



A Recipe for Optimizing TAVR Success: Procedural Tips and Triks

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Disclosure Statement of Financial Interest

I, **Corrado Tamburino**, DO NOT have a financial interest/arrangement or affiliation with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation



TAVR Tips and Tricks

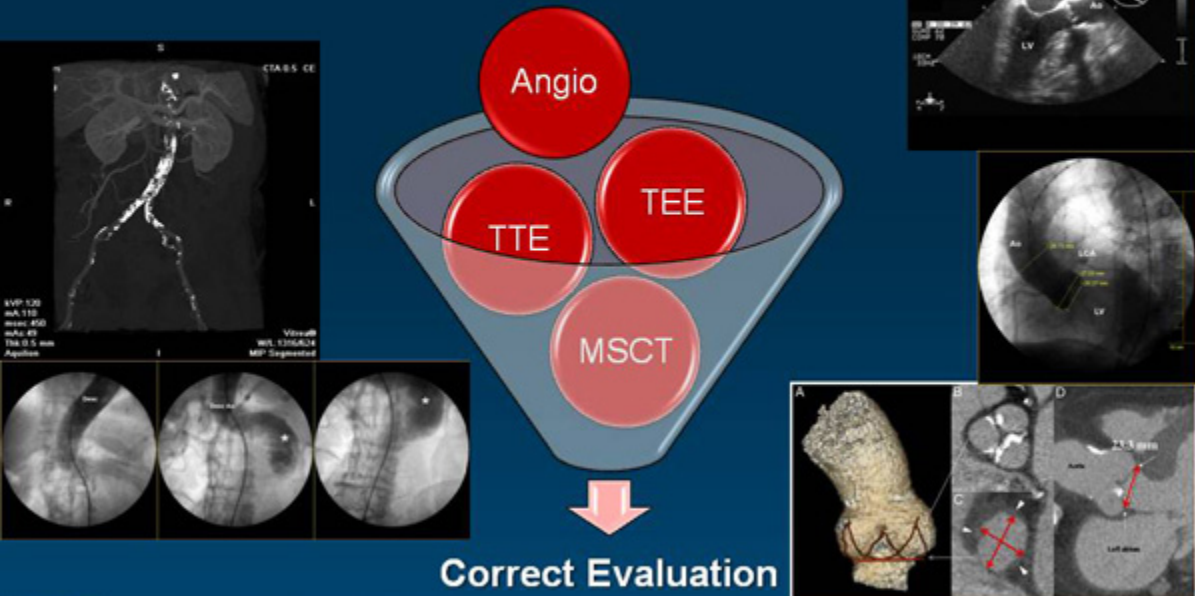
Case
Selection

Technique



TAVR Tips and Tricks

Anatomic Selection

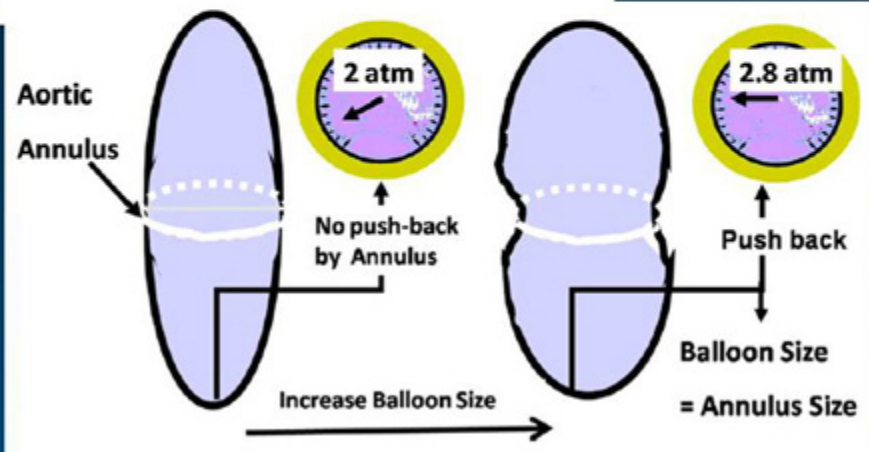




Use of Balloon Aortic Valvuloplasty to Size the Aortic Annulus Before Implantation of a Balloon-Expandable Transcatheter Heart Valve

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Prosthesis Selection

The right valve for the right patient

CRS better



CRS or ES-XT



ES-XT better

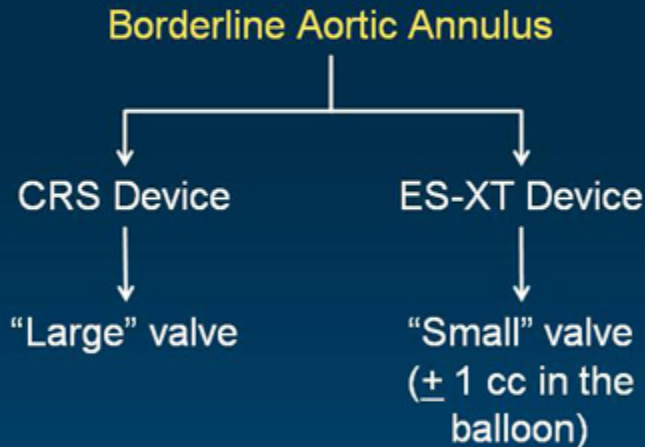


- Borderline Sinus of Valsalva height and length
- Small calcium burden
- Subclavian route
- Elliptic annulus
- Coronary ostia "threatened"
- Pure aortic regurgitation (off-label)
- Prosthesis leak/abscess

- Hypertrophy IVS
- Small LVOT
- Pre-existing RBBB
- Ectasia of ascending aorta

Anatomic Selection

The right valve for the right patient



TAVR Tips and Tricks

Case
Selection

Technique



TAVR Tips and Tricks

- Crossing the aortic valve and guide positioning
- Checking positioning
- Regurgitation management
- Device misplacement management

