“TurboCat” Technique for Acute & Non-Acute Limb Ischemic Patients

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Disclosure

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I have the following potential conflicts of interest to report:

☒ Consulting - *Penumbra, Cook, Abbott, Philips, Cardiva*

☐ Employment in industry

☐ Stockholder of a healthcare company

☐ Owner of a healthcare company

☐ Other(s)

☐ I do not have any potential conflict of interest
What’s the Premise?

- Whether patient is presenting as Acute Non-threatened Limb or Non-Acute Limb:

→”Long CTO’s” can mostly consist of thrombus between the caps.
Presumed area of clot
What do we usually do?

- Acute
  - Cross lesion and place lysis catheters
  - Drip as routine and bring back for treatment

- Non-Acute:
  - Cross the CTO
  - Atherectomy/balloon dilate and possible Stent/DCB
  - In this method, we determine our final intervention based on the ENTIRE CTO length
What’s the Proposition??

- If wire cross the occlusion luminally (wire test)...

  → Mechanical Aspiration initially with Cat8 ("Cat")

  → Followed by Laser atherectomy of underlying lesion if present ("Turbo")

  → Then can perform final Intervention
What’s the Premise?

- This unmasks underlying lesion, shorter than expected

- Laser can ablate/pulverize thrombus

Why Single Session?

- Reduce invasiveness and inpatient hospitalization
- Significant costs & morbidities with inpatient stays
  - The risks of TPA, are still significant
  - More patients with relative or absolute contraindications to CDT
Costs

The average cost of ICU admission per patient $\rightarrow$ $31,679 \pm 65,867$.

- $48,744$ per survivor to discharge & $61,783$ per survivor at 1 year


- ALI CDT tx in one study stated as $\sim$38,000

("Clinical outcomes and cost-effectiveness of initial treatment strategies for nonembolic acute limb ischemia in real-life clinical settings” Lurie F, Vaidya V, Comerota A. JVS. Vol 6, No 1)
Case 1
➢ 65yo Male

- 3 weeks of increasing right lower extremity pain and numbness

- Motor intact

- Patient reported prior ½ block claudication with intermittent rest pain

- Due to some neurologic concerns MRI brain showed some punctate infarcts.
Case 2
- Pt with full metal jacket stenting of L SFA 18 months ago

- