

Endovascular treatment of adult patients with coarctation of the aorta with covered CP stent



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Disclosure

Speaker name:

Sven Möbius-Winkler

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

- I do not have any potential conflict of interest

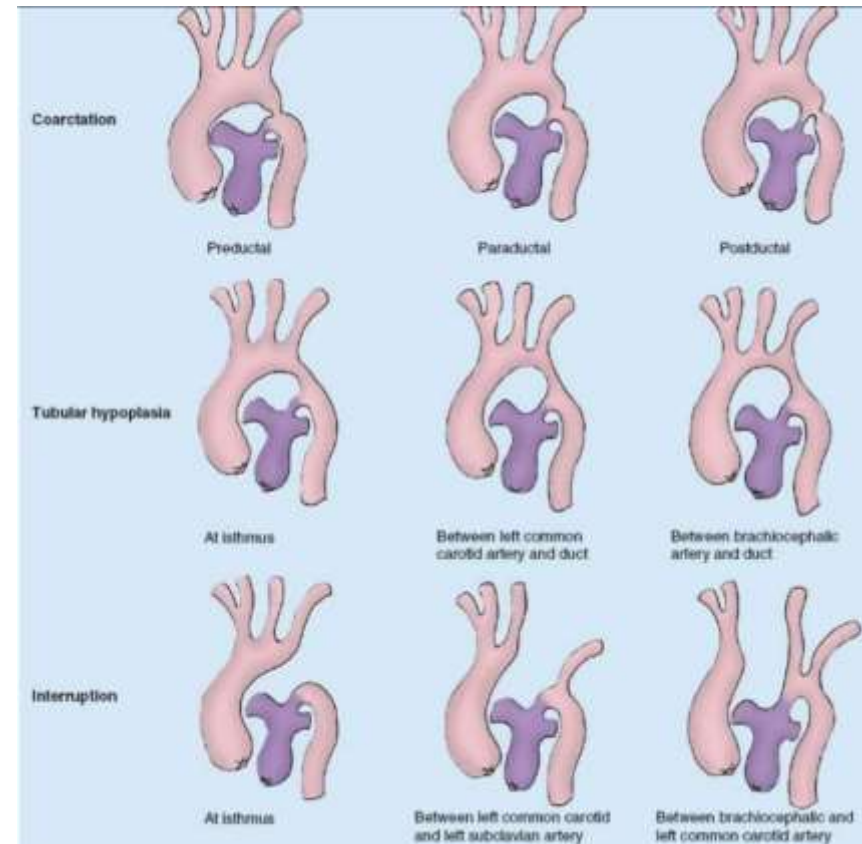
Morgani : - first description 1760

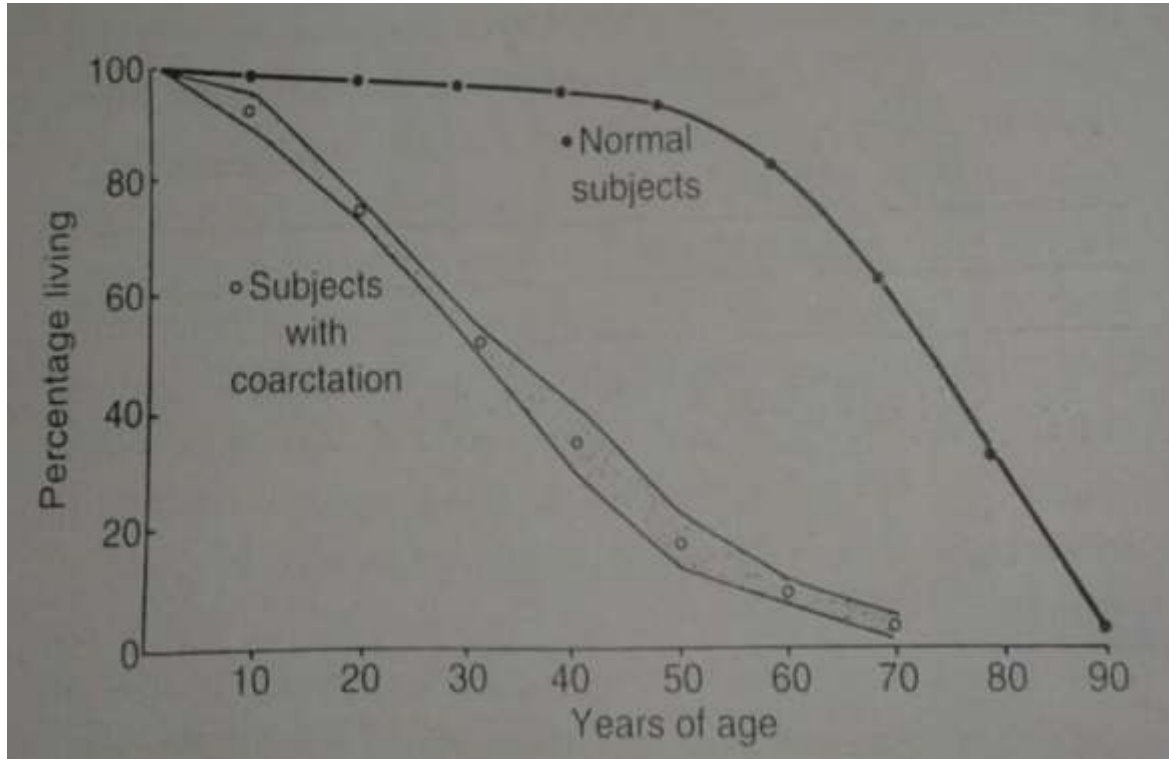
Bonnett: - first classification of types 1903

Crafoord: - first surgical resection 1944

- Incidence 0.2-0.6/ 1000
- 5-8% of all congenital heart diseases
- Prevalenz higher in genetical abnormalities (e.g. Turner Syndrom 15-20%)
- Isolated or in combination with other congenital heart diseases.
- Often accombined with bicuspid aortic valve, PDA, VSD
- In 10% additional cerebral aneurysm

Types:



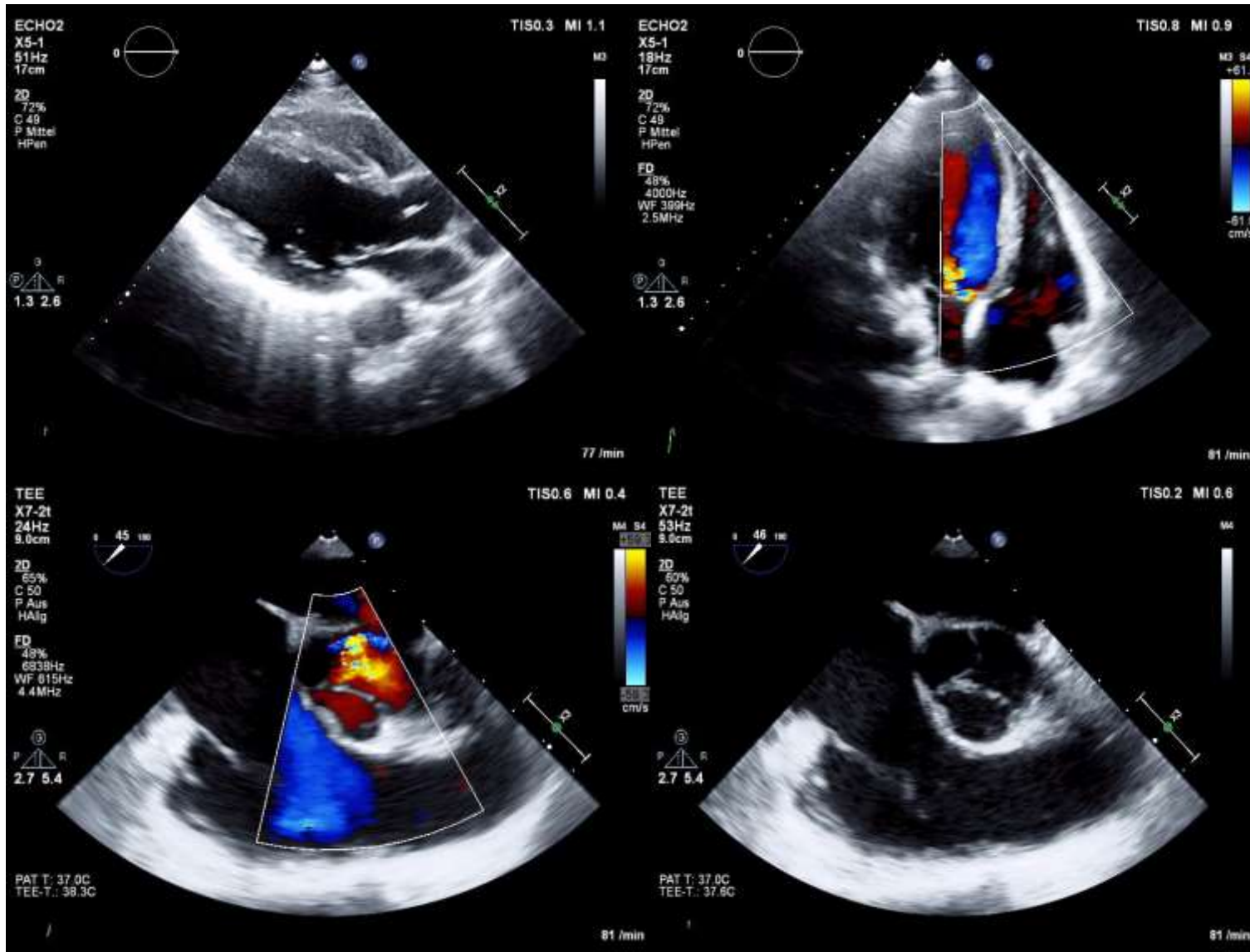


- Mean age of death (untreated): 34 y (ESC Textbook of CV Medicine, Second Edition; p340)
- 90% at the age of 50 death, (early autopsiestudies)
- Main influence on mortality is due to complications/ comorbidities like hypertension, intracranial bleedings, aortic dissection/ rupture, endocarditis , CHF.
- Mortality after treatment depends on treatment age, height, associated pathologies

