



Challenges of ostial coronary artery stenosis in a patient planned for TAVR

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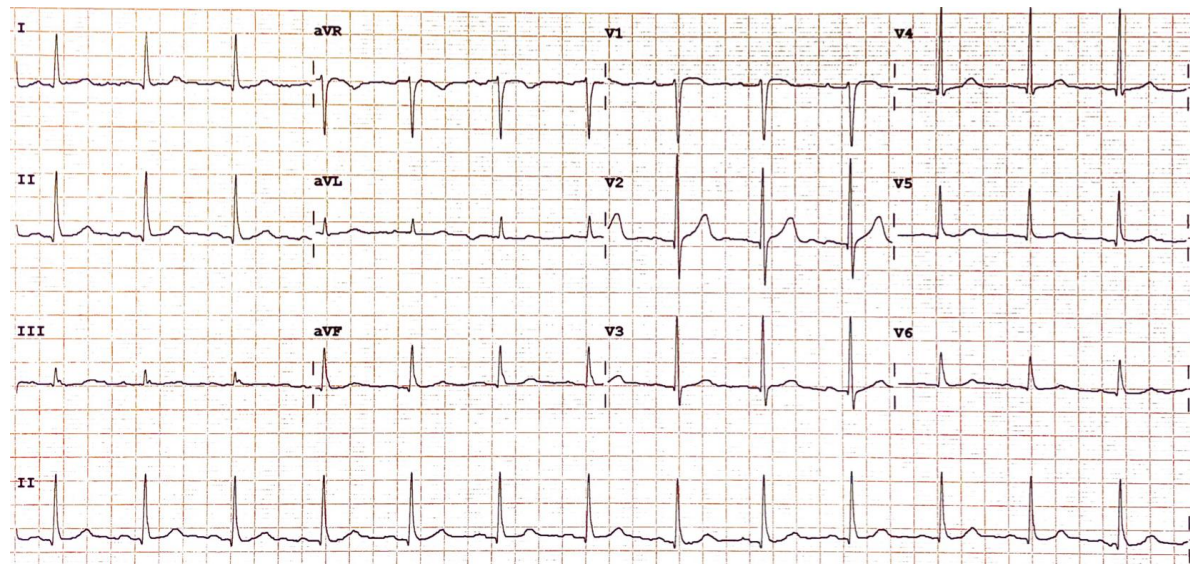
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- About one-half of TAVR candidates have coronary artery disease
- The decision of whether to revascularize, which lesions to revascularize, and the optimal timing of revascularization remains controversial
- Patients undergoing PCI pre-TAVR have complex coronary artery disease: calcified, ostial or multivessel disease

- 79 year old man
- Severe symptomatic aortic stenosis
 - CCS class II angina
 - Progressive exertional dyspnea NYHA II
- Past medical history
 - Type 2 diabetes mellitus
 - Hypertension
 - Hyperlipidemia
- Planned for TAVR
 - STS 2.88%
 - Proceeded to pre-TAVR workup

