

Reducing risk & optimising care

RVOT Transcatheter

2017

Benefits & Risks

Phil Roberts



ACHD Symposium 2017

THE QUEENSTOWN MEETING

30 Nov - 2 Dec, Queenstown, New Zealand

Disclosures

- Medtronic
- Edwards
- St Jude
- Occlutech
- Gore



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Reducing risk & optimising care



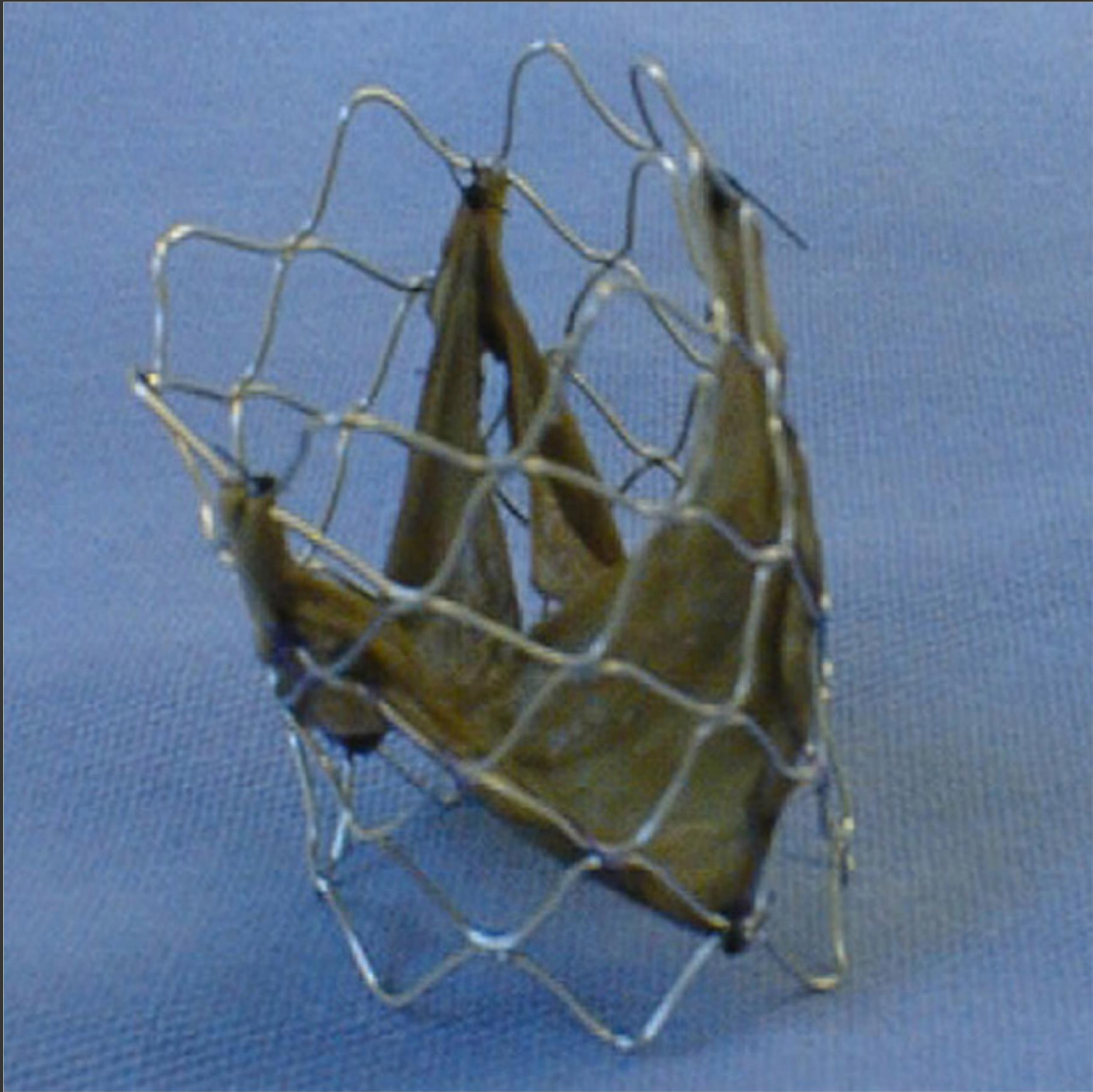
Dynamic field

3 parallel processes

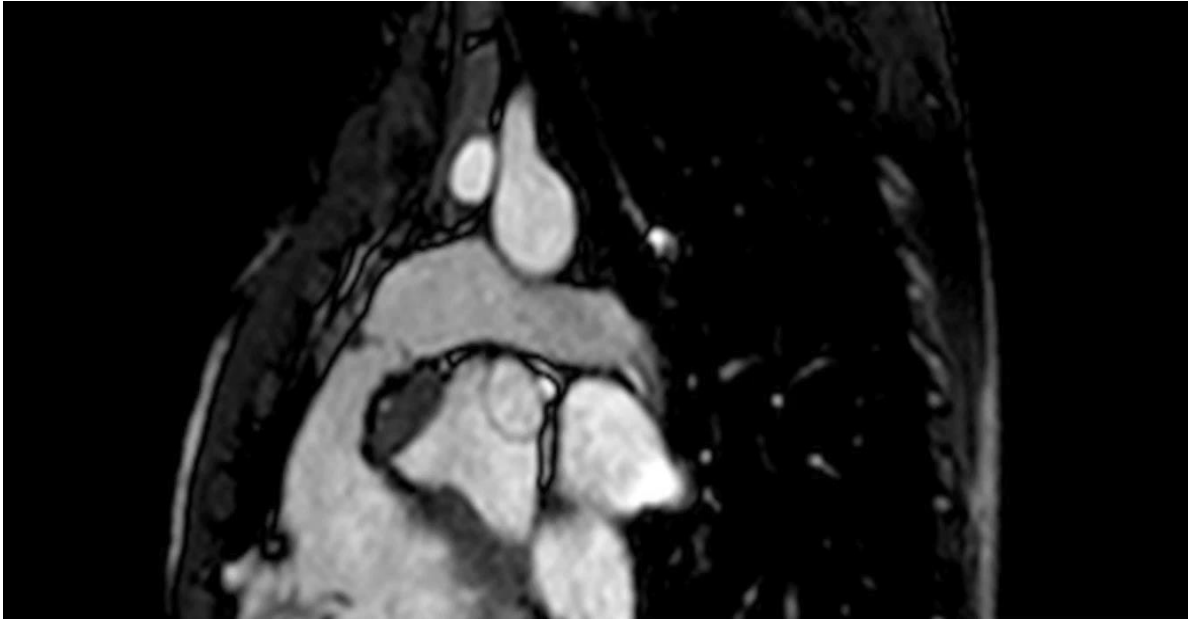
- Anatomical substrate
- Technology
- Risks & benefits



