Laser Atherectomy

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What is laser good for

- Tissue
- Expanding tissues behind stents
- Impenetrable caps
- Suture lines,
- Bifurcations
What is laser not good at

• Heavy calcium
The non-dilatable Stent

Referred…
Laser through stent
Laser through stent

Aggressive ballooning alone

After laser and PTCA
Lessons for treating ISR

- Prepare lesion before stenting—atherectomy
- Debulk ISR
- Treat under expanded stents
  - ELLEMENT Registry
  - 28 patients with underexpanded stents
    - ELCA → CSA Δ 3.7 ± 1.6 mm²

Latib A. Cardio Revasc Med. 2014. 15:8-12.
Brachytherapy?!?!??!
Don’t want to give up metal?
Recurrent DES ISR

- 186 patients with recurrent DES ISR undergoing brachytherapy
- 96% had 3 or more layers of stent
- Neoatherosclerosis/hyperplasia

Brachytherapy utilization

Percentage increase from 2010

![Graph showing increase in Brachytherapy utilization from 2010 to 2015.](image-url)
Common Problems Encountered in CTO PCI – Algorithms for success

- 1. Wire across cap/lesion but device won’t follow.
- 2. Wire impenetrable cap
- 3. Cap ambiguity Proximal
- 4. Cap ambiguity Distal (usually post-CABG)
- 5. Cannot externalize wire after crossing retrograde
- 6. Unexpanded stent in lesion
- 7. Wire across but microcatheter won’t follow – Septals
- 8. Wire across but microcatheter won’t follow - Epicardials
- 9. Wire/gear keeps going into a side branch within a lesion
- 10. Difficult ADR
- 11. Difficult RDR
- 12. Difficult suture line to cross
- 13. Hematoma management with ADR
1. **Wire Across Cap/Lesion but Gear Won’t Follow**

- 1. Increase support: amplatz the guide, guide extension, anchor balloon
- 2. Small balloon (1.5mm X 20mm) inflations for pre-dilation
- 3. BAM(Balloon assisted Microdissection) with same balloon
- 4. Dotter catheter (Turnpike gold, Tornus)
- 5. Laser atherectomy/on contrast
- 6. External cap crush
- 7. Carlino
- 8. Use micro 014/Finecross microcatheter to deliver a short roto wire and perform rotational atherectomy
- 9. Go retrograde(reverse external cap crush)
- 10. See wire impenetrable cap algorithm
Increasing Support

Amplatzing the Guide

Guideliner

Anchor Balloon
Dotter Catheter use
Laser on contrast
Roto on short wire
2. Wire Impenetrable Cap

- 1. Base (Balloon Assisted Subintimal Entry) then power knuckle
- 2. Scratch-and-go
- 3. Carlino
- 4. Laser on contrast on tip of wire
- 5. Go retrograde
Conclusions

• Know Your tools
• If you don’t have and don’t use then you need to know what you shouldn’t do
• Get it right the first time