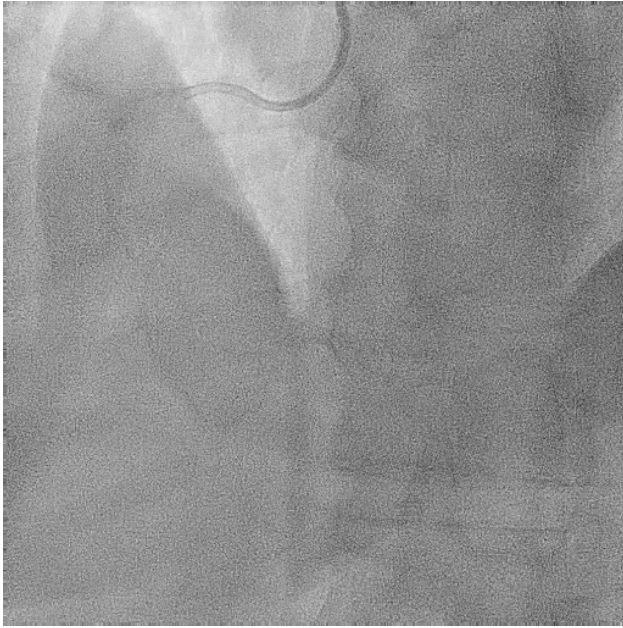


Live coronary CT-guidance in minimalistic hybrid algorithm for CTO PCI

Implementation of live 3D CT-scan reconstruction in the cathlab for
plaque characterization and CTO visualization enhancement.

Case presentation

- 79-year-old man, with typical angina symptom (CCS 2). Previous PCI on Circumflex coronary artery.
- CT-scan assessment revealed: chronic total occlusion (CTO) of the distal right coronary artery (RCA).



Mid-RCA chronic total occlusion:
distal visualization from septal collaterals via LAD

P4 study enrollment

Patient was enrolled in the Precise Procedural and PCI Plan (P4) Study and scheduled for PCI.

Precise Procedural and PCI Plan (P4)

ClinicalTrials.gov Identifier: NCT05253677

Recruitment Status ⓘ : Recruiting

First Posted ⓘ : February 24, 2022

Last Update Posted ⓘ : June 2, 2022

**Live integration of
CT scan 3D reconstruction
in the cathlab during PCI**

versus

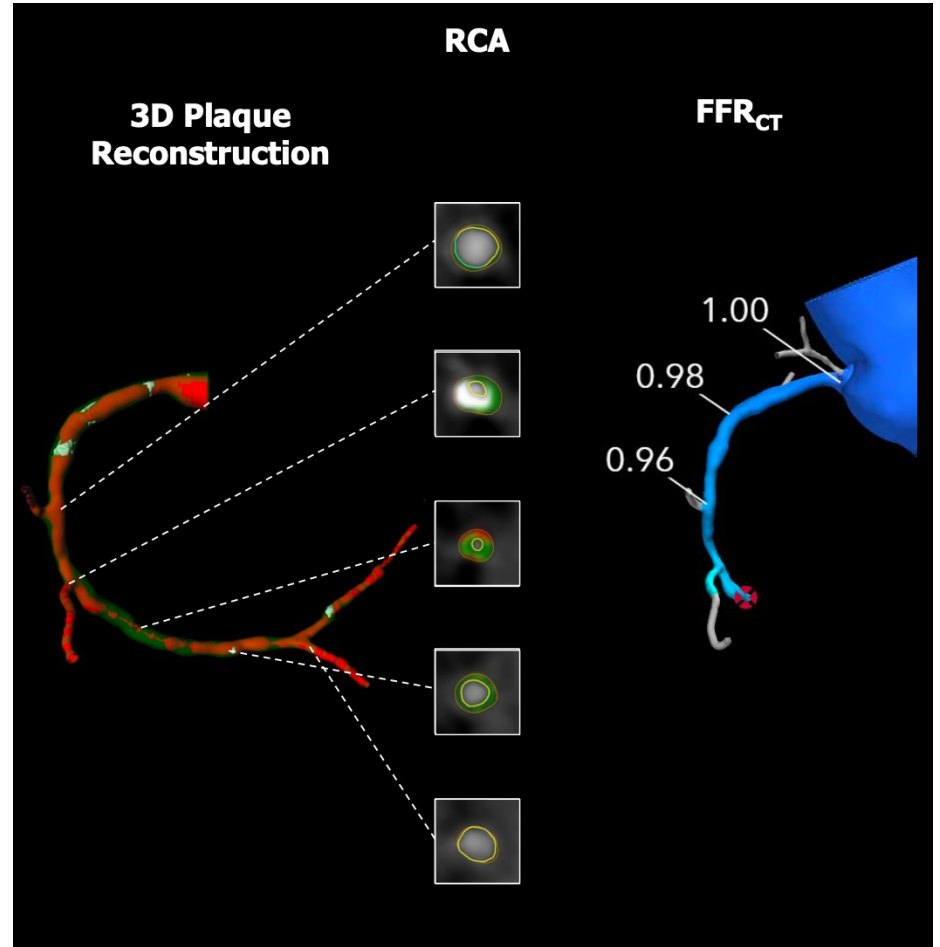
**Intracoronary guidance
(IVUS)
during PCI**