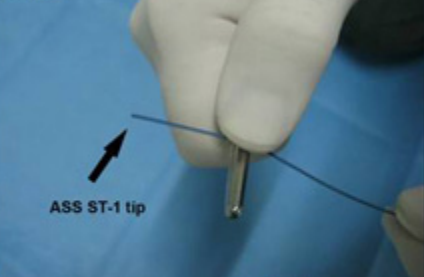


TAVR Tips and Tricks

Step 1



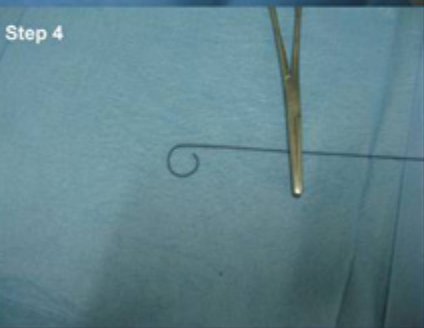
Step 2



Step 3

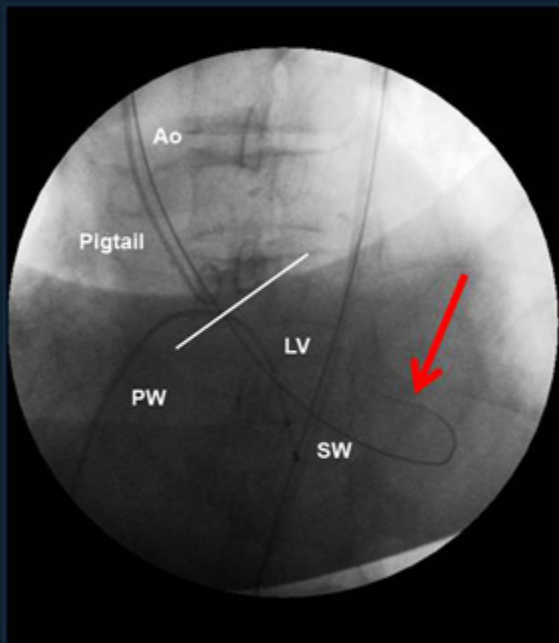


Step 4



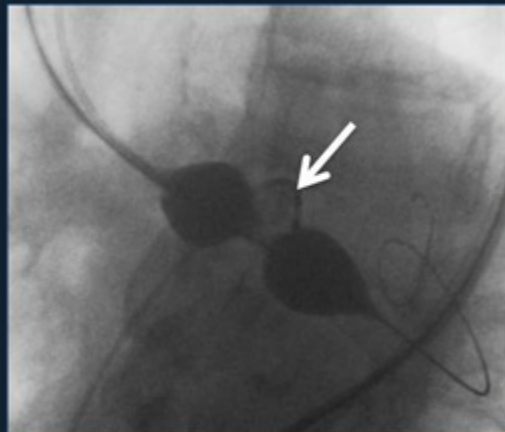
TAVR Tips and Tricks

Amplatz SS
into the
left ventricle



Case Example

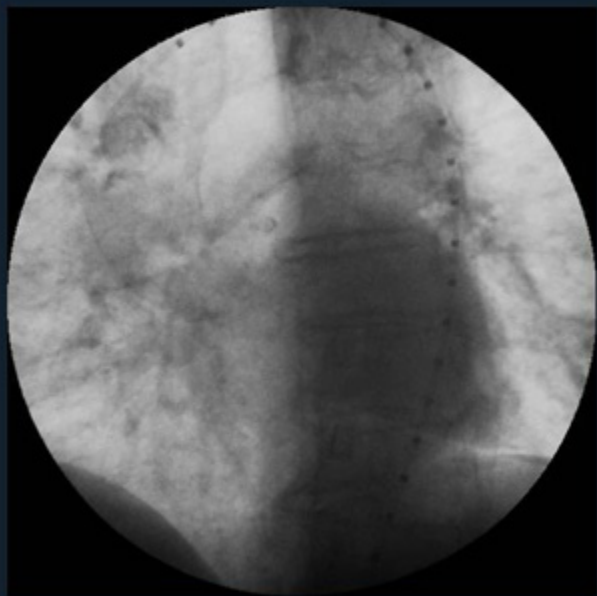
valvuloplasty



Transfemoral access; crossing aortic valve (AL-2); BAV (25 x 40 mm Nucleus balloon)

TAVR Tips and Tricks

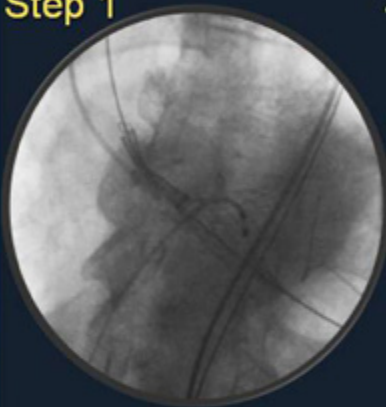
**Severe aortic
regurgitation caused
by leaflet perforation**



