

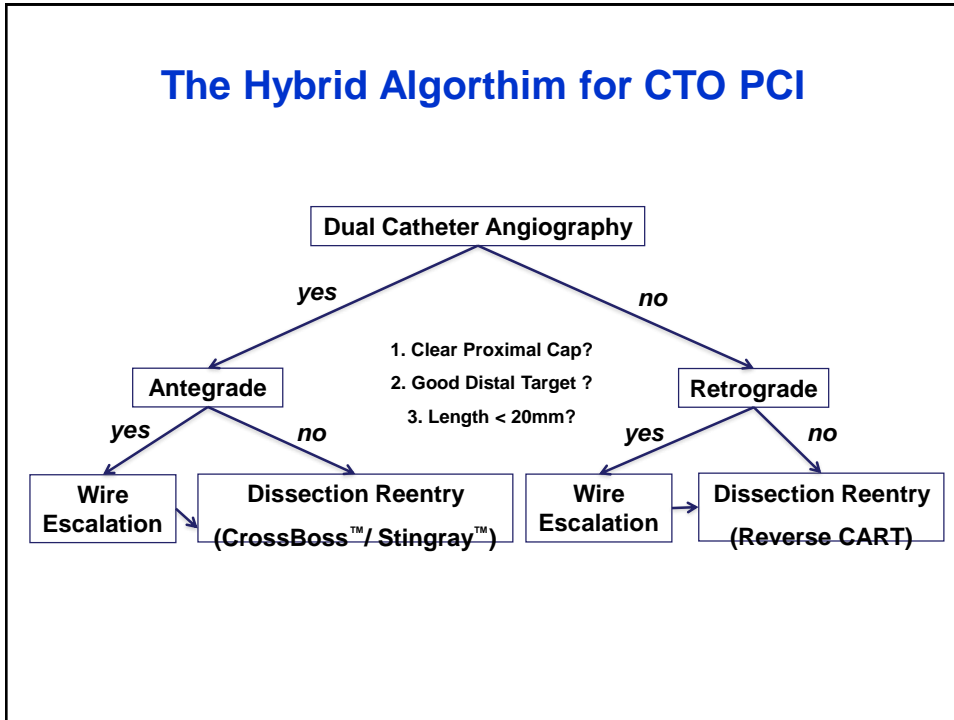
Antegrade Dissection Reentry ADR

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Chronic Total Occlusions

- Chronic total occlusions (CTO) are frequently found on coronary angiography but the rate of CTO percutaneous coronary intervention (PCI) has remained low in most countries.
- In recent years, there has been a renewed interest in CTO PCI.
- With the advent of novel techniques and equipment, CTO PCI has evolved into a safer and more efficient procedure.
- The main benefits of CTO PCI are relief of angina, improvement in quality of life and achievement of complete revascularization.

The Hybrid Algorithm for CTO PCI



AWE

1- Clear proximal cap

2- Clear distal target

3- Long and calcified CTO

4- Lack of collaterals

5- Incomplete

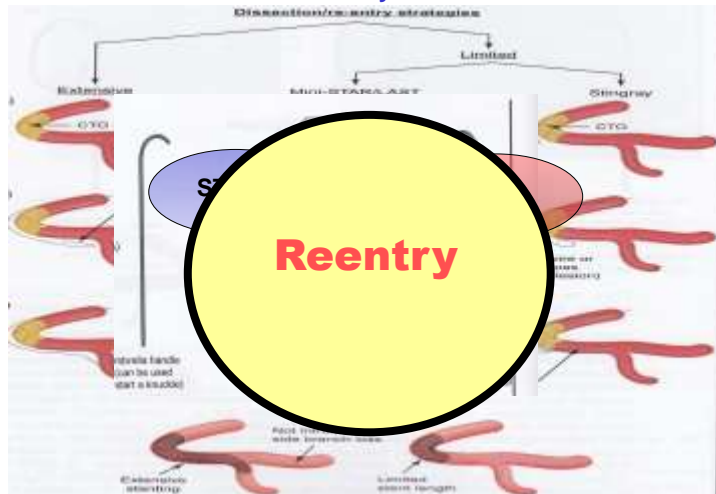
Increasing length and complexity of the CTO