ECG and echocardiogram



Sinus rhythm

PR: 189 ms

QRS: 91 ms

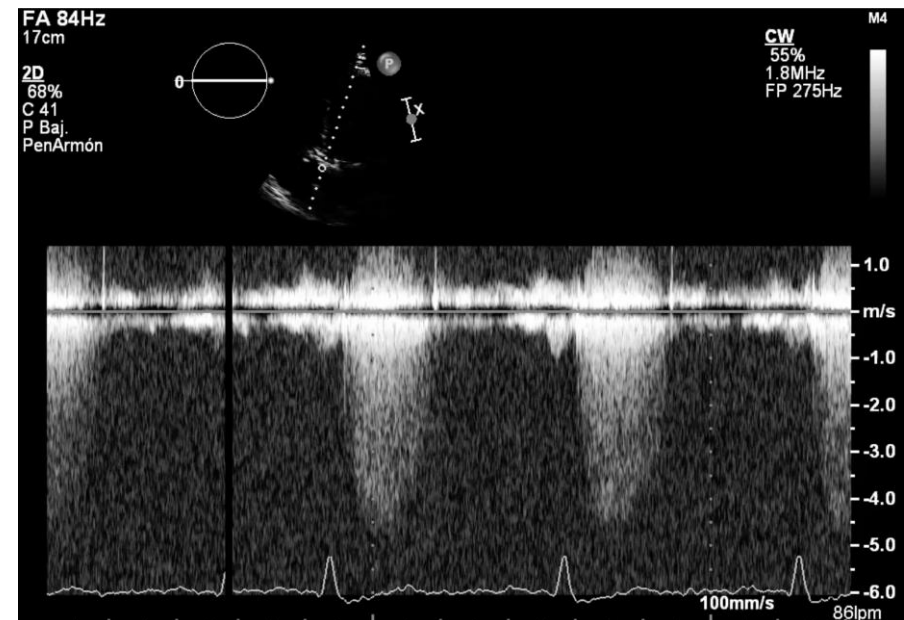
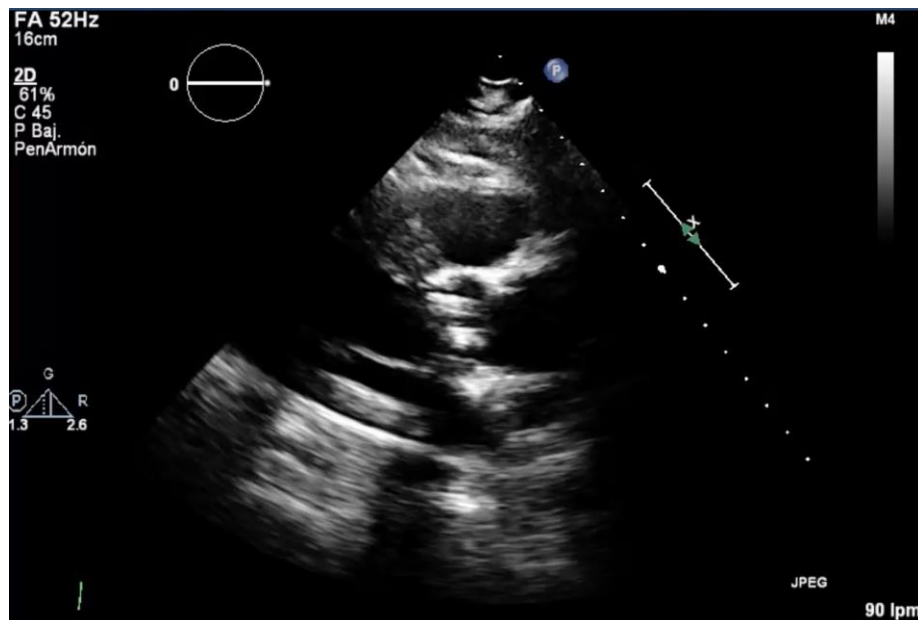
Severe calcific trileaflet stenosis