EVOLVING



Tightly defined anatomical substrate



- Surgical conduit
- 14-22mm
- Stenosis
- Moderate regurgitation

Overall



High success rate
Low complication rate

1-2%
SAE

ANZ Experience

Approximately 200 implants

In ANZ

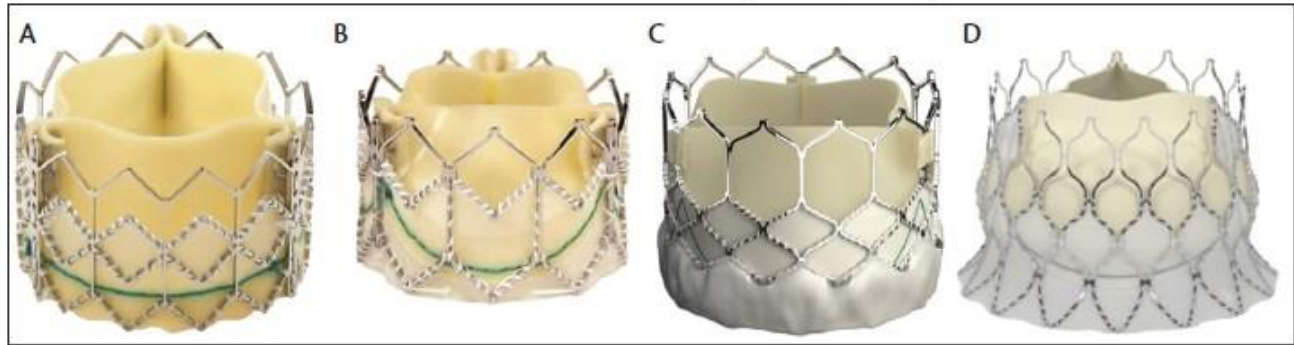
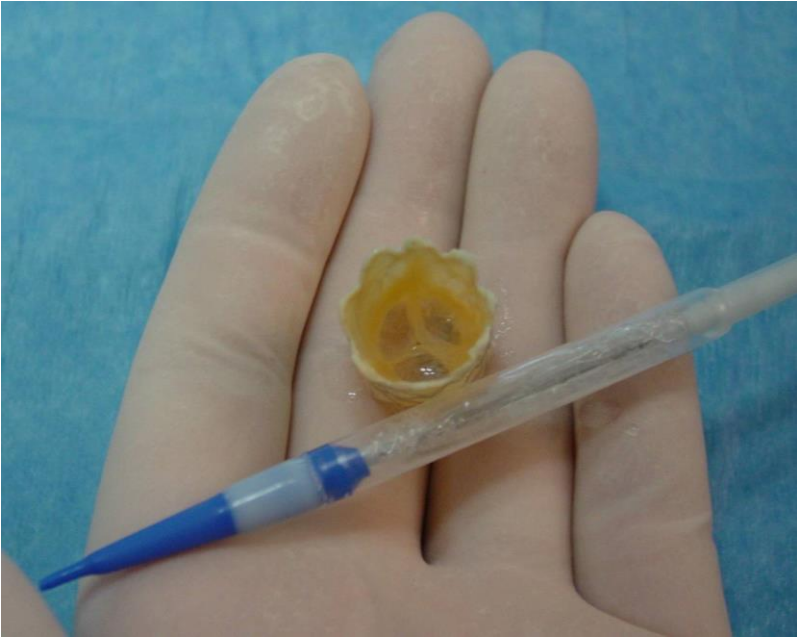
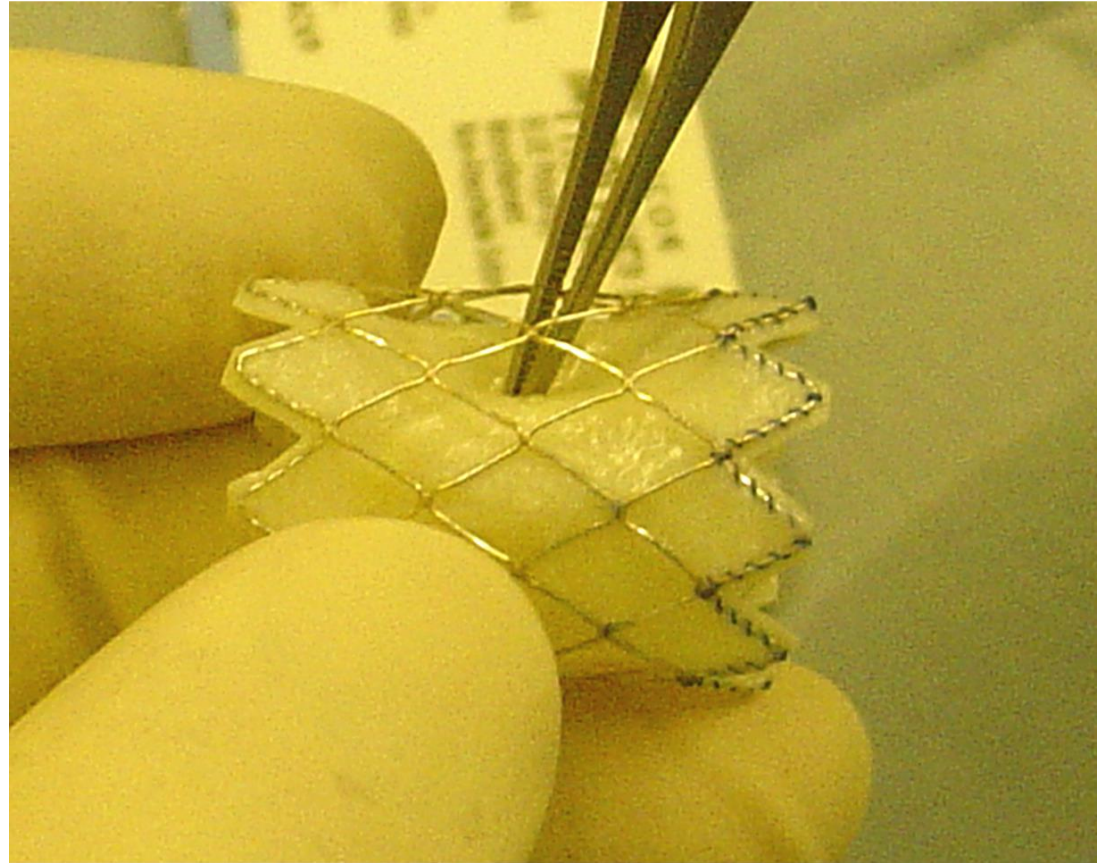
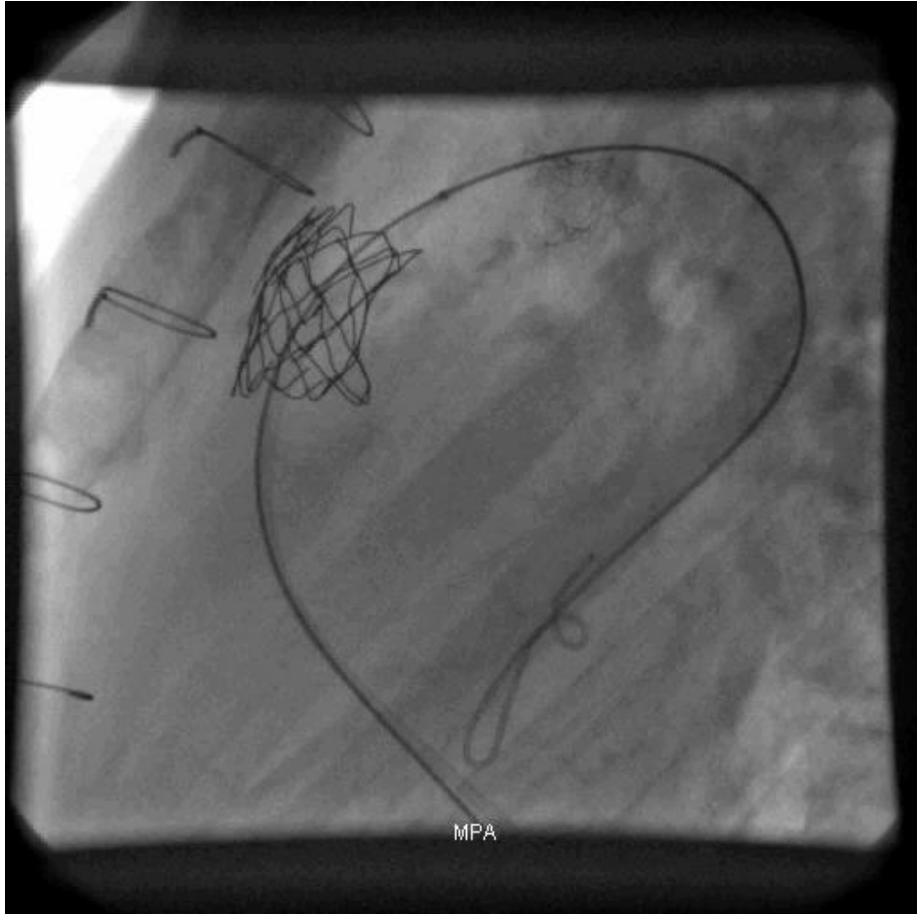