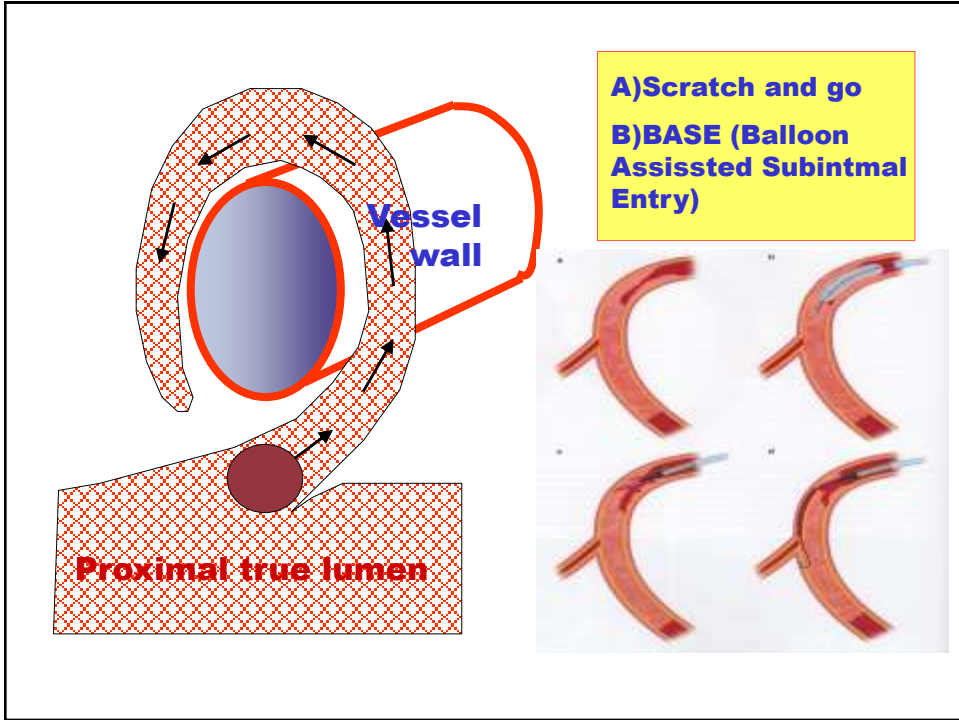
Lack of appropriate collaterals

Antegrade Dissection Reentry (ADR)

1st: Dissection

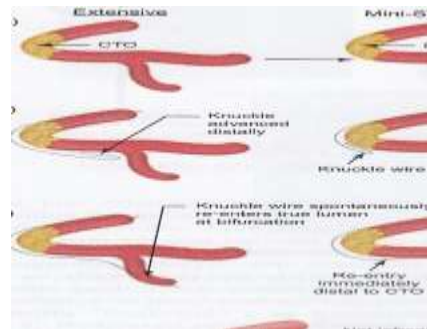
2nd: Reentry





Subintimal Tracking and Reentry STAR

This approach involved folding over a hydrophilic wire (or creating a knuckle) that was pushed into the distal artery



However the site of wire re-entry was unpredictable and could result in restoration of flow to a small terminal branch

Contrast Based STAR

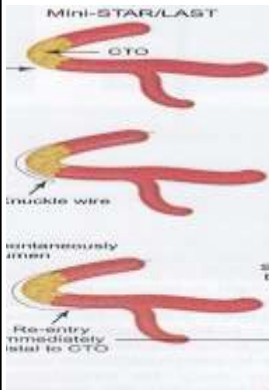
Use of contrast injections into the subintimal space

Despite attempts to improve the method, both the STAR and contrast-based STAR techniques remained unpredictable in their acute and long-term outcomes

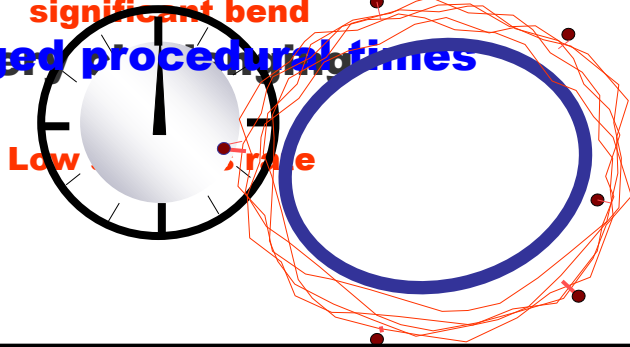
LAST

LAST (Limited Antegrade Subintimal Tracking)

