

Staged CTO PCI: The investment that pays dividends

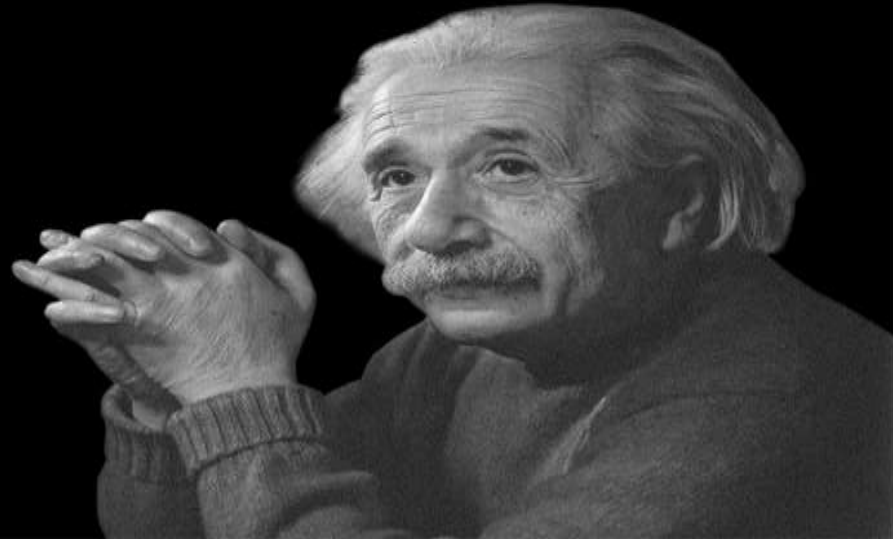
Sliman Hussein

Netherland Amsterdam VUMC Hospital

Israel Haifa Carmel Hospital

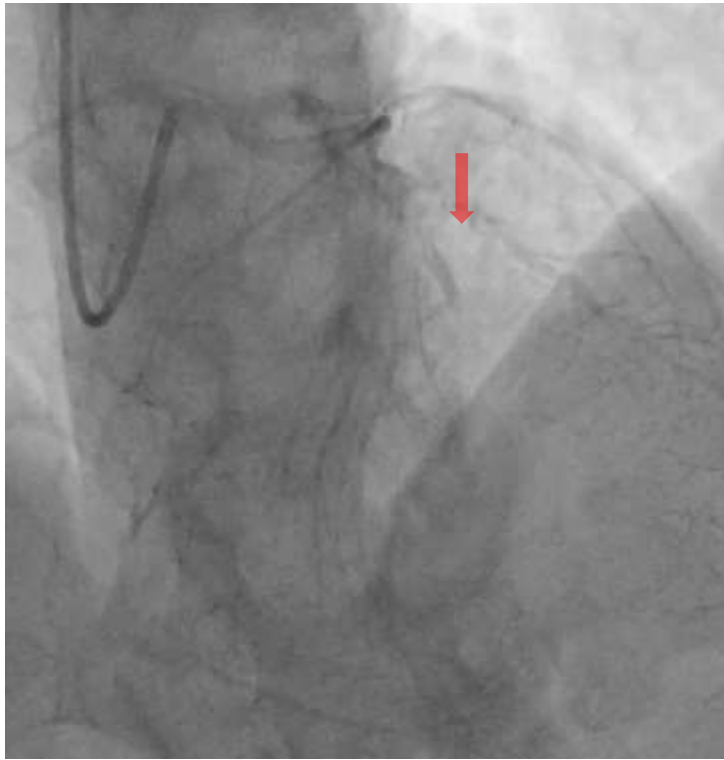
~~FAILURE~~ INVESTMENT is SUCCESS in PROGRESS