Figure 1. Sapien valve (A); Sapien XT valve (B); Sapien 3 valve (C); Centera valve (Edwards Lifesciences) (D).

14-28 mm approximately

Historical complications

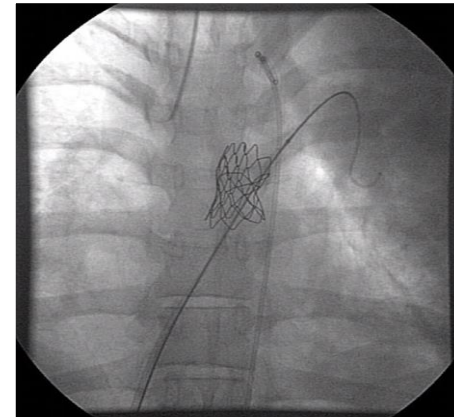
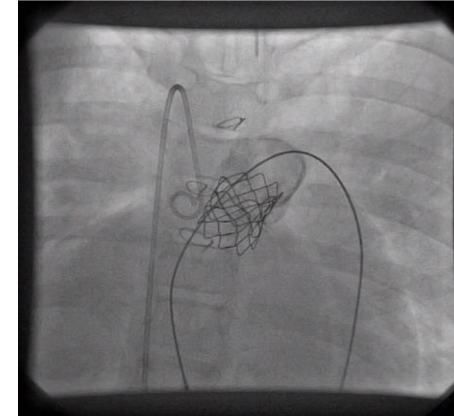
- Hammock effect
- Stent fracture
- Conduit rupture