LVEF: 61%

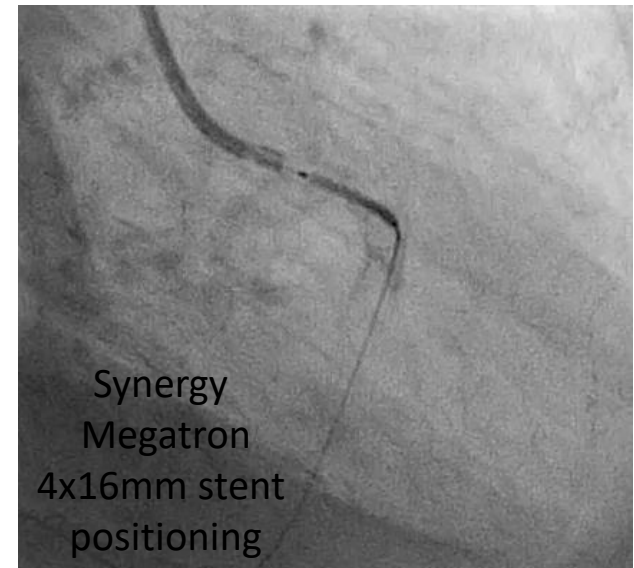
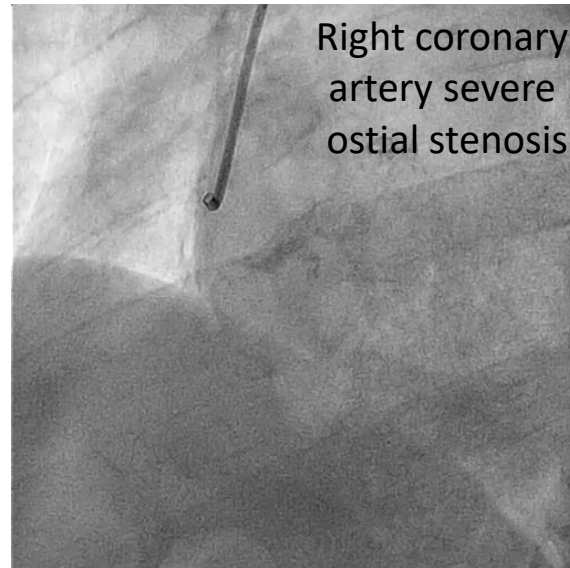
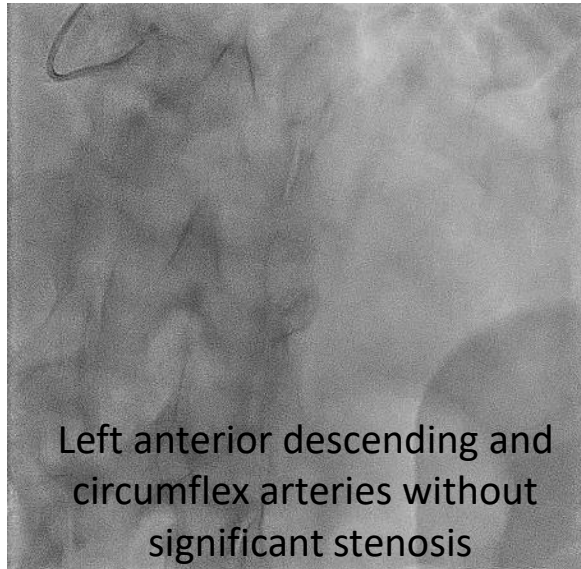
Max gradient: 112 mmHg

Mean gradient: 66 mmHg

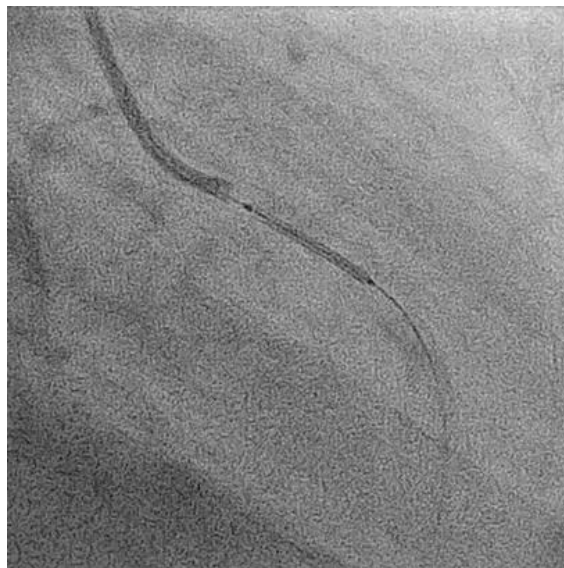
Aortic valve area: 0.5 cm^2



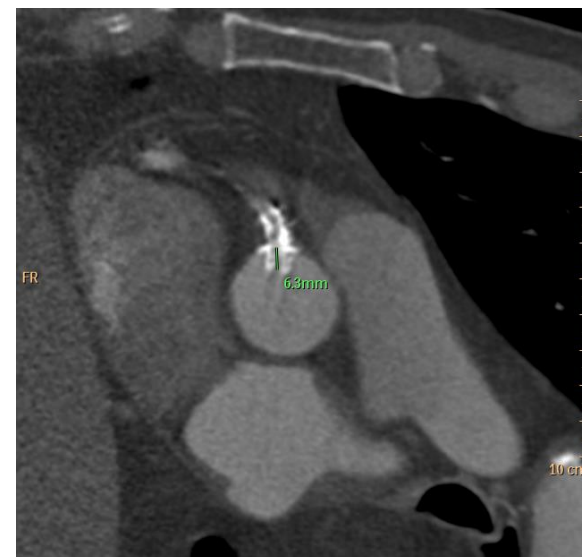
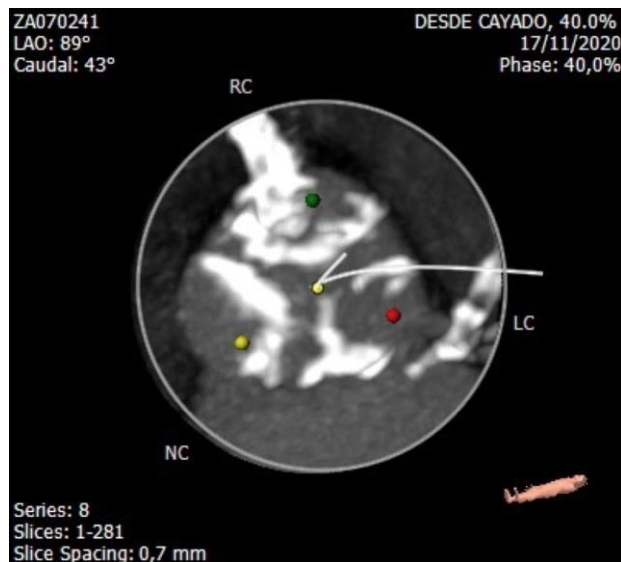
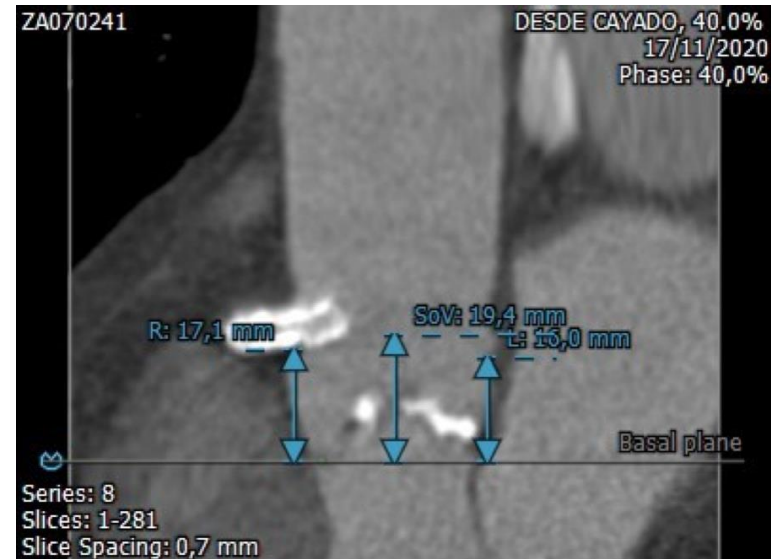
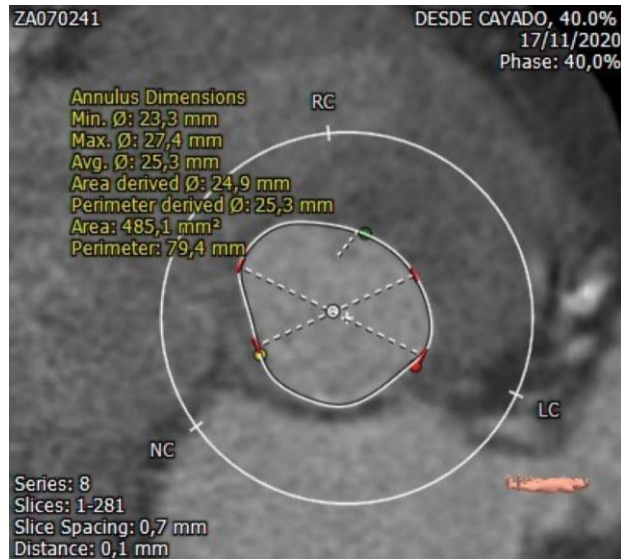
Coronary angiogram and Ostial Right Coronary Artery PCI



