



# The Investment Procedure as a Bailout Strategy for CTO PCI

**El Nasasra Aref, MD**

Soroka University Medical Center, Faculty of Health Sciences, Ben-Gurion University of the Negev





I, El Nasasra Aref *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.





## Introduction

- CTO PCI success rates vary from 85-92% in contemporary practice
- There are as many 'modes of failure'
- Bailout techniques are designed to overcome the challenges of CTO interventions and improve success rates in the future





## Case History

- 67-year-old male with known CAD and RCA CTO
- CCS III angina, under BB and CCB therapy
- Risk factors: dyslipidemia, diabetes, post CVA
- GFR :127 ml/min, HB 12.7 gr/dl
- Mild LV dysfunction with inferior wall motion abnormality on TTE
- Inferior ischemia on MPI





## Dual injection LAO

**Proximal cap:** tapered  
**Length:**  $\geq 20$  mm  
**Distal vessel:** ill diseased  
distal vessel  
**Collaterals:** suboptimal

### Plan

1. AWE
2. ADR?
3. Retrograde





Dual  
 injection  
 RAO







MC Corsair Pro XS

Fielder XT-A

Gaia 3





LAO

Subintimal

Conquest Pro 12

Gladius







RAO

Subintimal

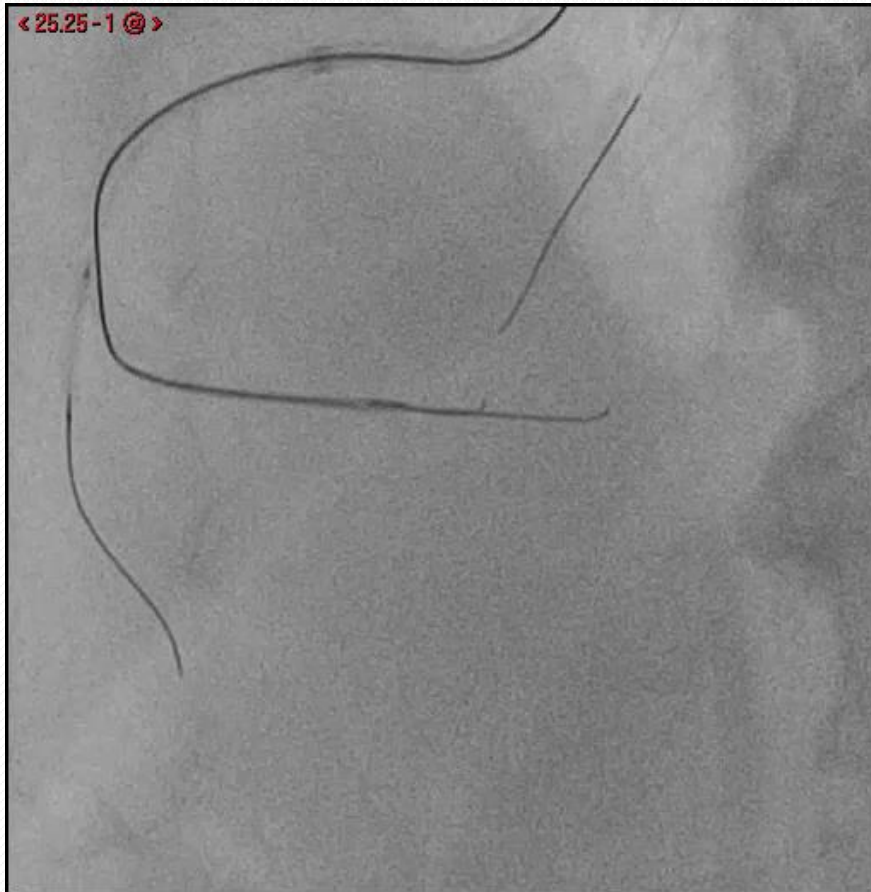
Conquest Pro 12

Gladius





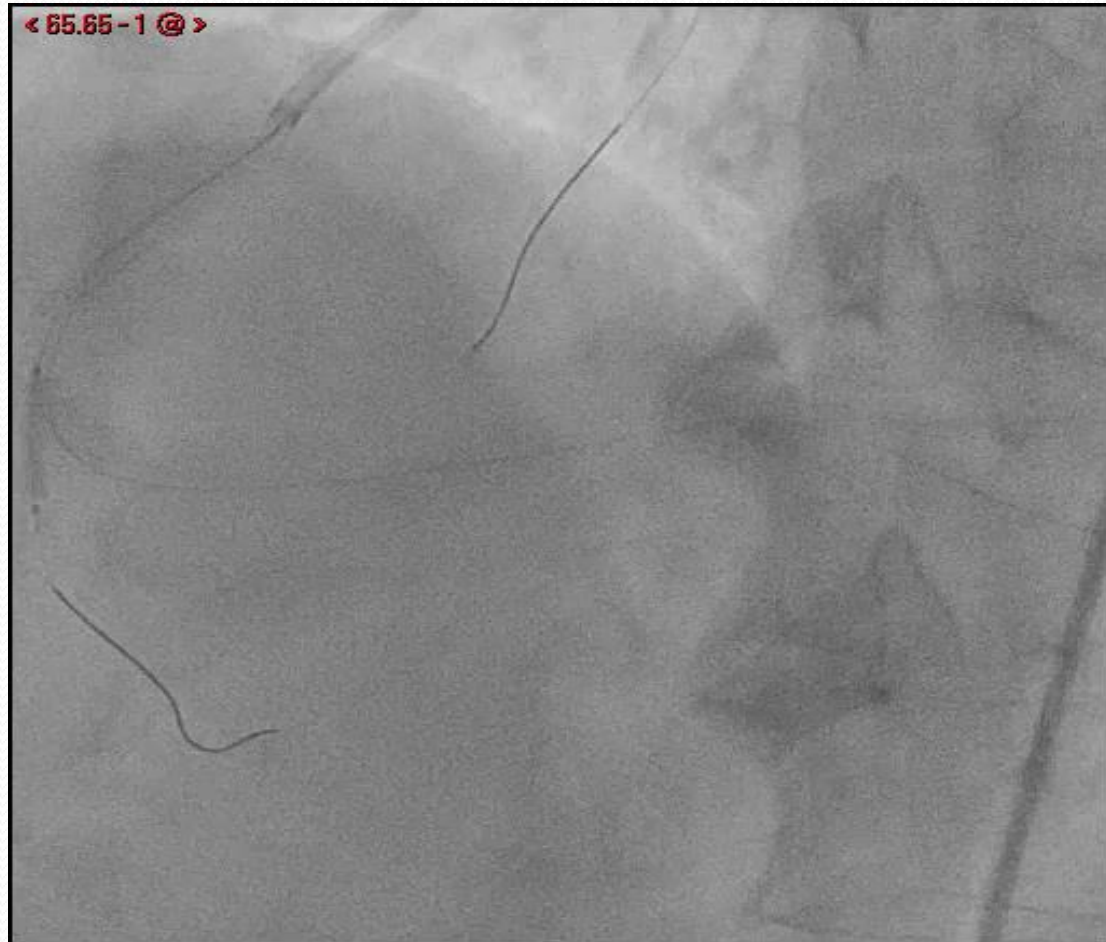
## DLC (Sasuke)