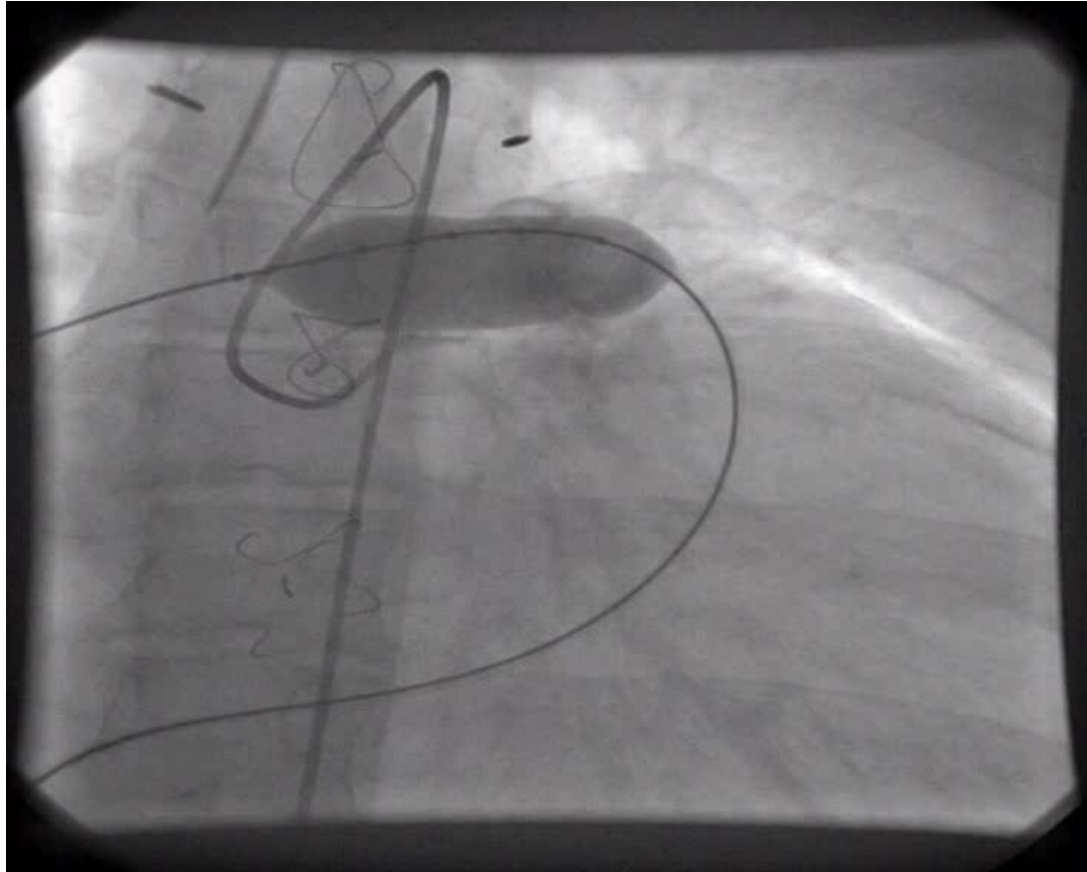
Particular to Melody

Procedural complications first 546

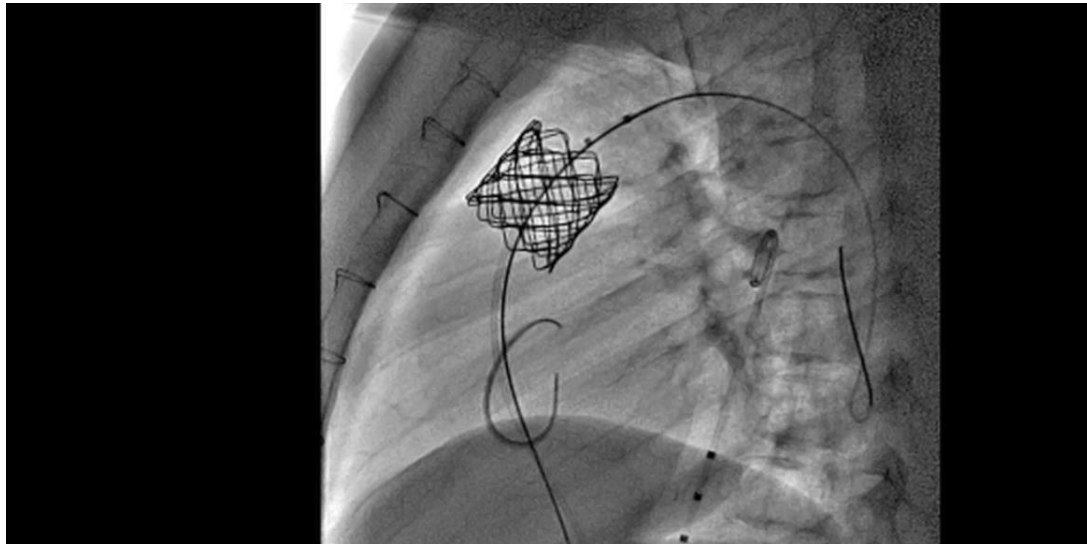
- Homograft rupture
- Device dislodgement
 - Non-circumferential homograft
- Coronary compression
- Jailing of branch PA
- Guide-wire perforation of branch PA