P4 study enrollment

**Randomized to CT scan
group:
CT scan reconstruction.**

In-depth plaque characterization:

- Low calcium burden
- Lesion length 30 mm
- No bend $> 45^\circ$
- Tapered cap

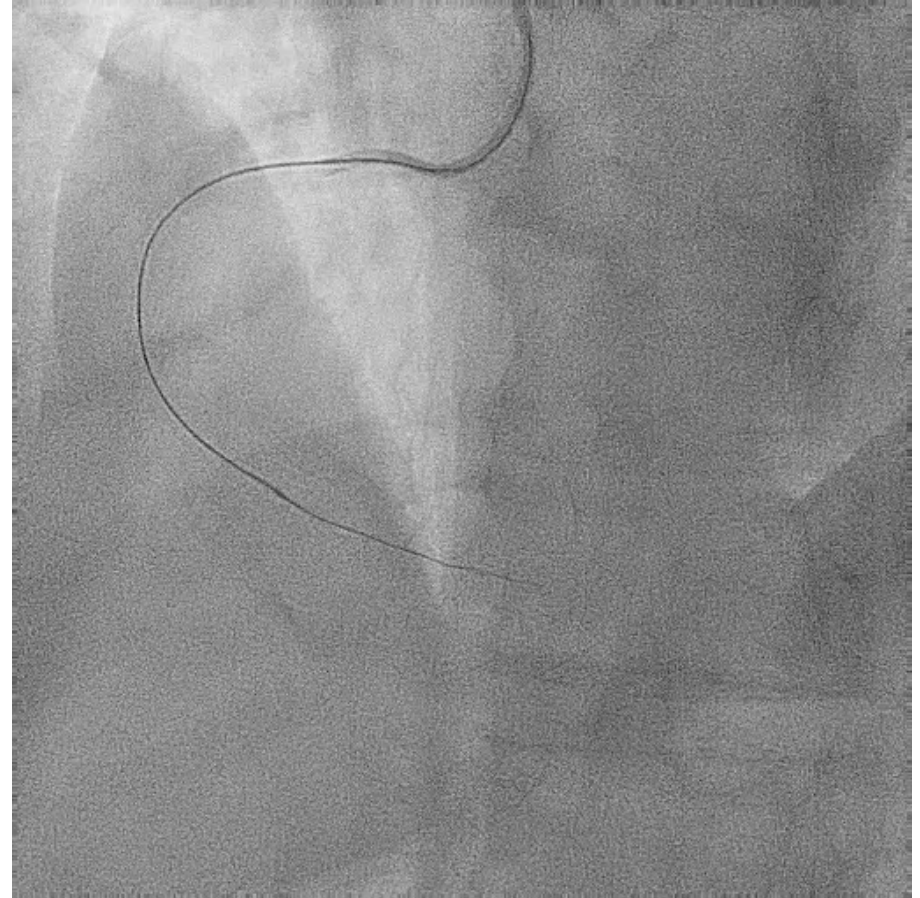


Procedural strategy

