during pregnancy: the Task Force on the Management of Cardiovascular Diseases during Pregnancy of the European Society of Cardiology (ESC). European heart journal 2011;32:3147-97.