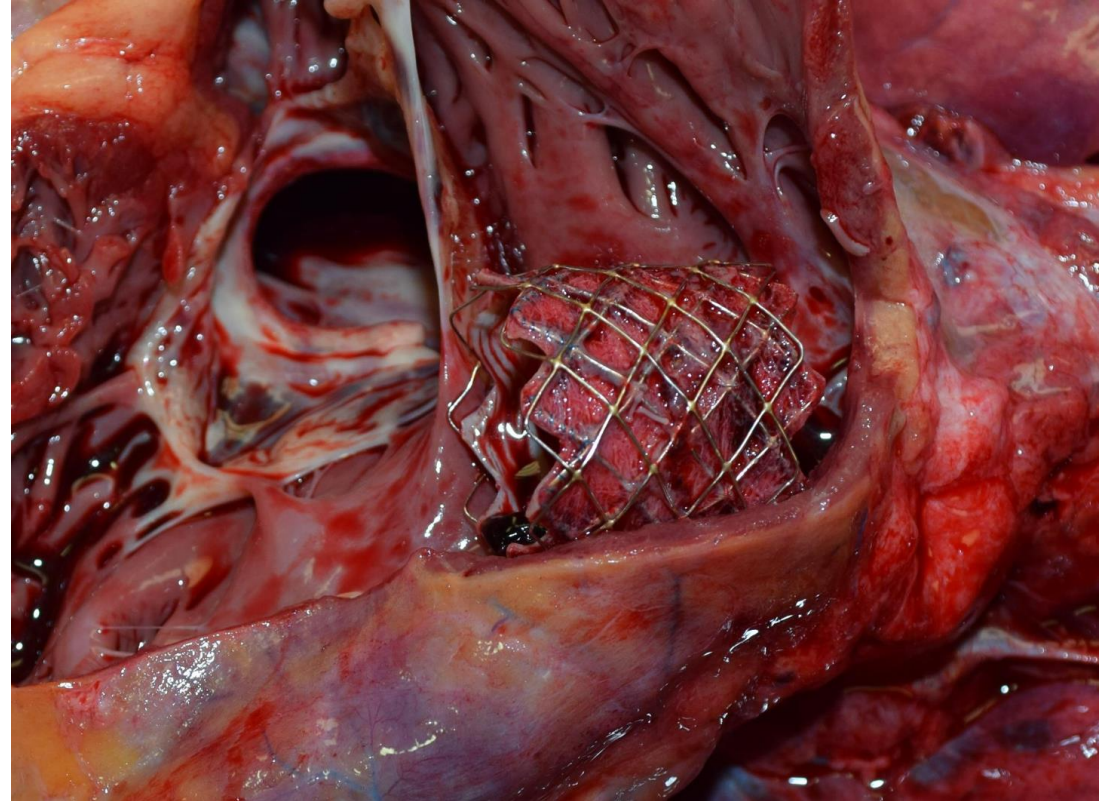
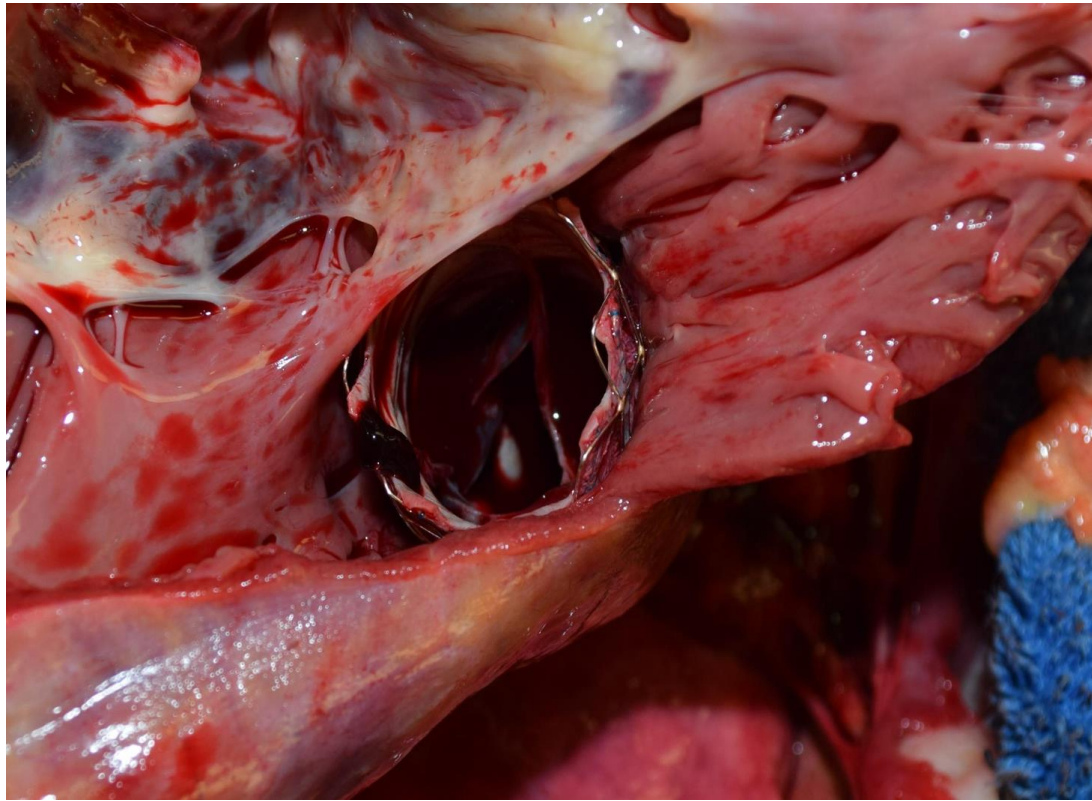


Coronary compression

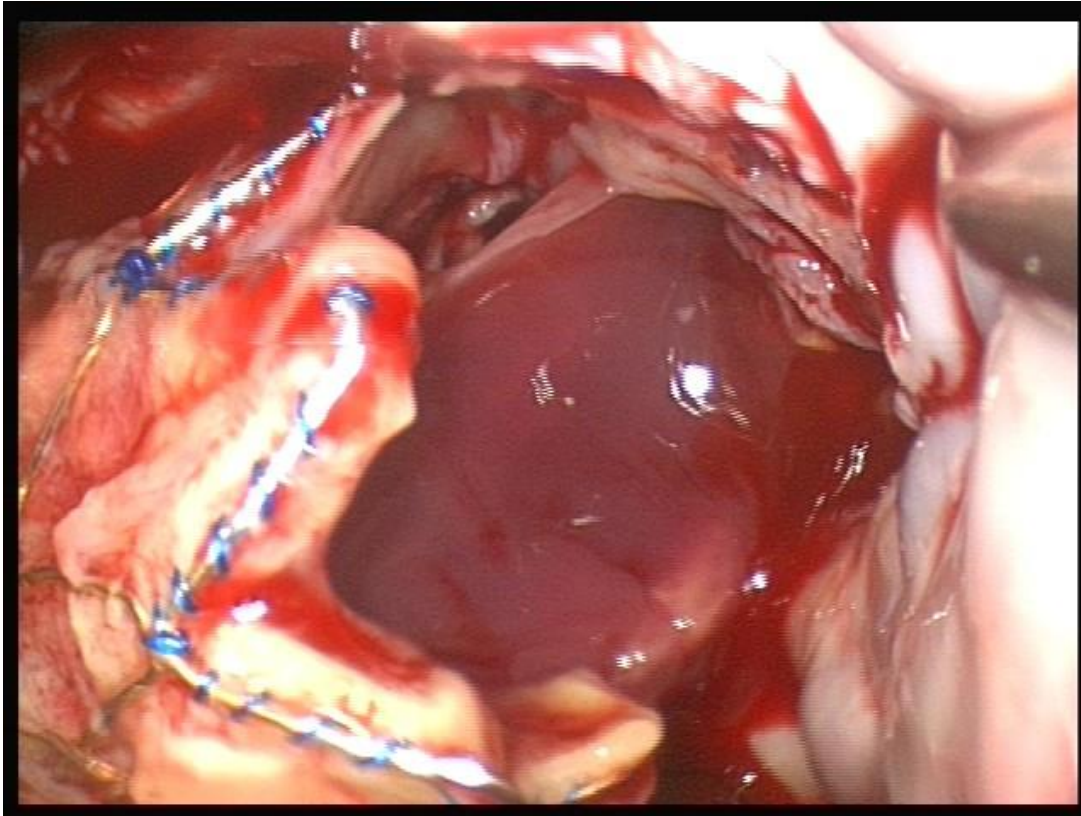


Unreported





IE



- Remains a long term concern
- Numerous aetiological theories
- Aspirin

Edwards valves

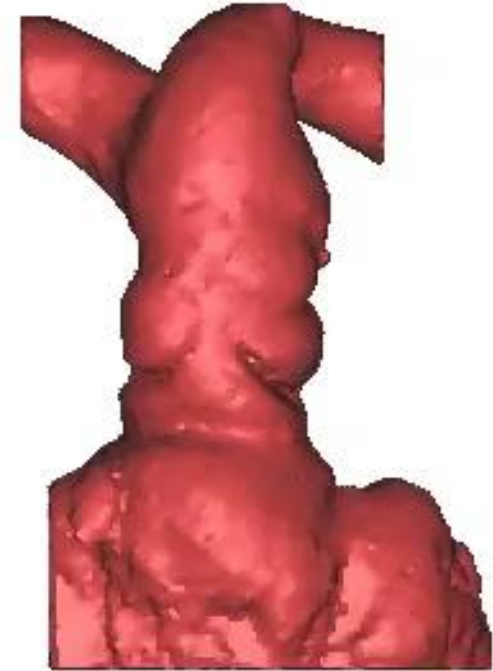
- Currently far smaller volume of experience
- Stent felt to be significantly more robust
- Given the introduction tracking patient cohorts challenging
- Issues such as TV damage are likely to become historical
- Infundibular reducer yet to complete trials

Bigger challenge....