Attempts to improve STAR



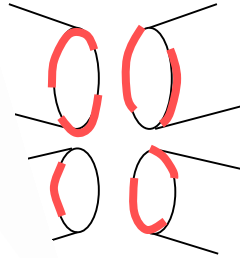
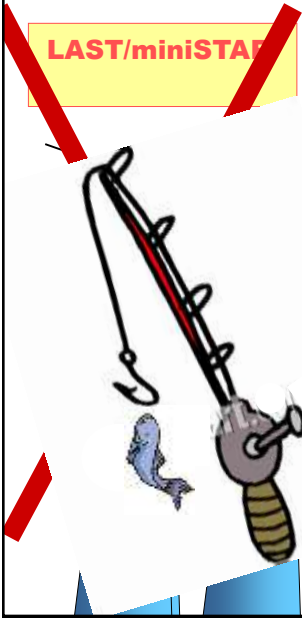
Penetrative wire with significant bend
longed procedural times



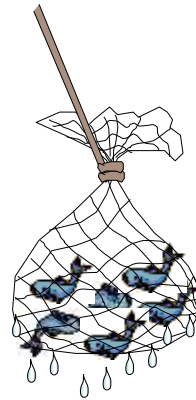
Reentry Approaches

LAST/miniSTAR

STAR



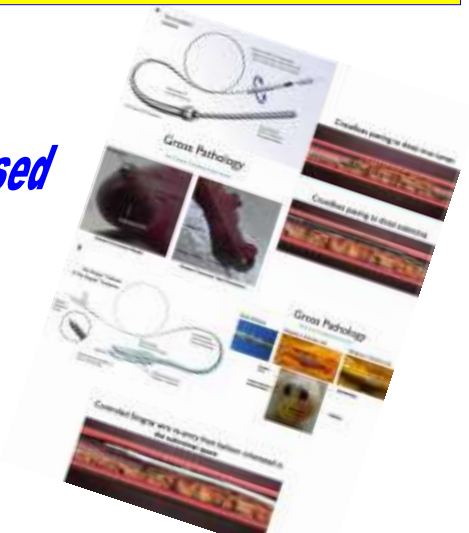
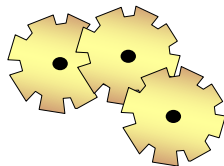
Subintimal haematoma
Distal lumen compression



MiniSTAR

CrossBoss Stingray System

*This device has energised
The ADR*

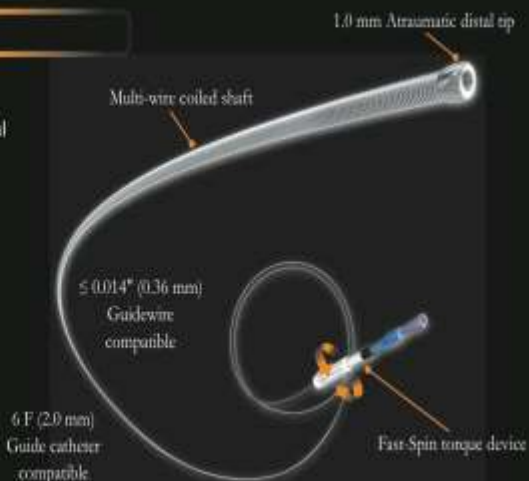


CrossBoss catheter

CrossBoss Coronary Crossing Catheter

Designed to quickly and safely deliver a guidewire via true lumen or subintimal pathways, **CrossBoss** gives you access to coronary chronic total occlusions.

- ▶ Atraumatic, rounded tip reduces risk of perforation
- ▶ Hydrophilic coated, multi-wire coiled shaft provides precise turn-for-turn response
- ▶ Fast-Spin torque device allows rapid rotation of the catheter to facilitate crossing



Stingray catheter

Stingray Coronary Re-Entry System

Designed for reliability, safety, and predictability, **Stingray** allows the operator to accurately target and re-enter the true lumen from a subintimal position.