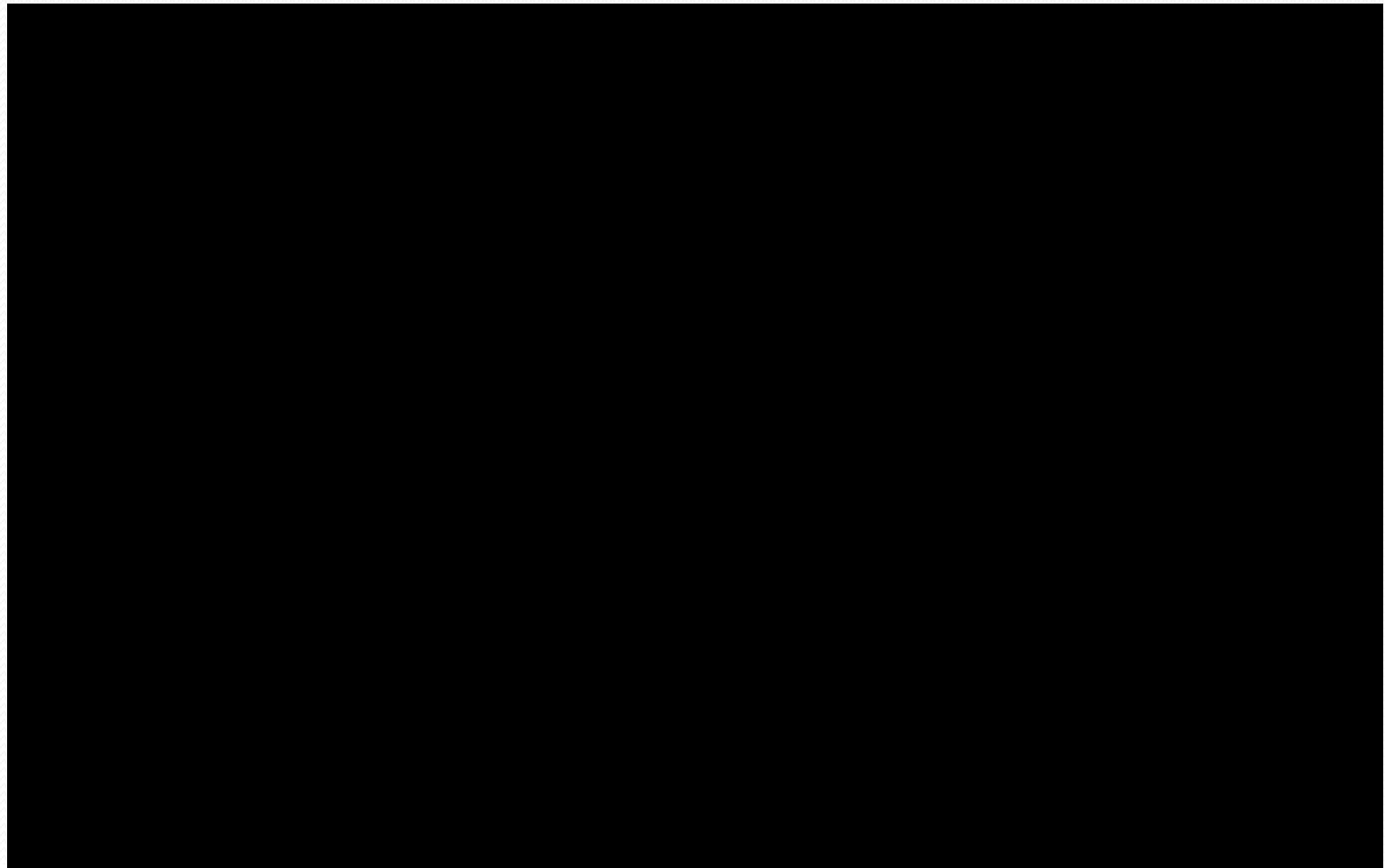
## ‘Investment’ with balloon (2.0 mm)

Procedure time: 80 min  
Contrast volume: 350 ml  
Air kerma radiation dose:  
4 Gray.