Bigger challenge.....

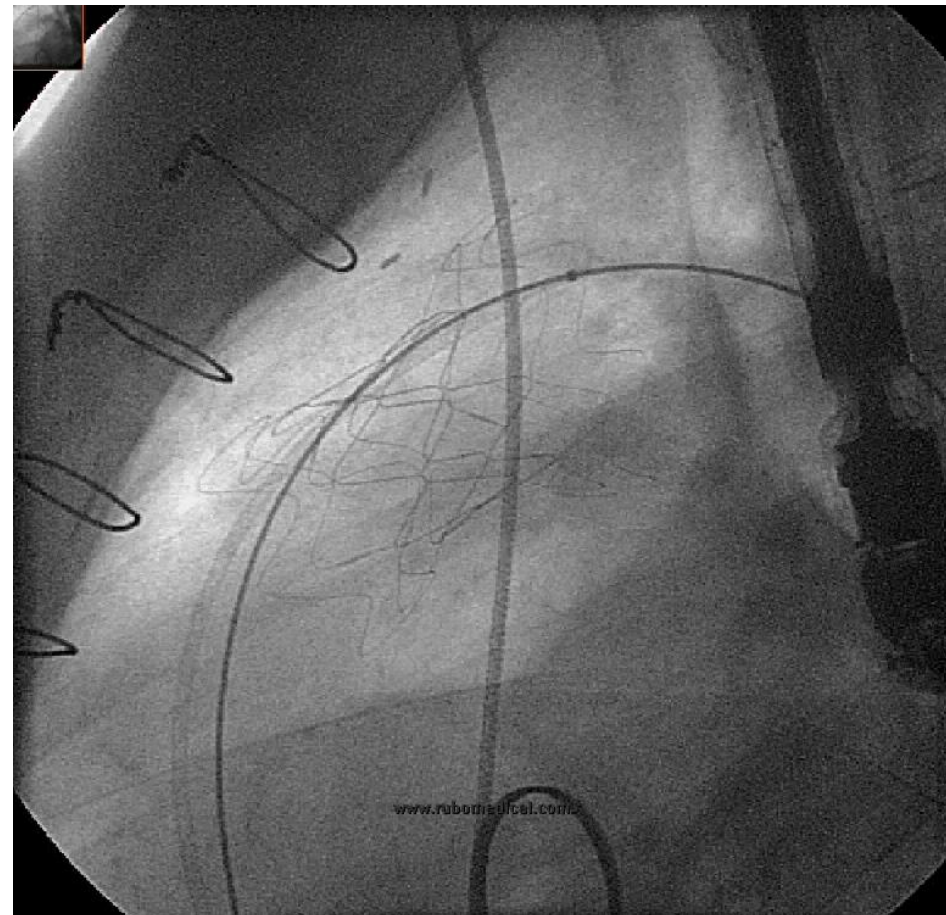
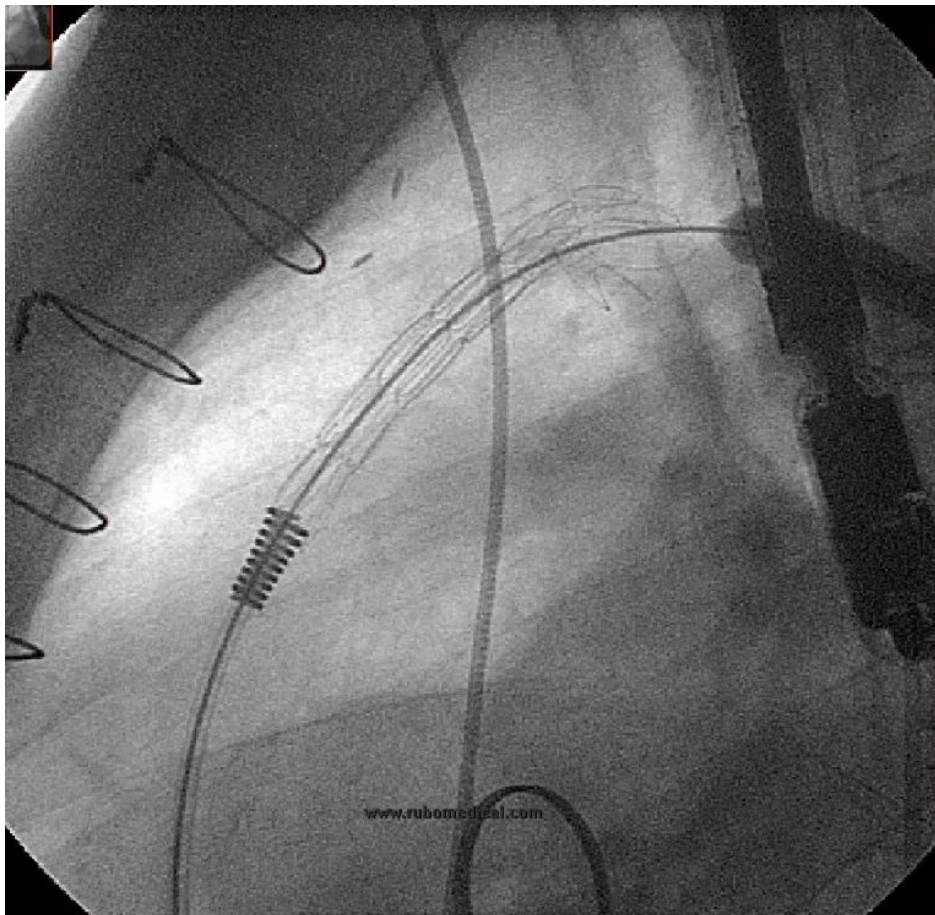