- Albert Einstein



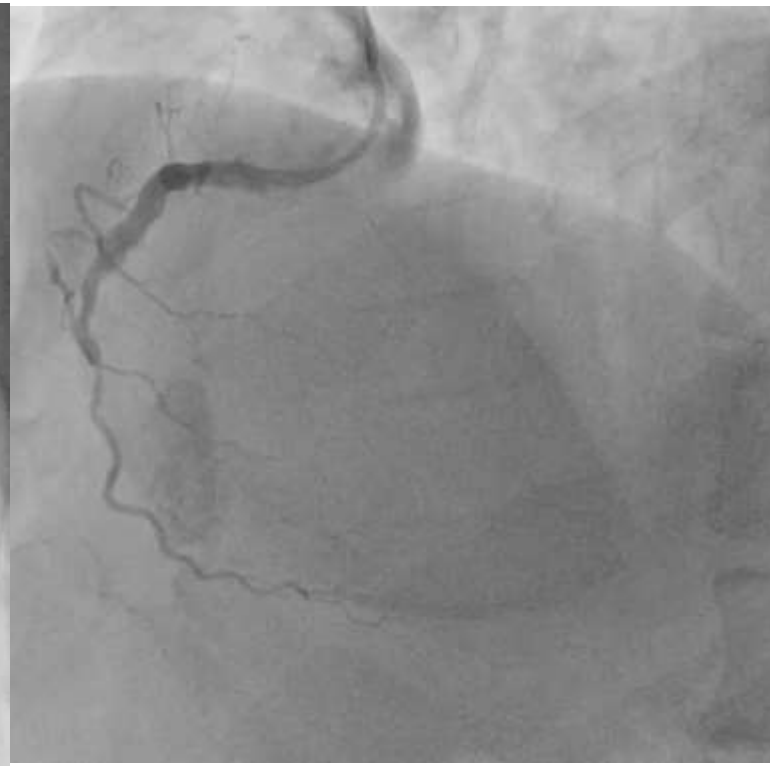
Case of the day

- 52 years old male
- Hypertention and hypelipedemia
- 5-10-2022 Acute anterior myocardial infarction.



Case of the day

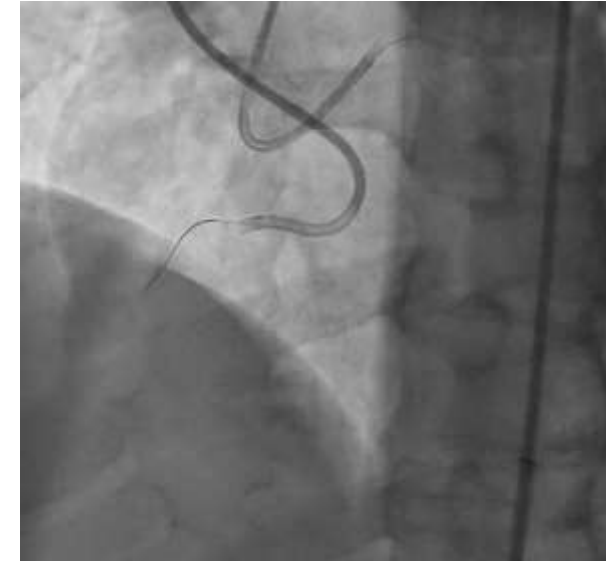
- 2 DES were implanted in the mid LAD .
- coronary angiography also showed CTO of the RCA, with collateral filling from LAD