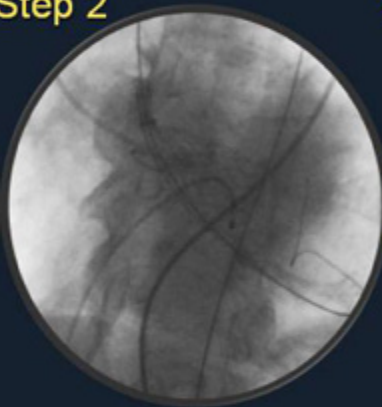
Case Example

Valve deployment

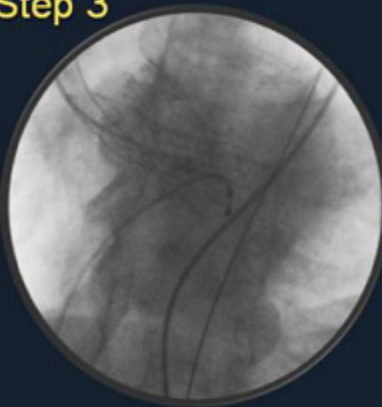
Step 1



Step 2



Step 3



26-mm CRS being released



Case Example

Checking Expansion

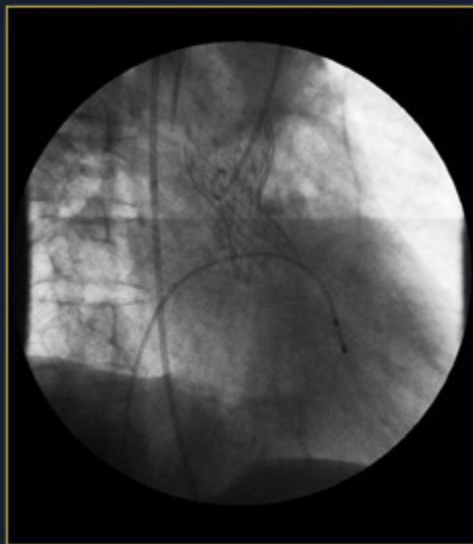


LAO projection
Correct expansion



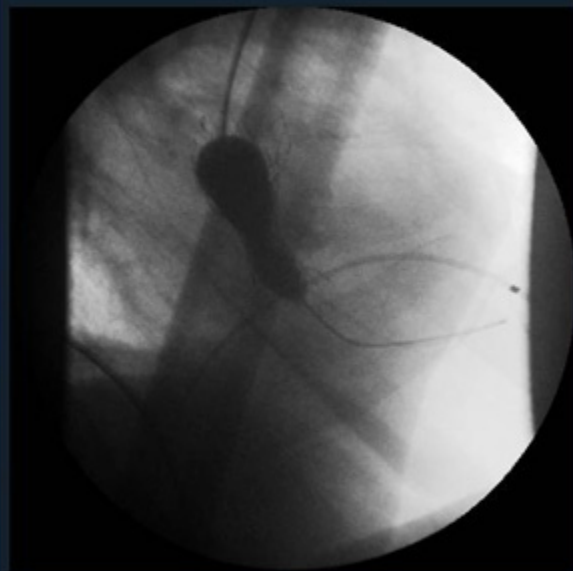
Case Example

End?...Not yet!



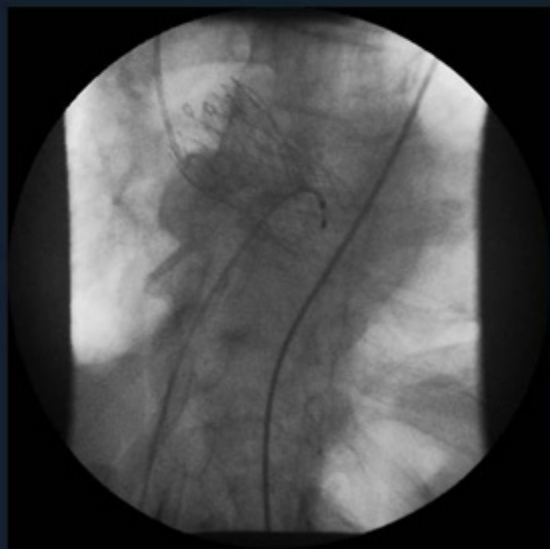
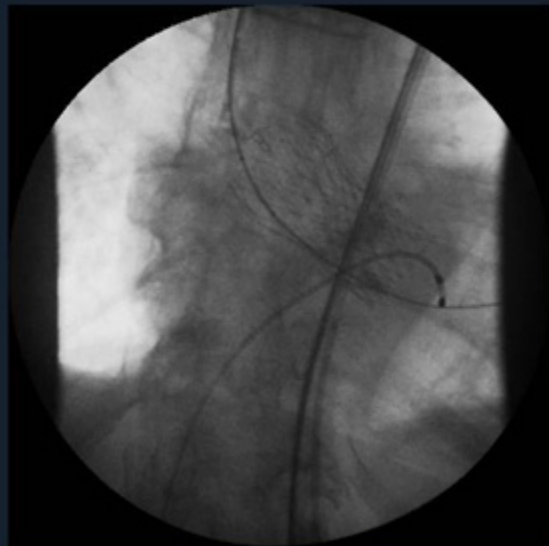
Case Example

postdilatation



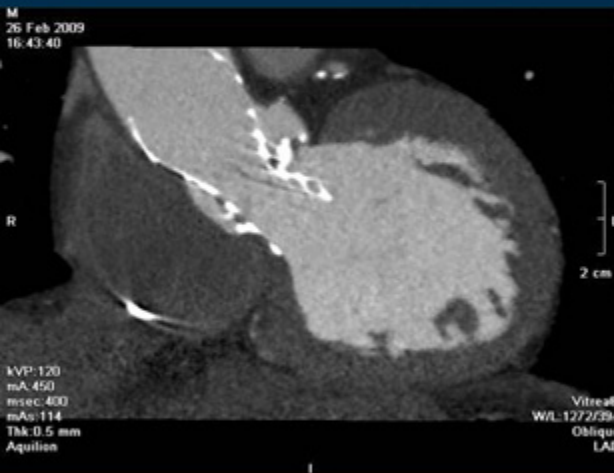
Case Example

Final control



Case Example

64-MS CTA



Case Example

Crossing the valve

When suspect aortic cusp perforation?