Uncharted territory





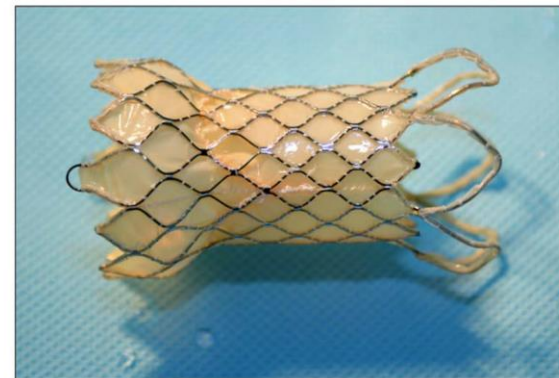
First in man dilated RVOT

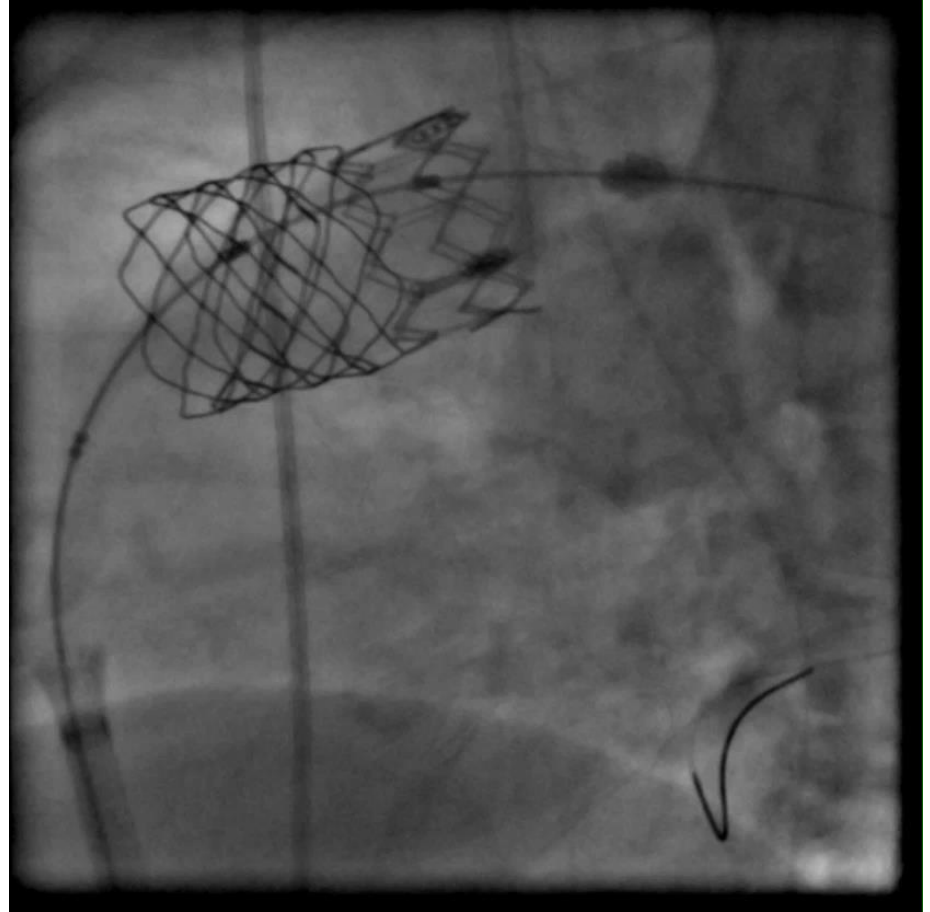
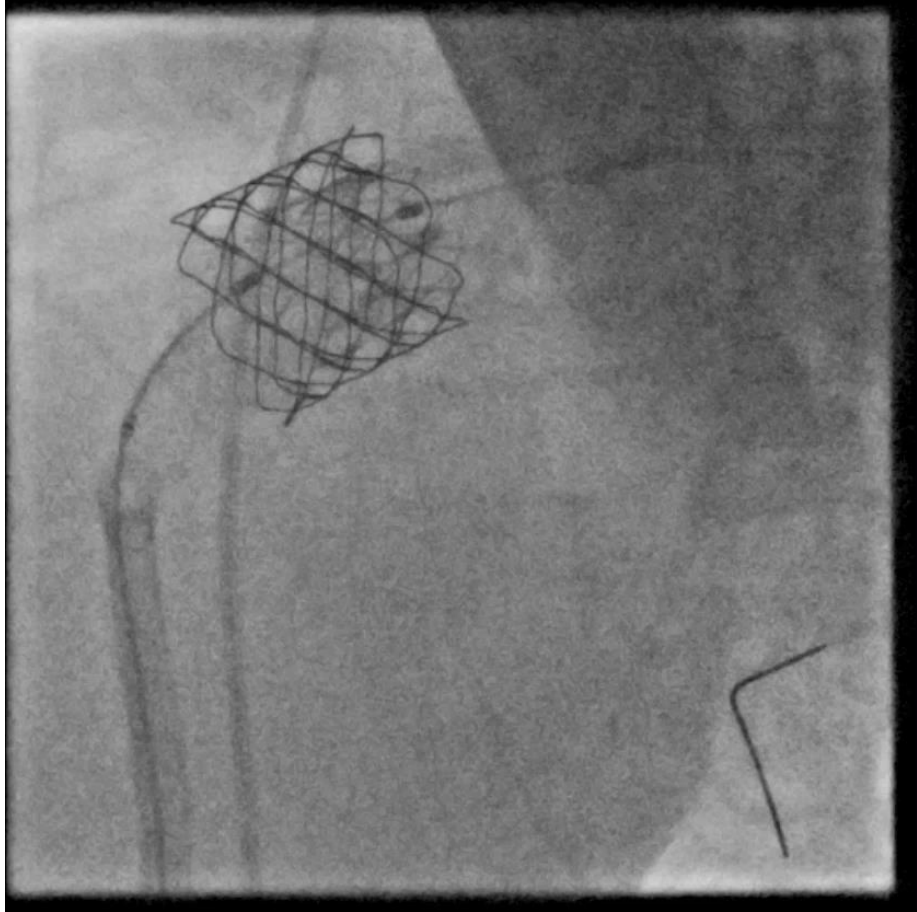