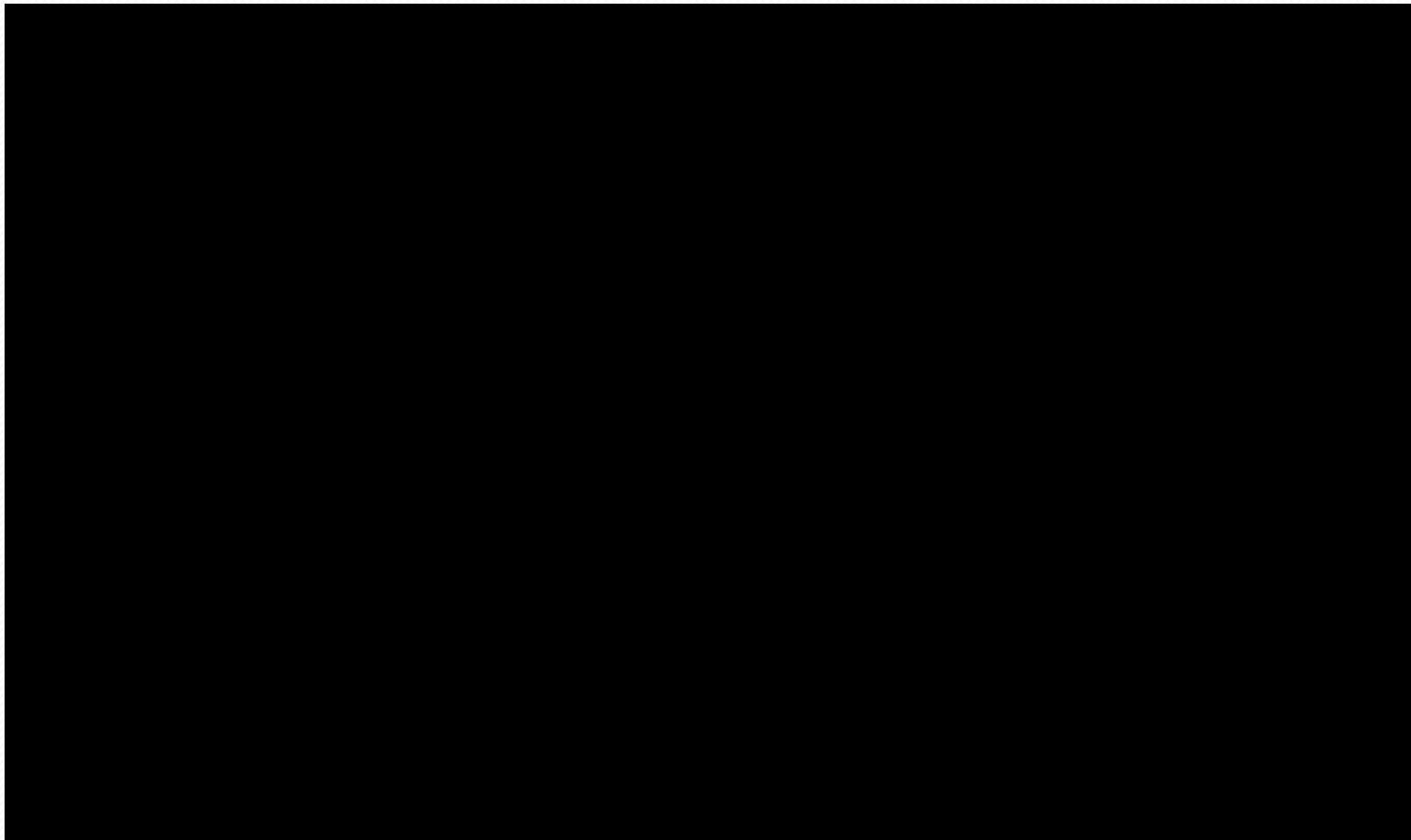
## Repeat angiogram at 3 months...





## Repeat angiogram at 3 months...

Fielder FC







## Final result



## Summary

- CTO PCI failure rates vary from 8-15% (or more)
- Subintimal plaque modification to restore some antegrade flow can promote subsequent lesion recanalization (investment procedure)
- Improving patient safety (reduce overall radiation and contrast exposure)
- Patients need to be followed closely after an investment procedure (20% early re-occlusion rate)
- The optimal time for a re-intervention varies from 6 weeks up to 6 months.



## Ongoing clinical trial (NCT04774913)

### Invest-CTO: Effectiveness and Safety of a Planned Investment Procedure in High-Risk CTO PCI

CTO PCI completed as a two step procedure with an initial planned CTO modification and a completion procedure after 8-12 weeks.





THANK YOU FOR YOUR ATTENTION