Stent
implantation

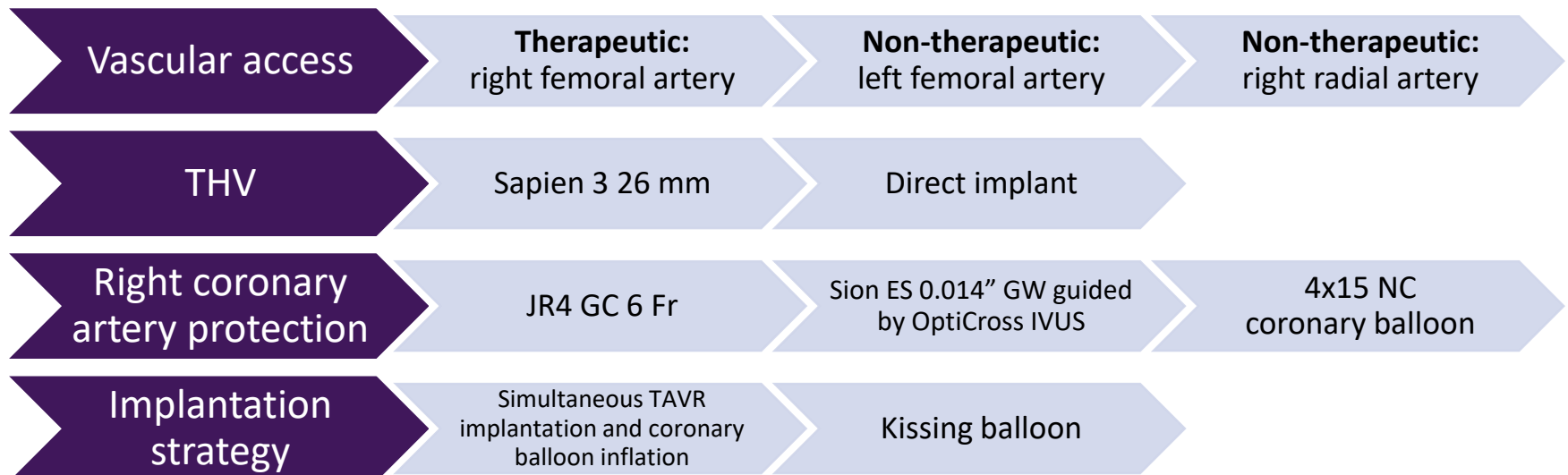


CT TAVR planning



Stent
protruding
6.3mm
in the aorta

- Challenges in the case
 - Ostial stent protruding in the aorta
 - Choice of THV that does not interfere with the stent
 - Consider length of THV stent (self-expandable valve)
 - Consider length of balloon (balloon-expandable valve)
 - How to protect the right coronary artery
- TAVR strategy