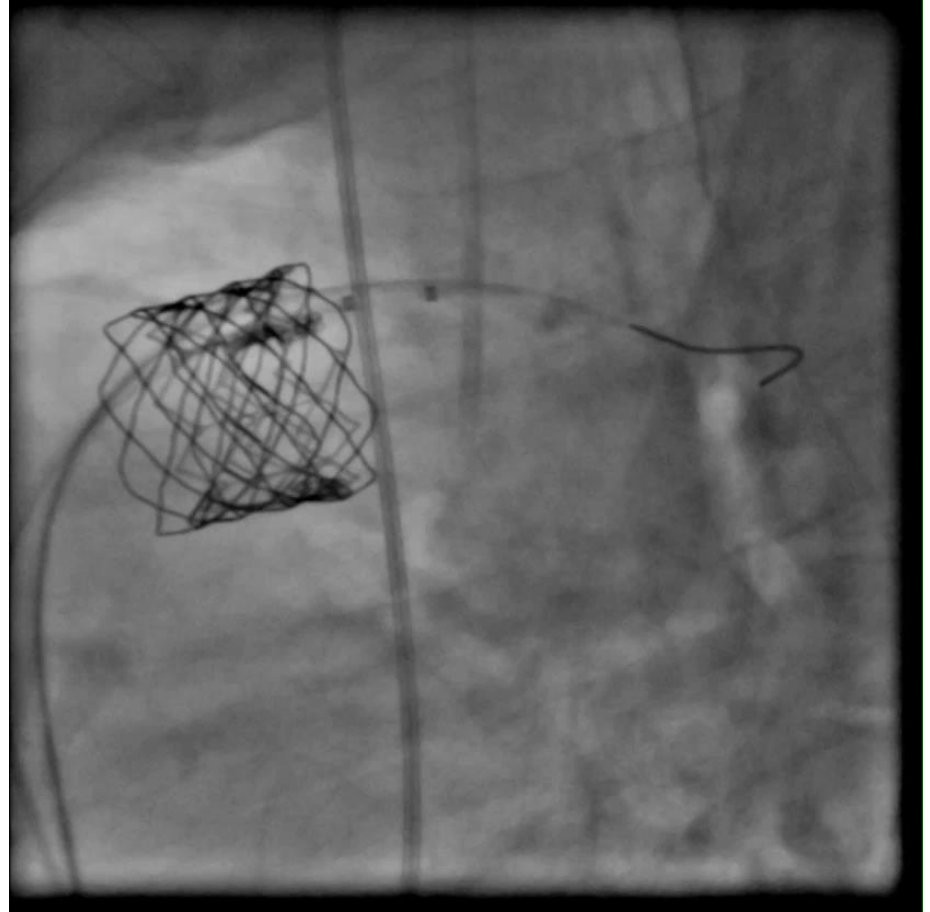
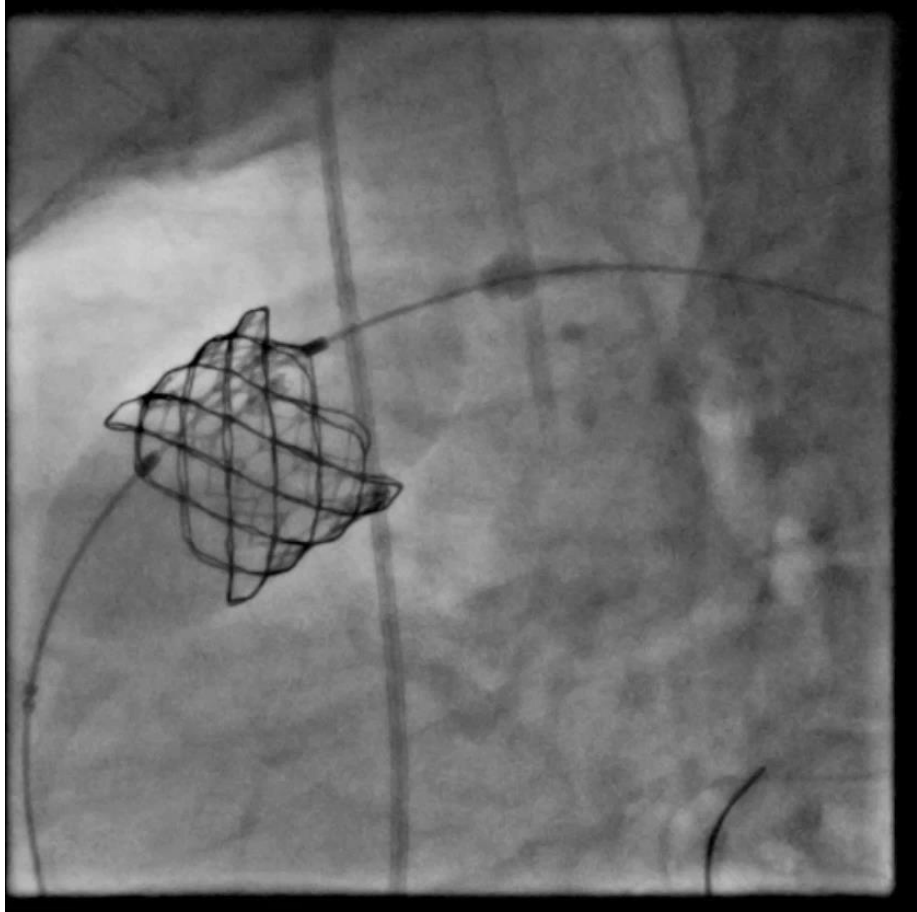
Venus P Valve



(a)







Dilated outflow tract

Anticipatable

- Standard expected
- Fractures
- Loading conditions
- IE risk

Yet to be discovered

- Unknown unknowns

Benefits



- Human factors
- Home in 24 hours
- Rapid integration to life
 - Bed block
- ?Financial cost?



Immediate procedural risk

- Rupture
- Embolisation
- Technical error



Medium & long term risk



- Natural history of bioprosthesis
- Device structural integrity
- Arrhythmia
- Infective endocarditis
- Further procedures

2017

Balloon expandable

- Melody
- Edwards

Self expanding

- Venus P valve
- Harmony

Unique ACHD challenges

- Geographical challenges
- Local vs regional
- Occasional practice

Ideal

- Congenital interventional cardiologist
- Congenital cardiac surgeon
- Congenital cardiac anaesthetist
- Dedicated service unit

Dedicated service unit

- Nurse consultant
- Obstetric access
- Anti-coagulation clinics
- Other specialist access



Access
Social dislocation

Thank you