- ▶ Self-orienting, flat balloon hugs the vessel, automatically positioning one exit port toward the true lumen
- ▶ 180° opposed and offsetting exit ports enable selective guidewire re-entry
- ▶ Two radiopaque marker bands to facilitate accurate placement and positioning
- ▶ Hydrophilic coating on the balloon shaft ensures smooth device delivery
- ▶ Stingray® Guidewire's angled tip and distal probe are designed for facilitated re-entry into the true lumen



The FAST CTO Trial

Study Objective

To demonstrate the safety and efficacy of the CrossBoss™ and Stingray™ Coronary Crossing and Re-Entry devices to recanalize coronary chronic total occlusions (CTOs) in comparison to historical controls

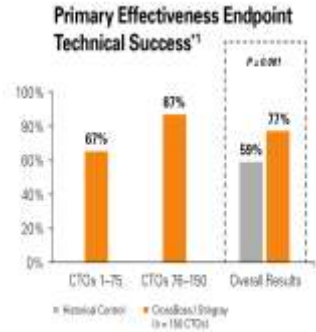
Study Design

- 147 patients with 150 CTOs, 16 centers
- Multi center, non randomized, US IDE study
- Historical control: similarly designed CTO device trials with comparable technical success and safety measures

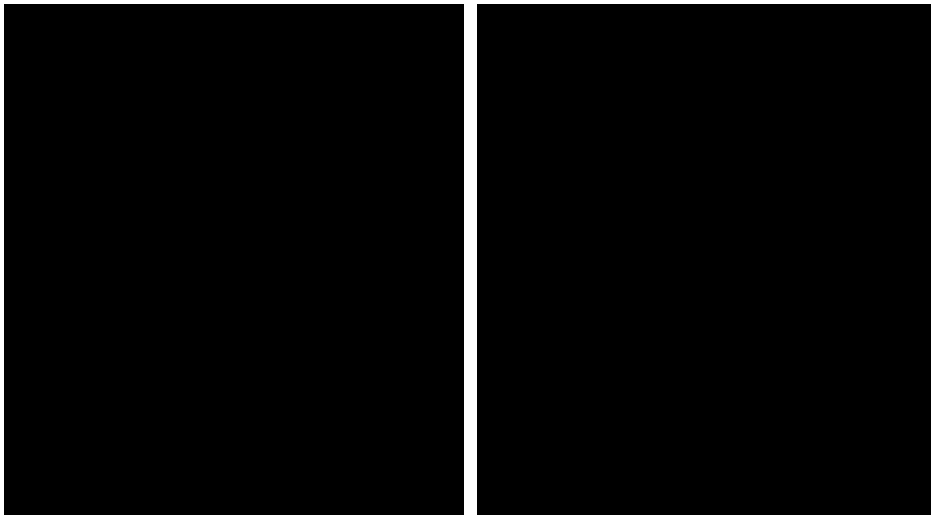
Conclusion

In CTOs failing standard techniques, use of the Cross Boss and Stingray Coronary Crossing and Re-Entry devices resulted in a high technical success rate, 77% without increasing complication. In addition, data shows that crossing success improved to 87% in the last half of the trial as investigators became more familiar with the devices and associated techniques.

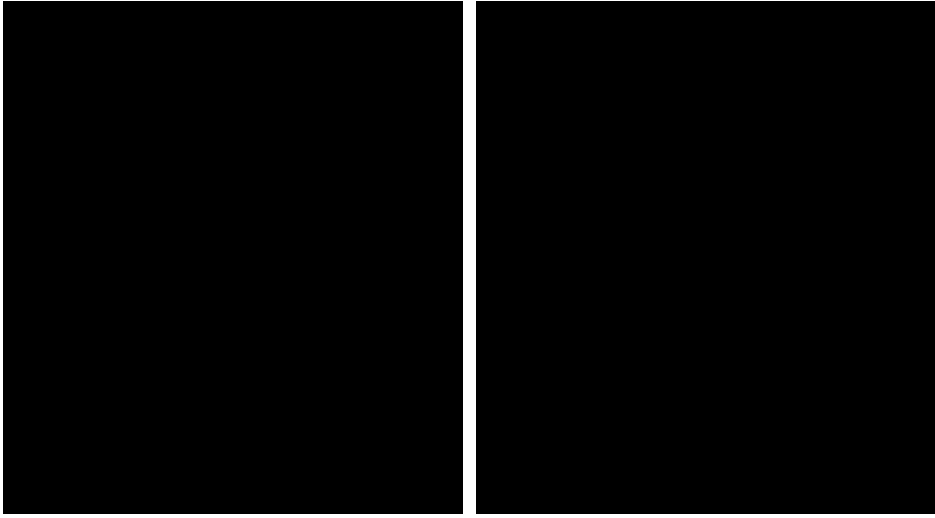
J Am Coll Cardiol Interv. 2012;5:393-401