1. Challenging aortic valve crossing (e.g. bicuspid valve)
2. Difficult passage of diagnostic catheter and/or balloon valvuloplasty and/or Delivery Catheter
3. Difficulty in manipulation of diagnostic catheter inside the LV for positioning Amplatz SS

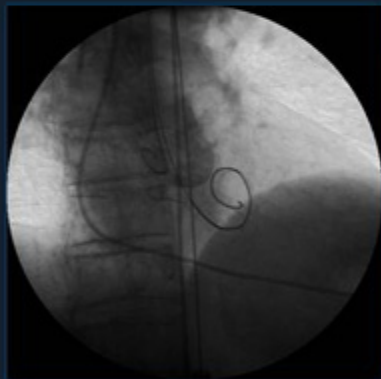
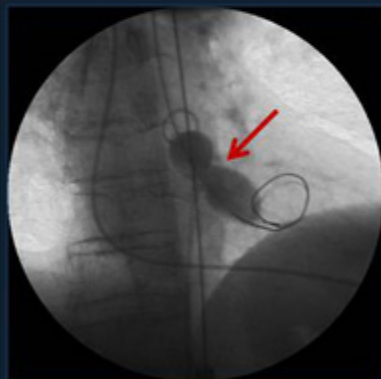


Case Example

Crossing the valve

Case # 2

- Trans-femoral access; crossing aortic valve (AL-2); BAV (25 x 40 mm Nucleus balloon) → balloon waist → re-cross the valve → CRS 29-mm

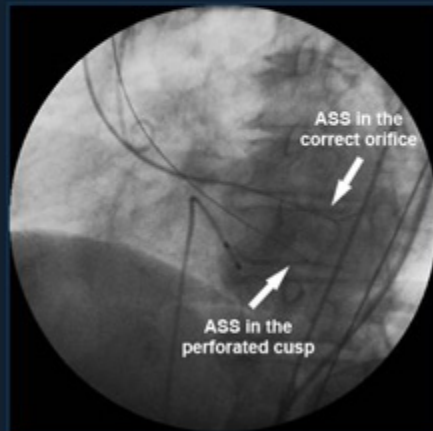


Case Example

Crossing the valve

1. Perform aortograms in two orthogonal projection leaving the wire inside the perforated cusp and make diagnosis!
2. Leave the wire/catheter in the perforated cusp and re-cross with another guidewire, so it is easier to identify the correct aortic orifice

Re-cross with the 1st wire inside
2nd wire with different trajectory



ES Checking positioning

Long duration pacing (15-20") during Implantation

1st step: start pacing (180-200 b/min)

2nd step: dye injection and check valve positioning

3rd step: valve demi-inflation (10 ml)