J-CTO SCORE SHEET Version 1.0

Variables and definitions

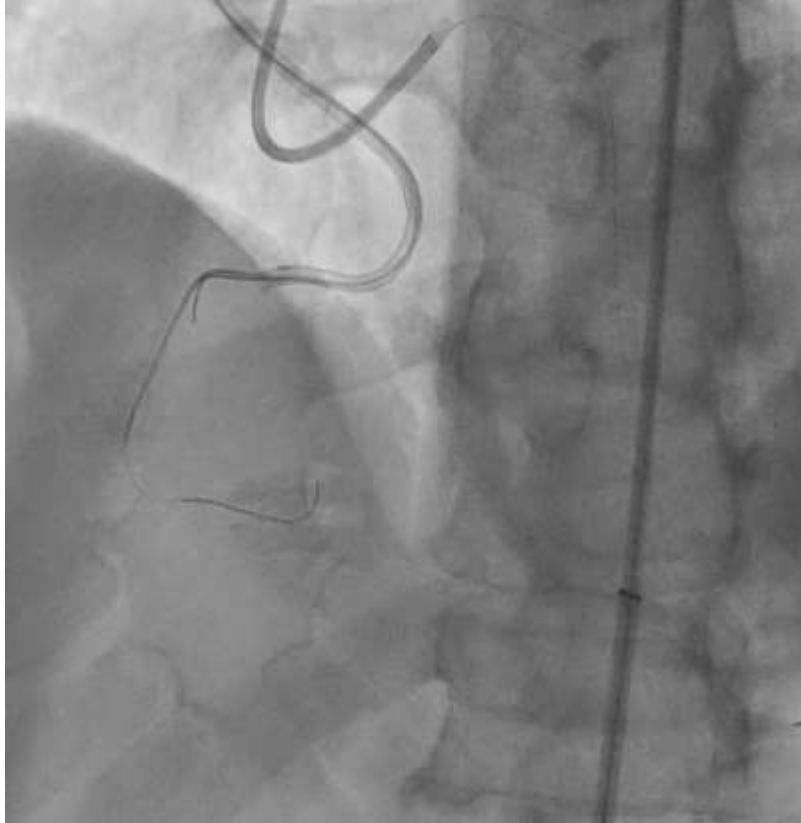
Typical	Atypical	Entry criteria
		<input type="checkbox"/> Typical (1) <input type="checkbox"/> Atypical (1)
Calcification Regardless of severity, 1 point is assigned if any extent of calcification is detected within the CTO segment.		Calcification <input type="checkbox"/> Absence (0) <input type="checkbox"/> Presence (1)
Bending > 45 degrees One point is assigned if bending > 45 degrees is detected within the CTO segment. Any tortuosity distal from the CTO segment is excluded from this assessment.		Bending > 45 <input type="checkbox"/> Absence (0) <input type="checkbox"/> Presence (1)
Occlusion length Using good reference images, try to measure the "true" distance of occlusion, which tends to be shorter than the first impression.		Occlusion length <input type="checkbox"/> < 20 mm (0) <input type="checkbox"/> ≥ 20 mm (1)
Re-entry lesion Is this Re-entry (not along) lesion (previously attempted but failed)?		Re-entry lesion <input type="checkbox"/> No (0) <input type="checkbox"/> Yes (1)
Category of difficulty (total point) <input type="checkbox"/> easy (0) <input type="checkbox"/> intermediate (1) <input type="checkbox"/> difficult (2) <input type="checkbox"/> very difficult (≥ 3)		Total points