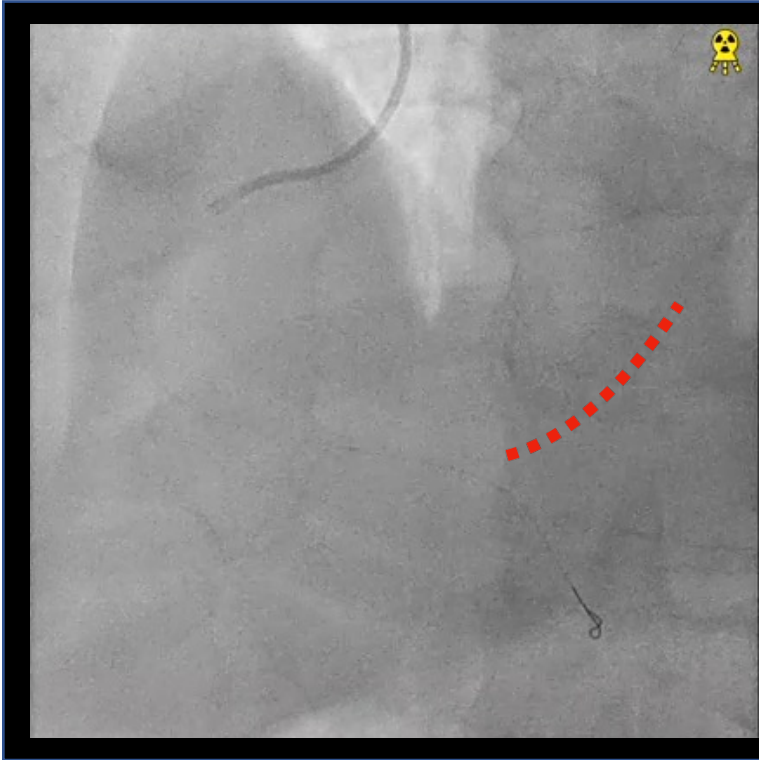
Minimalistic hybrid approach:

- Single catheter 6 Fr via radial access
- Antegrade blind wiring approach
- Fielder XTR with MambaFlex microcatheter

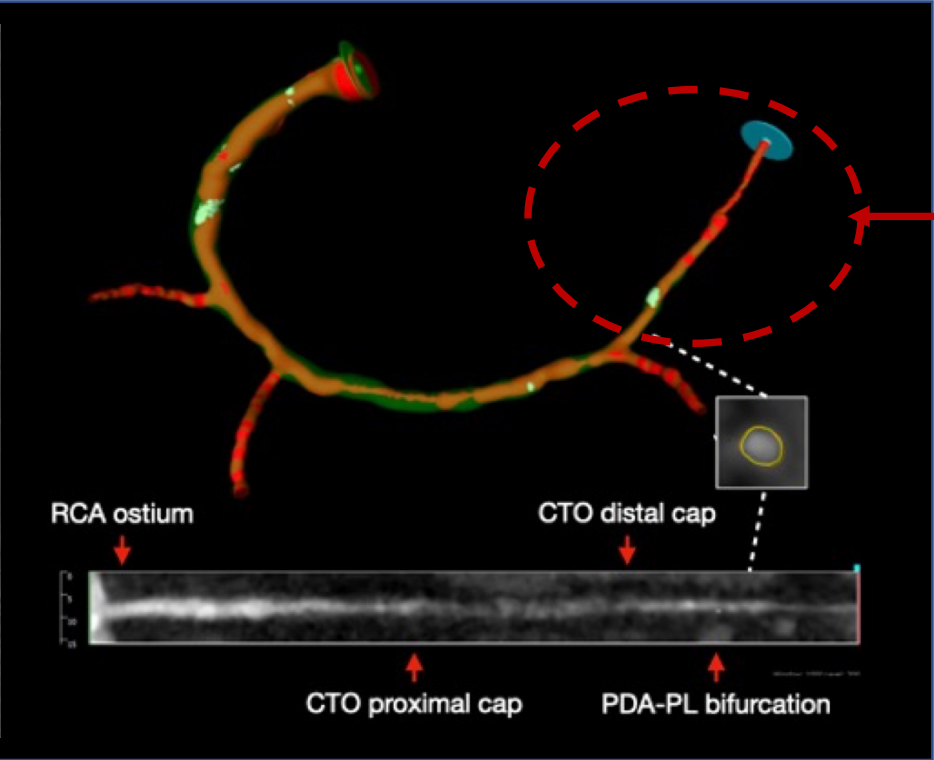
Wiring of the right posterior
descending (PD) branch