4th step: dye injection, final check w/o **repositioning**

5th step: full inflation and count 1-to-5

6th step: stop pacing

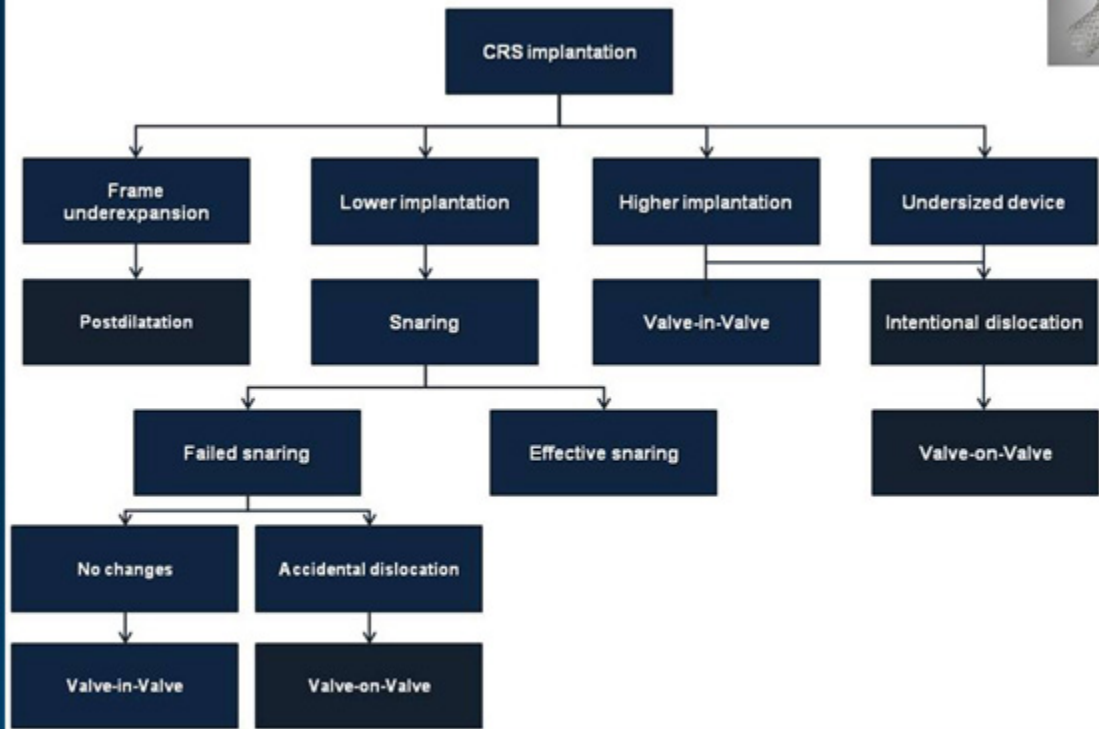


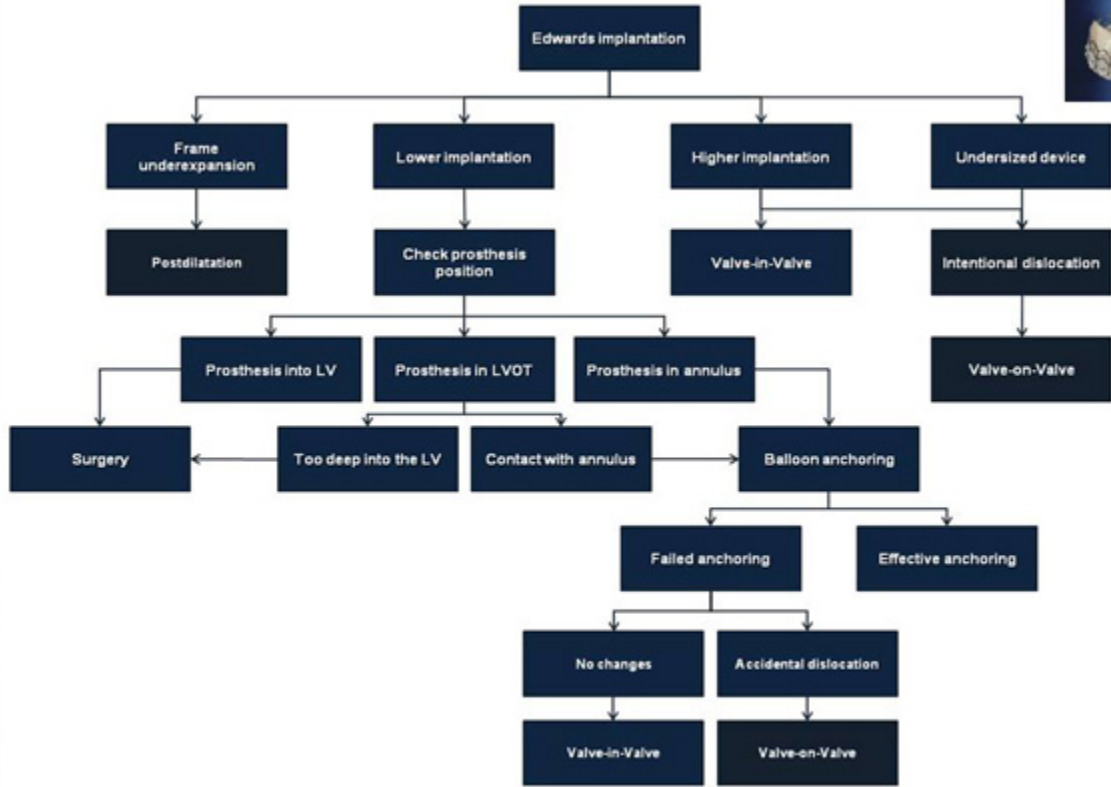
Para-valvular leak after TAVI

How to manage it?