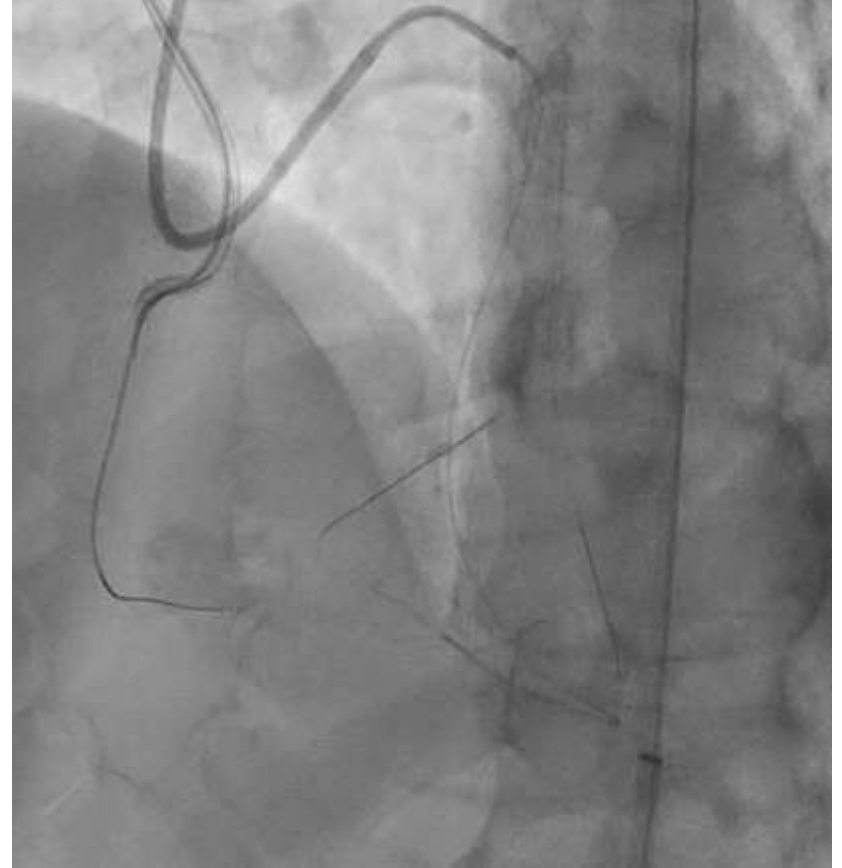
J CTO SCORE 4

Coronary angiography showed CTO of the distal RCA (just after RV branch) with ambiguous cap, with retrograde septal collaterals from LAD CC2, long calcified CTO body, small and diffusely disease at the distal landing zone.

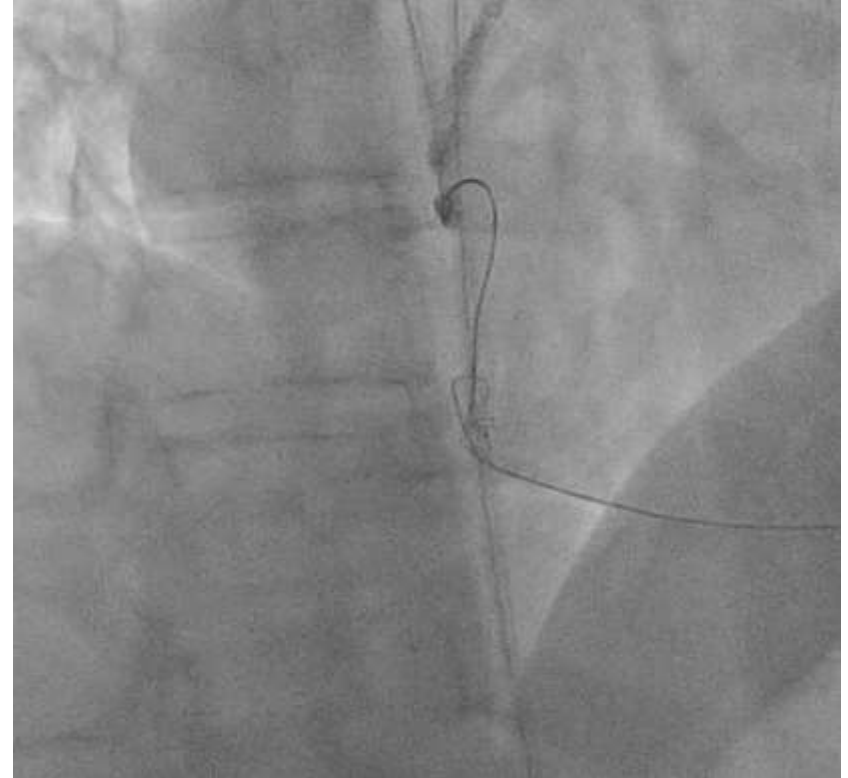
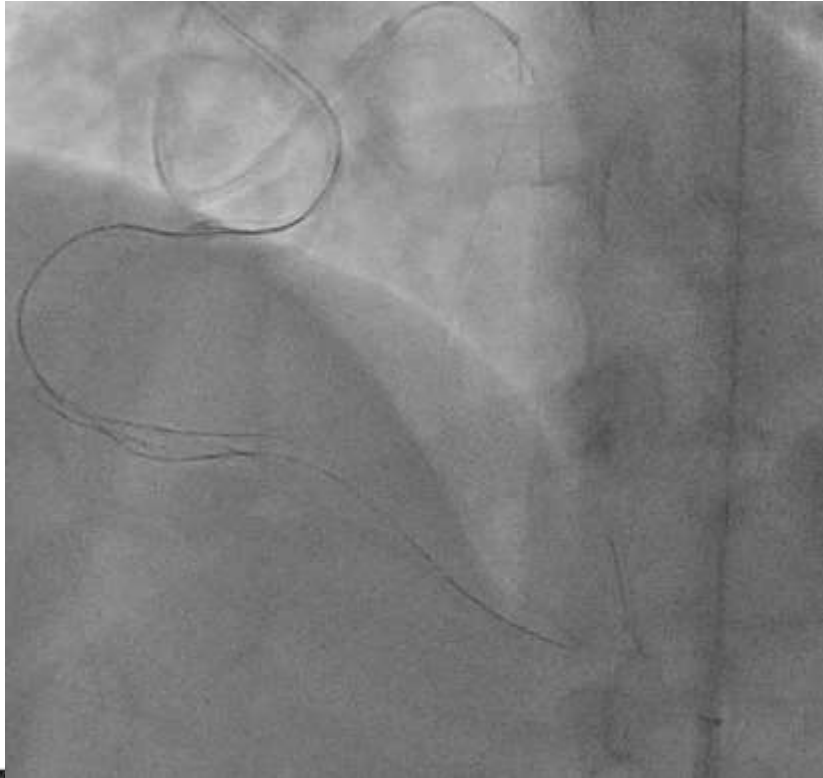
The initial strategy was a short attempt of antegrade wire escalation that failed, so we performed ADR as preparation for Revars CART