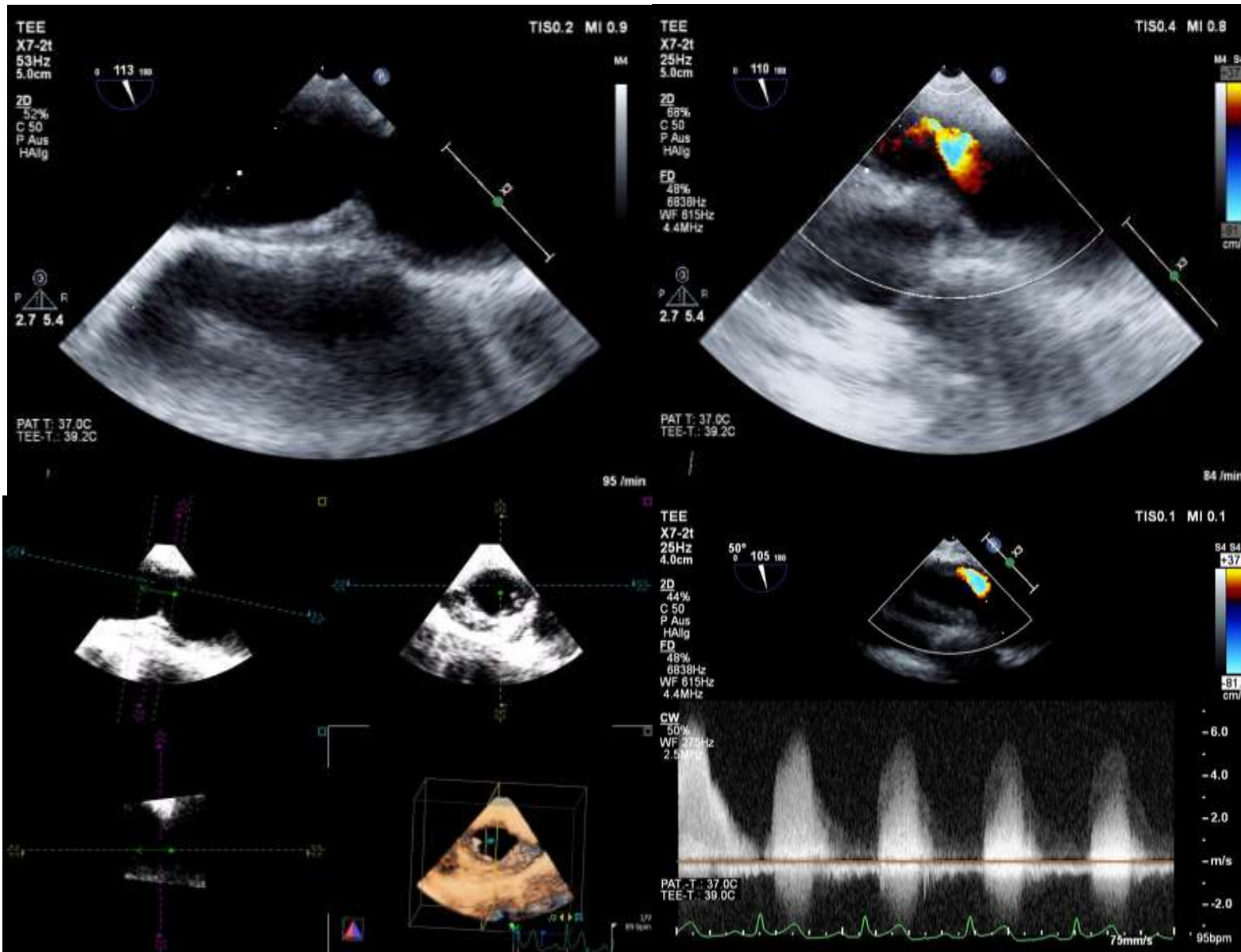
Case no.	main symptom	Age	Gender	ABI right	ABI left	GUCH comorbidity
1	Angina pectoris/ Hypertension	18	m	0,6	0,6	None
2	Dyspnoe NYHA II	23	m	nd	nd	unicuspid aortic valve
3	Claudicatio	23	m	0,8	0,8	bicuspid aortic valve
4	arm weakness/ hypertension	46	m	0,7	0,8	subclavian obstruction
5	Caludicatio	66	f	0,6	0,8	None

