Antegrade Approach: Antegrade Wiring, the Latest Approaches

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Conflict of interest

• I, Gerald S. Werner, MD, have no conflict of interest to declare with regard to the following presentation
The goal of CTO-PCI

• Ideally: Restore the original anatomy of an occluded artery

• Open an occluded artery
  – with the least damage to the coronary anatomy
  – with the least investment of time and material, reducing procedural risks

• There is no retrograde vs antegrade approach, there is only the choice of the best strategy for the specific lesion and patient
Strategic options for CTOs in Europe

**Bilateral**
Maximal Guide backup

**Antegrade**
- Fielder XT -> Ultimate or -> Progress 200T/Conf.Pro 9

**Antegrade**
- no Stump IVUS for guided Penetration?

**Retrograde**
- With feasible collateral pathways
  - Ostial CTO Long CTO Re-Attempt Ideal access

Penetration, then step down
Distal good target Parallel with stiff wire
Reentrysystem BridgePoint
Strategic options for CTOs in Europe
The antegrade spectrum of technical options

Bilateral
Maximal Guide backup

Antegrade
Fielder XT -> Ultimate or -> Progress 200T/Conf.Pro 9

Penetration, then step down
Distal good target
Parallel with stiff wire
Antegrade: Step by Step

• Lesion specific analysis
  – Identify the proximal cap
  – How long is the lesion
  – What is the presumed course of the occluded segment
  – Identify the distal target

• Patient specific considerations
  – Previous attempts (which wires, why failed)
  – Renal function (limits on contrast use)
Examples not likely to work antegrade
Likely targets for the antegrade approach
CTO wiring requires a dedicated microcatheter

- **Microcatheter selection:**
  - **Finecross:** sleek profile, hard tip
  - **Corsair:** provides additional support for the guide
  - **Caravel:** sleek profile with tapered tip
  - Others to mention:
    - Nhancer
    - Turnpike (Spiral)
    - Teleport etc.
2018: Which wire to use when?

Stiffer tip

- Confianza Pro 12
- Hornet 14;
- Progress 200T

- ASAHI Gaia Third
- ASAHI Gaia Second
- ASAHI Gaia First

Hard plaque

Severe calcification

- Channel communication
- With stump
- Without stump
The wire selection

• Explore the lesion
  – Fielder XT, atraumatic, provides feedback on lesion rigidity, tracks loose tissue and may even penetrate noncalcified caps; “you follow the wire”

• Pass the lesion
  – Gaia 1-3 to penetrate the cap and steer through the occluded segment; “the wire follows you”

• Conquer the calcified lesions
  – Confianza Pro 12 for penetration
  – Others: Hornet 14, Progress 200T
  – Pilot 200 to find the soft spots within severe calcium
The wire selection can be a systematic process. Fielder XT/R to probe the cap to the distal lumen. PROBING THE CAP.
The wire selection can be a systematic process

Fielder XT/R to probe the cap

Gaia 2 → Gaia 3

Conf.Pro

XT does not advance

Distal lumen

INCREASE WIRE PROGRESS
The wire selection can be a systematic process:

1. Fielder XT/R to probe the cap
2. Gaia 2, 3
3. Conf.Pro
4. Distal lumen

*XT does not penetrate*

**INCREASE WIRE PENETRATION**
The wire selection can be a systematic process

XT does not advance

Fielder XT/R to probe the cap

XT does not penetrate

Fielder XT, XTR

Gaia 2

Gaia 3

Gaia 2, 3

Conf.Pro

Distal lumen

 Yayınlar: Werner GS EuroIntervention 2011; 6:1137-1139

DOWNGRADE WIRE STRENGTH
The parallel wire technique is classic.
The parallel wire technique is classic but not outdated.

Crossit 200-400 or Conquest 3g-6g

N.Reifart/O.Katoh 1996
Why parallel wiring works well in the RCA: the wire straightens the vessel architecture
Why parallel wiring works well in the RCA: the wire straightens the vessel architecture
Darmstadt center experience 2014-2017

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A “tough” RCA CTO
Reattempt: IVUS guided planned

A Fielder XT goes smoothly subintimal, what next?
Dual-lumen cath supported parallel wire G3
Case solved in 12 min fluoro time
Antegrade Wiring in 2018

• **Lesion specific approach**
  – Start with the softest possible wire
  – Step up if necessary
  – Use parallel wire as an early and easy bailout
  – If retrograde is difficult, early decision for guided reentry technique (StingRay)

• **Patient specific approach**
  – Select the most likely strategy to solve the lesion
  – Do not attempt complex lesions without the option for retrograde conversion