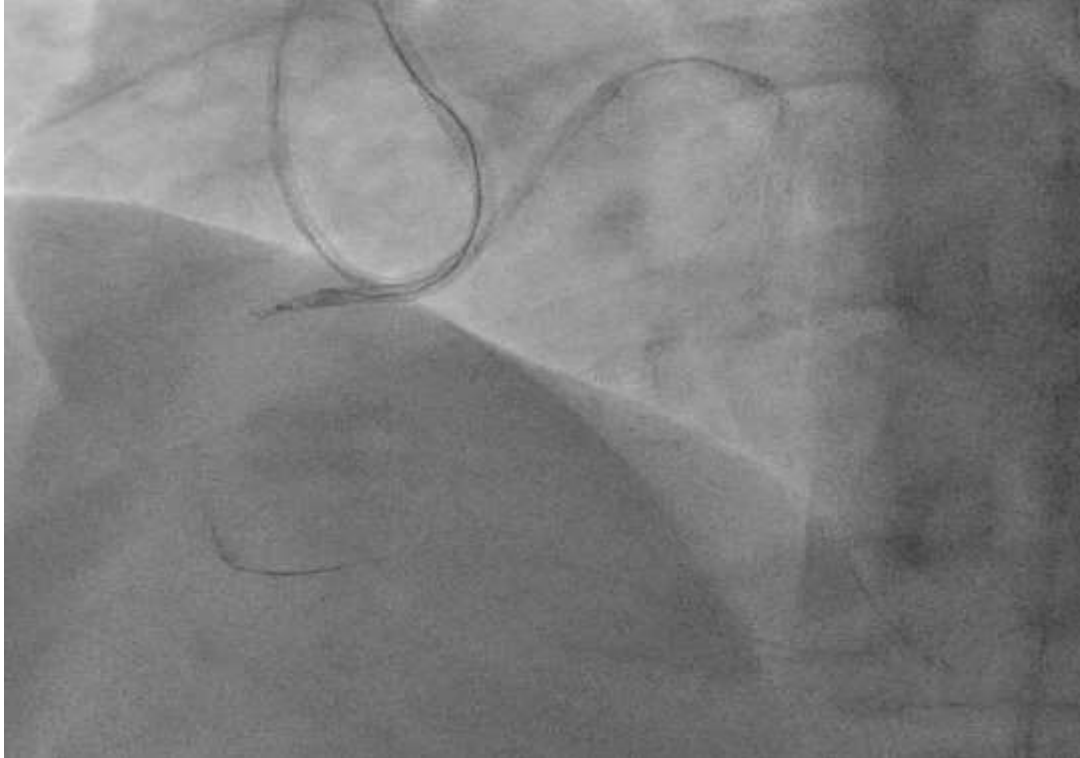
In retrograde approach we succeeded to advance the sion wire via septal collateral to distal RCA.



