Valvuloplasty in pediatric patient with 9VT-D, 3D TEE mini probe



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Patient History/ Pathology

3 year old with a bicuspid aortic valve and severe stenosis with peak gradient of 107mmHg and mean gradient of 58mmHg by echocardiogram by transthoracic echocardiogram. She presented to the cardiac catheterization for aortic balloon valvuloplasty.

Challenges

The procedure relies on fluoroscopy (radiation) to balloon the aortic valve. Visualization is difficult with 2D images.

System, probe & device used

Pediatric mini 9VT-D 3D TEE probe was used to help provide better visualization of the aortic valve, supporting reduced use of radiation.

Step-by-step procedure

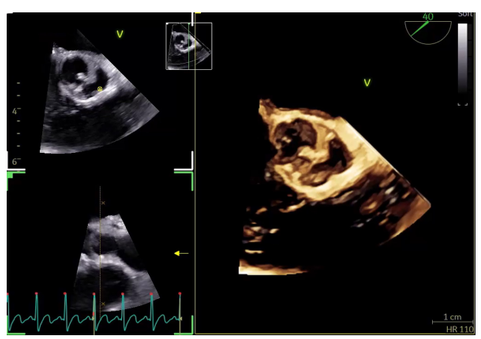
- Right heart guidance of catheter by using 3D TEE image views.
- Precise crossing of the aortic valve via 3D TEE en face views.
- Ballooning of the aortic valve supported by 3D TEE views to help enable reduced amount of radiation.

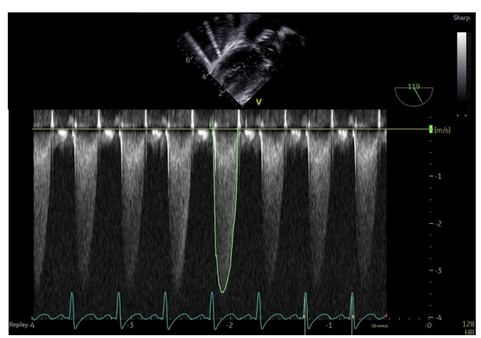
Conclusion

- Successful balloon valvuloplasty with less radiation used.
- Less radiation was made possible by using 3D TEE views to support the procedure.
- Severe aortic stenosis was decreased to moderate stenosis.

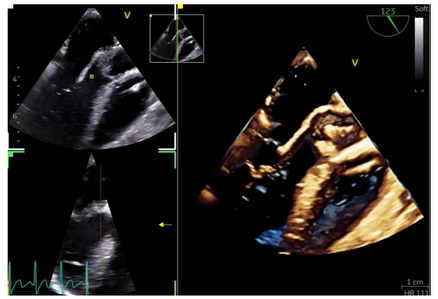
Echo lab follow-up

- Severe aortic stenosis was decreased to moderate stenosis (peak gradient of 52mmHg and mean gradient of 28mmHg).
- Mild aortic insufficiency.

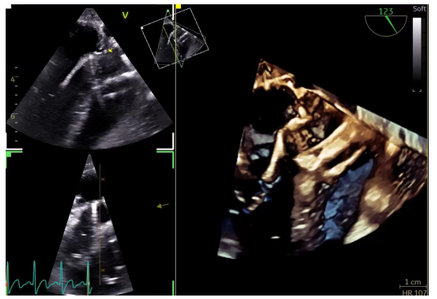




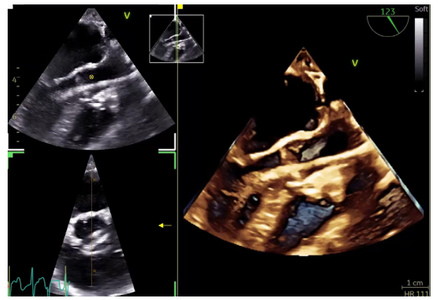
Preballoon (peak gradient of 48mmHg and mean of 30mmHg)



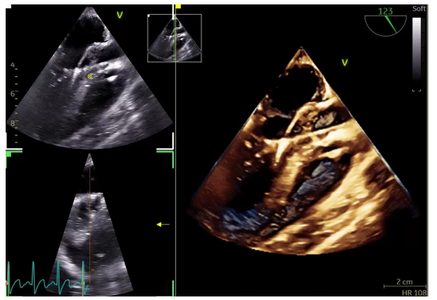
Crossing of the aortic valve



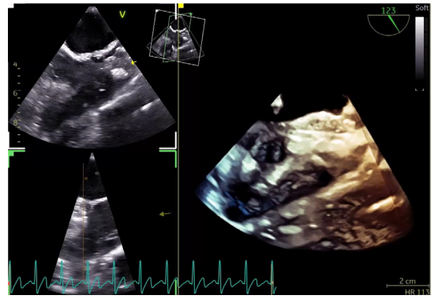
Crossing of the aortic valve



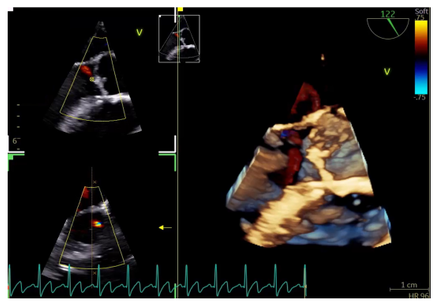
Catheter crossed into the left ventricle

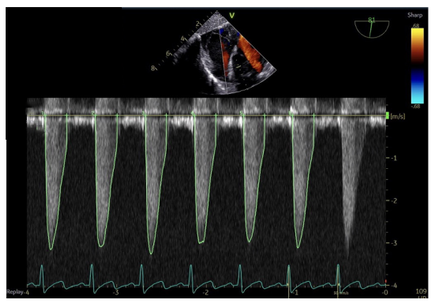


Catheter at the mitral valve – need to move to prevent rupture of chords when balloon valvuloplasty is occurring



Balloon valvuloplasty – seen well on 3D and not 2D





Post balloon valvuloplasty (peak gradient 38mmHg, mean gradient 20mmHg), mild aortic insufficiency

9VT-D probe is exclusively available for Vivid E95 and Vivid E90 systems.

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