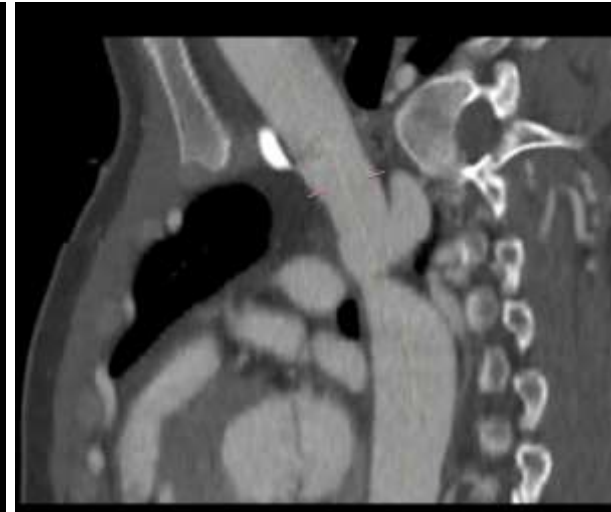
Coarctation- Measurements

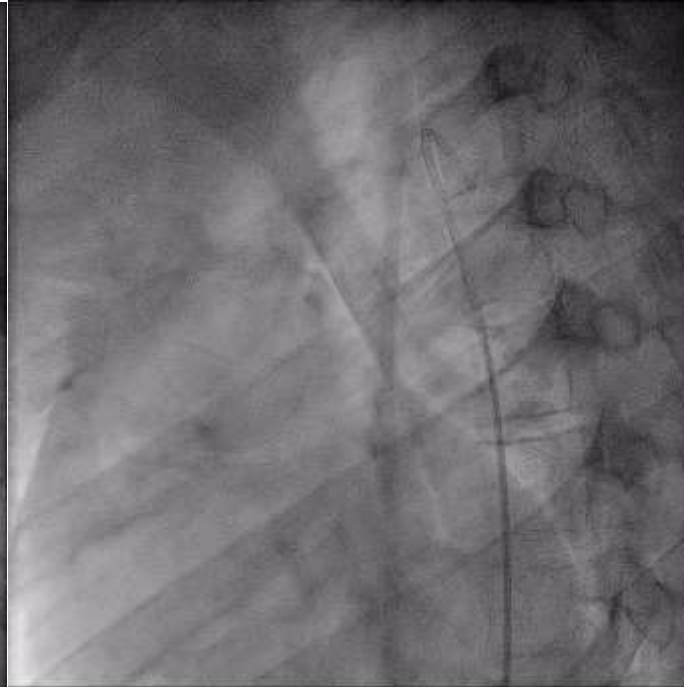
Case no.	Echo V max [m/s]	invasive gradient peak to peak [mmHg]	Diameter pre stenotic [mm]	minimal Diameter [mm]	Diameter post stenotic [mm]
1	2,45	56	12	4,5	18
2	2,28	29	49	7	21
3	6,2	38	19	9,4	29
4	n.d.	41	23	7,9	23
5	n.d.	32	24	14	40
Mean	3,64	41	6,96	22,67	26,2



Bicuspid aortic valve, aortic regurgitation , excentric jet to AML of mitral valve
right and left coronary cusp of av are merged







covered CP Stent :



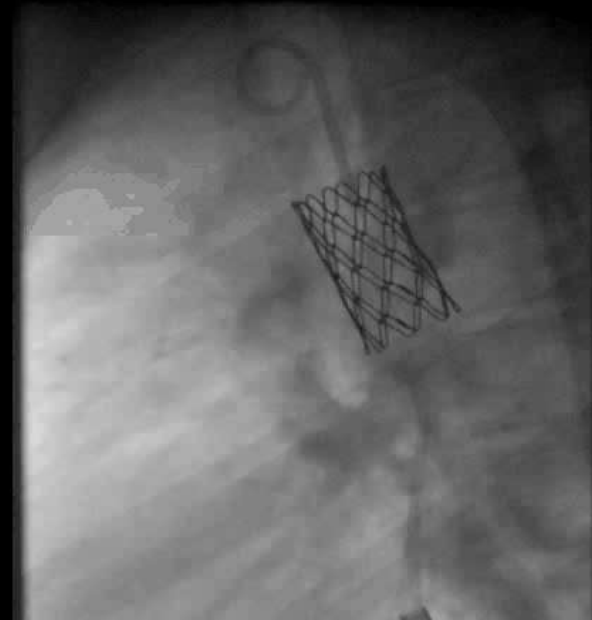
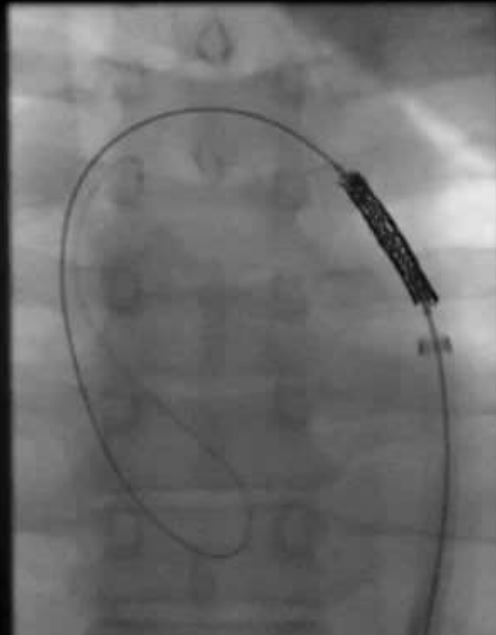
For diameter 12-24mm
Length: 16, 22, 28, 34, 39, 45 mm

NuMed Inc.; USA

on double lumen BIB Balloon:

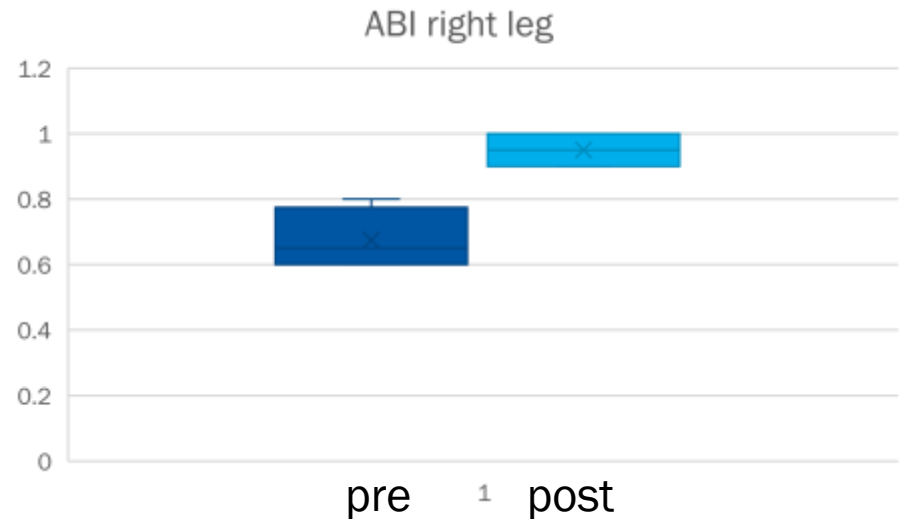
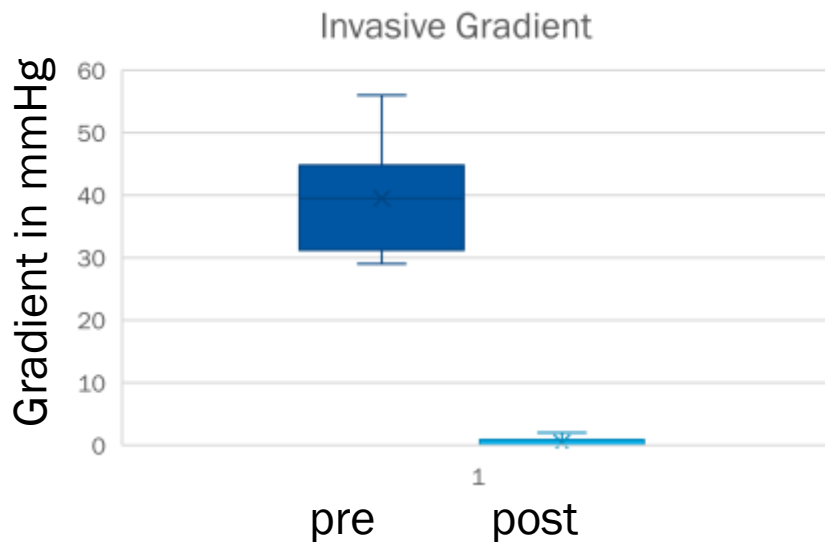


Inner balloon 50% of outer balloon
Inner balloon 1 cm shorter
Rated burst pressure: 2-7 atm
0.035" guide wire
Diameter: 12,14,15,16,18,20,22,
24,26,28,30 mm
NuMed Inc.; USA



1. No complications occurred
2. Invasive measurement: good results:

Case no.	Balloon diameter	Stentlength	invasive gradient peak to peak [mmHg]	Diameter Stent post	ABI post right	ABI post left
1	14	28	2	13	n.d.	n.d.
2	16	39	0	15	n.d.	n.d.
3	16	28	0	n.d.	n.d.	n.d.
4	22	45	0	n.d.	1	1,1
5	18	45	0	18	0,9	0,8
Mean	17,5	39,25	0,5	15,33333333	0,95	0,95



Coarctation in adults is:

- a rare entity
- often accompanied with other congenital heart defects
- often accompanied with claudication and objective reduction of ABI of both legs.

Endovascular therapy is safe and feasible without relevant complication rates in experienced hands also in adults.

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