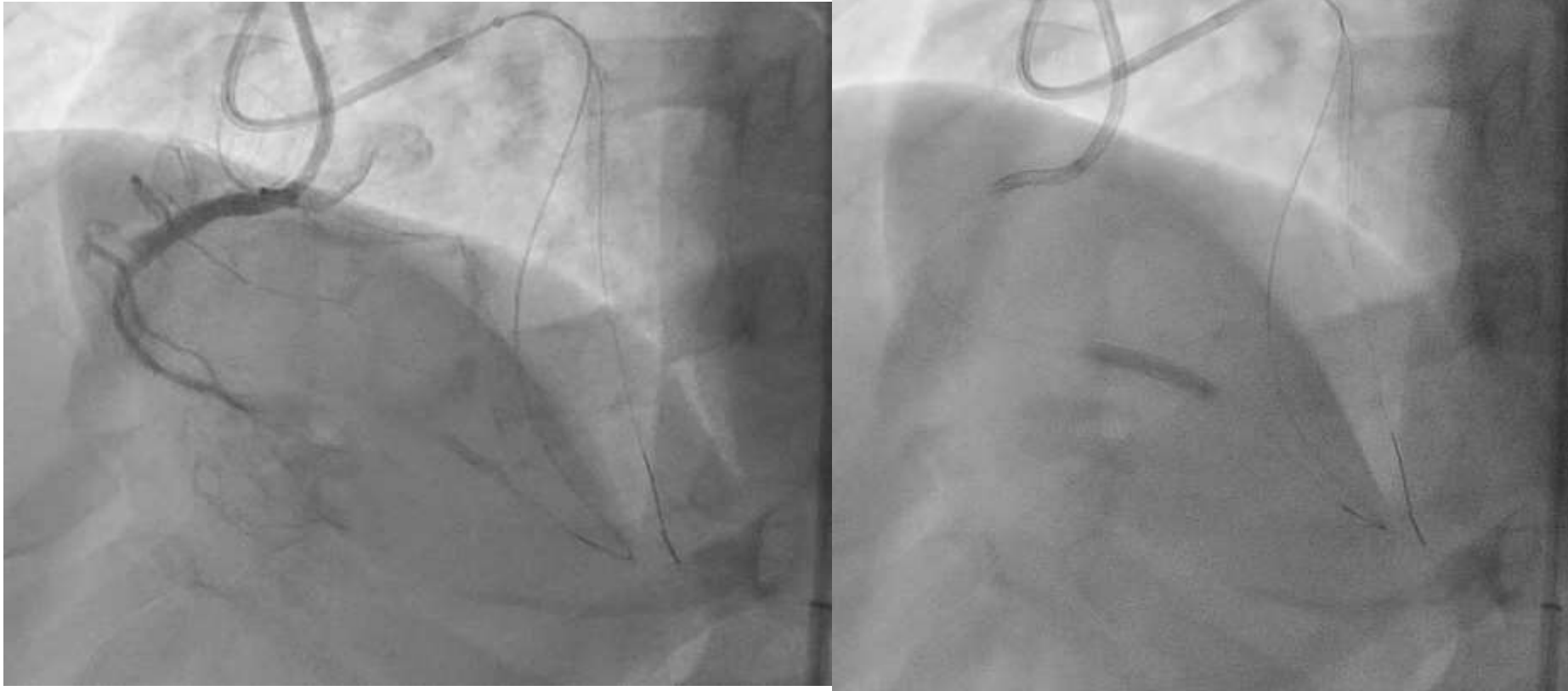
A dissection antegrade and retrograde technique were performed, and the REVERSE CART was successful



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Balloon inflation and IVUS were performed with a final result of long subintimal trajectory with TIMI 1 flow, and according to that we reinflated a balloon and declared it as an investment procedure.



6 week later , coronary angiography was reattempted, revealing improvement of the result of RCA artery with TIMI FLOW 3, pre and post-dilatation NC balloons were performed.



4 overlapped DCB were implanted from distal to proximal RCA with a good result confirmed by IVUS.



- ✓ For those who perform CTO recanalization, initial failure does not mean the vessel cannot be opened later.
- ✓ It is important for operators to not only be well experienced, highly skilled, and equipped with the appropriate tools but also to consider the benefits in an investment procedure before classifying an intervention as a failed attempt.
- ✓ Investment procedures allow for the CTO vessel to form an antegrade tract, that can be successfully wired in the subsequent procedure.

- ✓ If repeat PCI is performed after subintimal plaque modification, it is best to let the vessel heal for at least 40- 60 days before reattempting the procedure for the best results, which led to safer repeat procedures, with greater success and shorter length stents.
- ✓ A second procedure in a CTO can result in high success rate (83%).

~~Failure~~

Investment

Success