1. Post-dilatation.....CRS & ES
2. Snaring.....CRS
3. Valve-in-Valve.....CRS & ES
4. Anchoring balloon.....ES

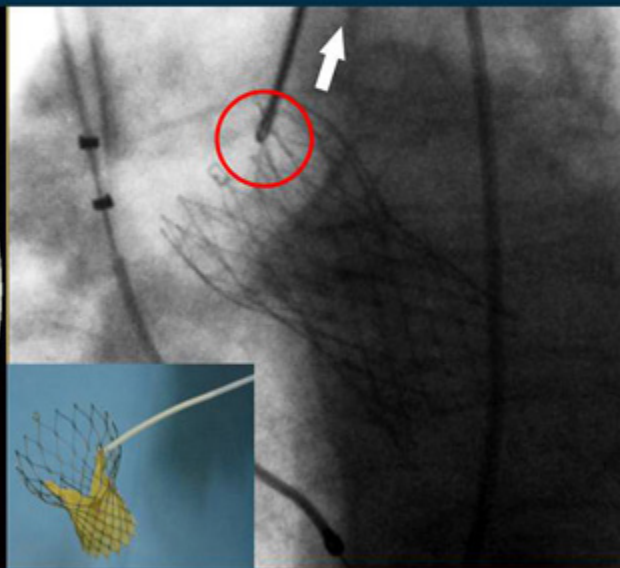
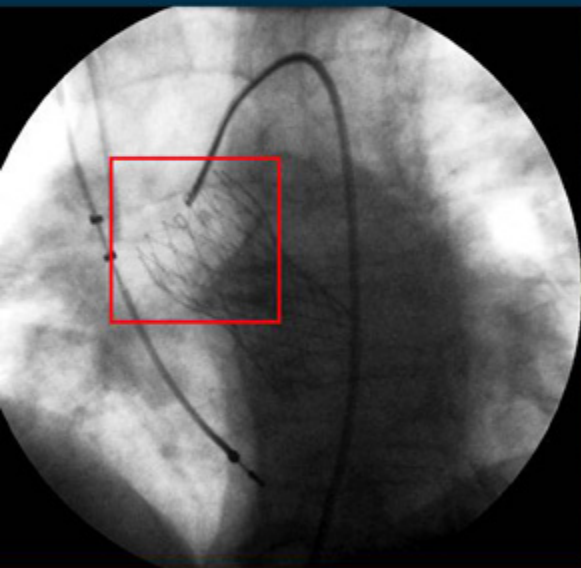






TAVR Tips and Tricks

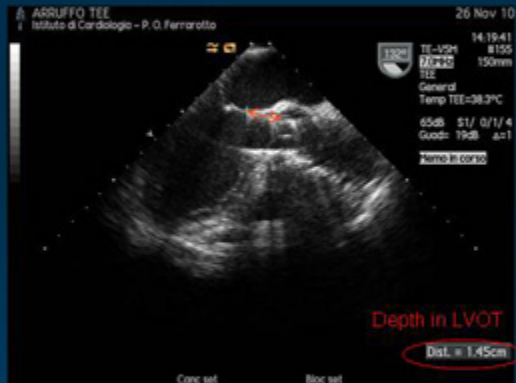
Snaring Technique



TAVR Tips and Tricks

Snaring Technique

- 83 y.o. Male, TAVI with 26-mm CRS, Post-procedure pulmonary oedema

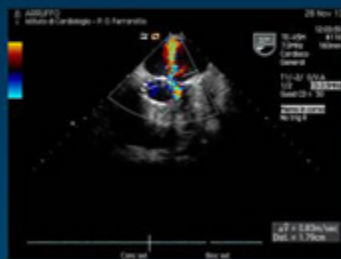
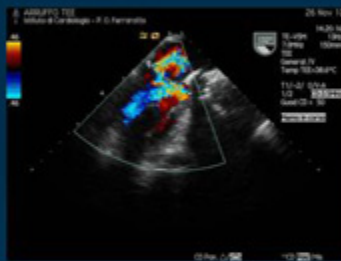


- Lower CRS implantation into the LVOT
- Tethering anterior leaflet



TAVR Tips and Tricks

Snaring Technique

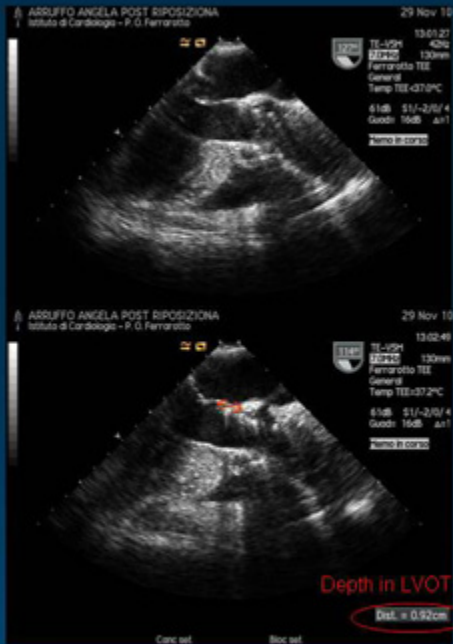


- Severe MR (+++/++++)
- Moderate PPL (++/+++)