Live 3D CT-scan reconstruction

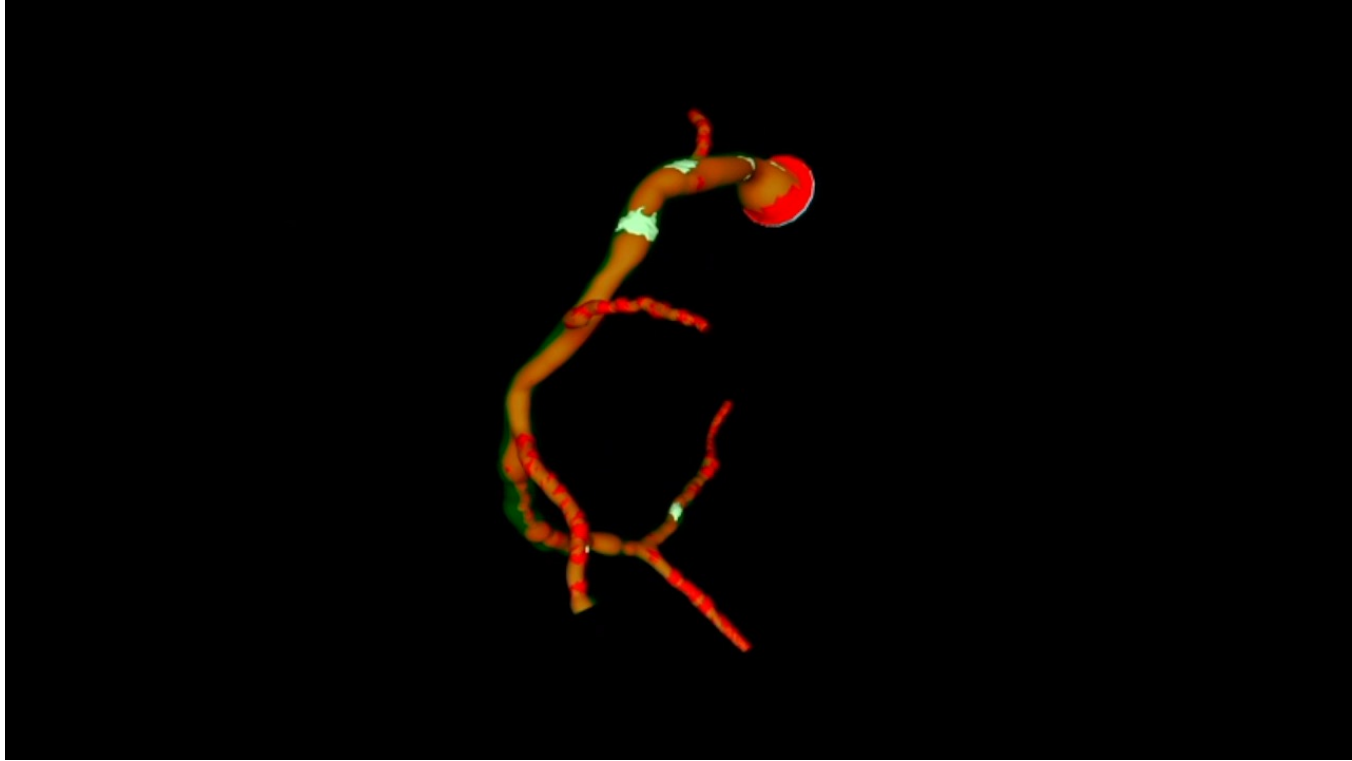


Gentle pre-dilation with 2.0 mm balloon



Do we miss something here???