TAVR procedural considerations



Sapien 3 26 mm simulation

Distance form annulus plane to RCA: 17 mm

THV stent height: 20 mm

80%/20% depth of implantation strategy

16 mm of THV stent in aorta

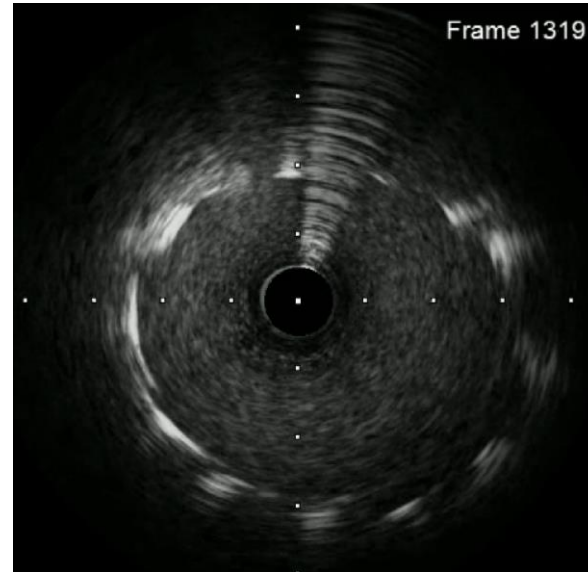
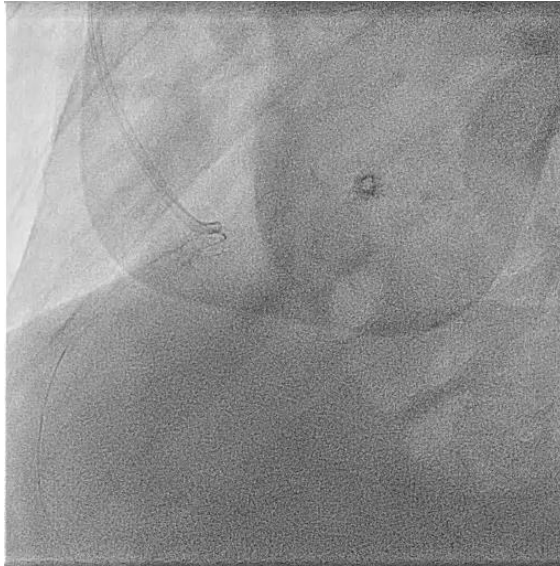


Edwards balloon length: 40 mm

High probability of crushing RCA stent

TAVR procedure

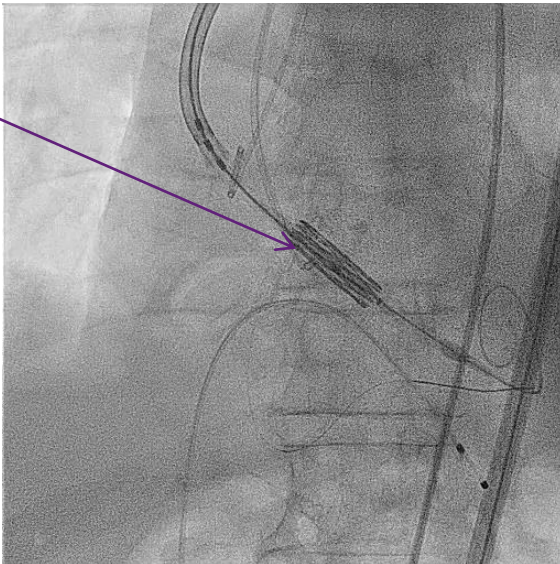
Sion guidewire
advanced to
distal right
coronary artery



IVUS confirmed
luminal crossing
of the guidewire

4x15mm NC
coronary balloon

Simultaneous
valve implantation
and coronary
balloon inflation
(kissing balloon)



Successful
S3 26mm TAVR
with preserved
stent structure
and coronary
blood flow

- Ostial PCI in TAVR patients remains a challenging procedural subset
- Protrusion of ostial stents can present difficulties when performing TAVR
- Careful consideration of TAVR type and implantation strategy is required when stents protrude excessively into the aorta
- CT planning and simulated TAVR implantation greatly assist in procedure planning, and influence procedural success
- Careful consideration of the indication for pre-TAVR revascularization is of paramount importance to avoid PCI related complications