TAVR Tips and Tricks

Snaring Technique



- ↓ depth into LVOT
- ↓ PPL (+/+++)
- ↓ MR (++)

TAVR Tips and Tricks

Valve-in-Value

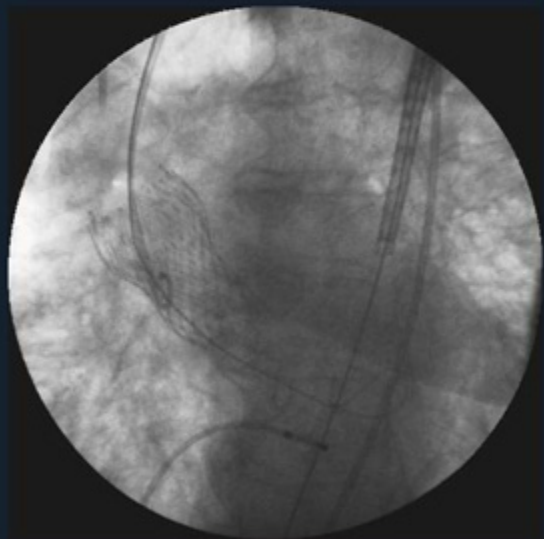
Severe PPL due to
higher implantation



TAVR Tips and Tricks

Valve-in-Value

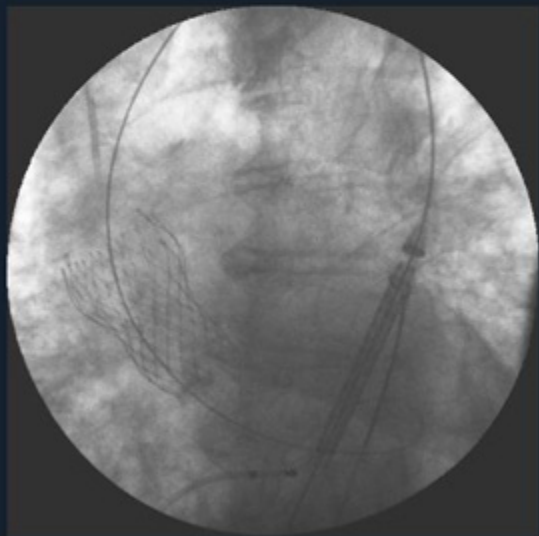
Advancing the second CRS...but it impinges against the first CRS implanted!



TAVR Tips and Tricks

Valve-in-Value

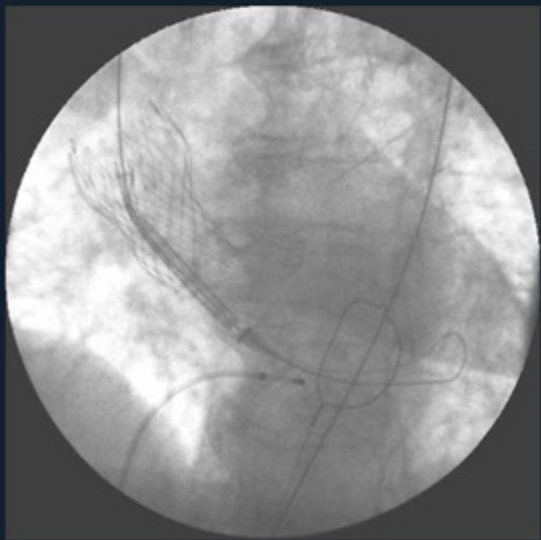
Snaring of the Delivery System



TAVR Tips and Tricks

Valve-in-Value

Second CRS placed
into the first CRS and
ready to be deployed



Conclusions

The best management of complications is based on:

- Prevention by a comprehensive screening before TAVI
- Training of the team on techniques and materials required for bailout procedures
- Anticipation of complications during the multidisciplinary evaluation before the procedure
- Fast identification of the complication and its cause
- Immediate availability of cardiac support and surgery if needed