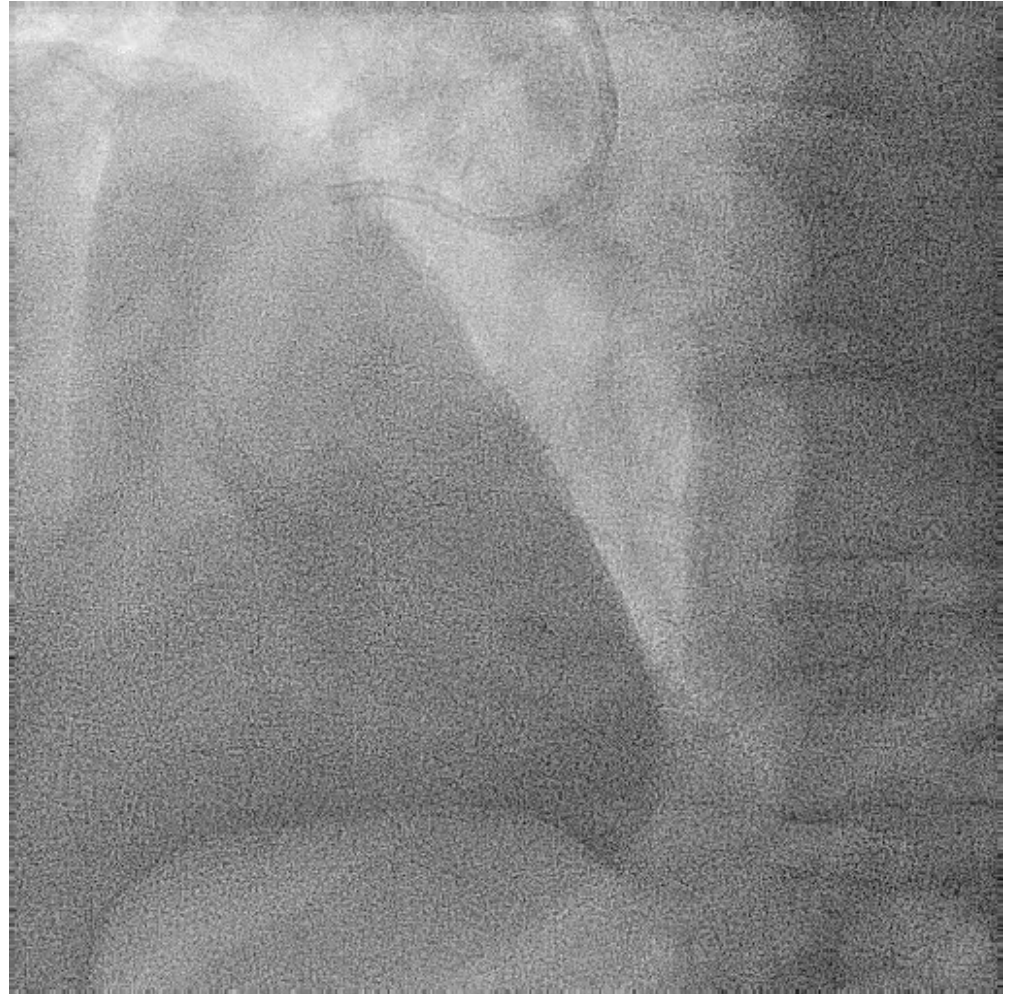
3D CT-scan visualization enhancement



Based on CCTA guidance visualization enhancement, the “angiographically invisible” PL vessel was wired with Fielder XT-R, reaching the final complete recanalization of the distal RCA.

Final result

The procedure ended with the implantation of two overlapping drug-eluting stents and a good angiographic result.



Take Home Messages

- Implementing 3D-CCTA in the cathlab for PCI guidance is a promising tool to optimize revascularization by providing an online three-vessel coronary plaque characterization and spatial orientation.
- This technology has additional benefits when applied to CTO recanalization, allowing enhanced visualization of the occluded vessel leading to optimized strategies for recanalization.
- As one of the landmark of the minimalistic hybrid algorithm, a «blind antegrade wiring» may be considered as initial strategy in selected cases of CTO PCI, mainly for CTOs with low J-CTO score.