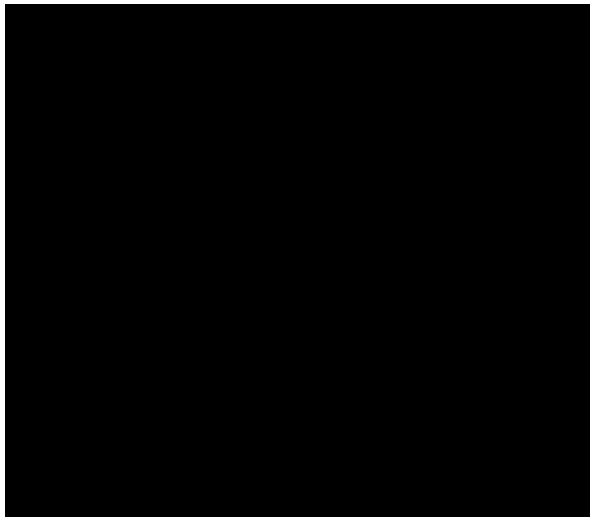
LAD CTO with MVD



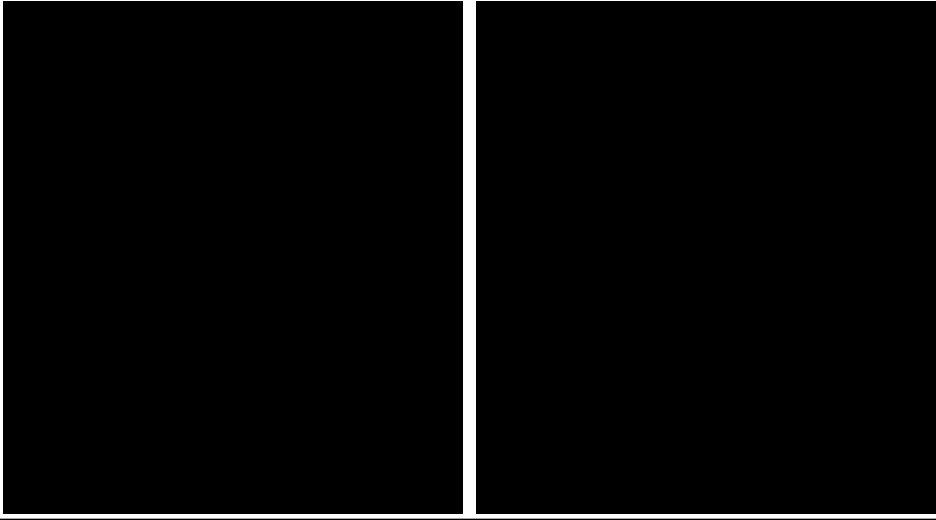
LAD CTO - complicated



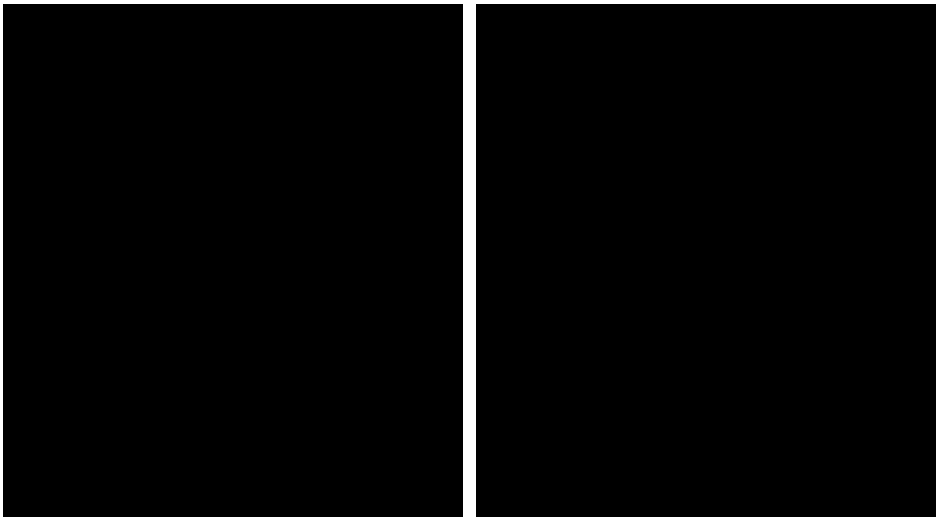
LAD CTO – complicated



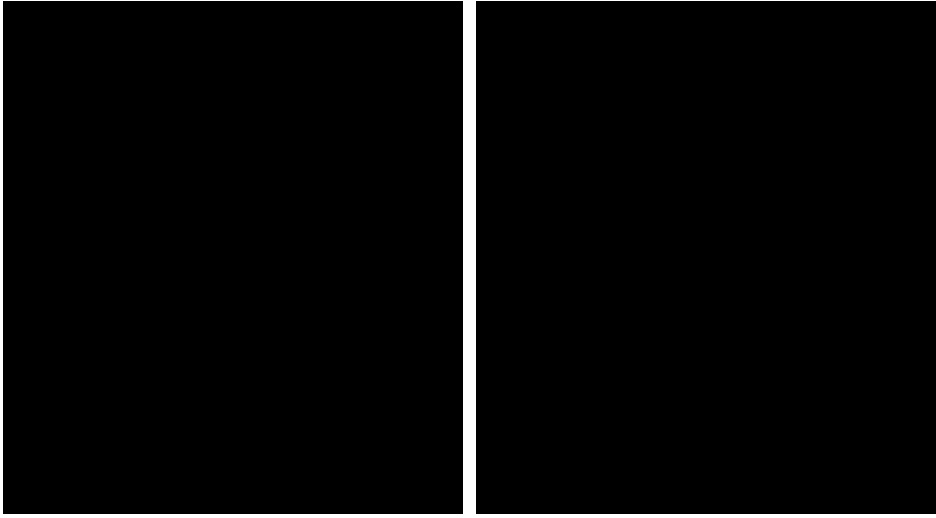
LAD CTO with MVD – Retrial



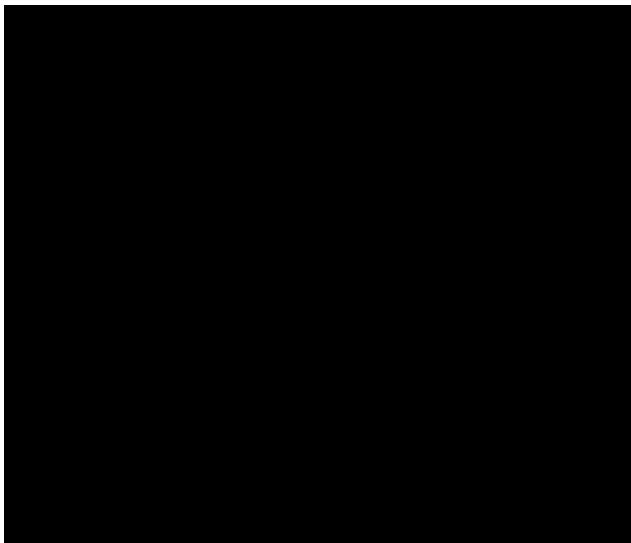
LAD CTO – Retrial



LAD CTO – Retrial



Successful Retrial by ADR



CrossBoss Stingray



Conclusion

- CTOs remain the most challenging coronary intervention.
- ADR has ben evolved over time initially with STAR, contrast based STAR, LAST and can be effectively done by CrossBoss Stingray system.
- Contrast injections should be minimized from the antegrade guide.
- ADR techniques remained unpredictable in their acute and long-term outcomes.
- CrossBoss Stingray system is the most effective and safe to use for ADR and the only approved device for this technique with, short procedural time, high success rate and less complications with higher cost than traditional techniques.
- When to stop? is considered the most important issue.

Thank You

Tarek Rashid

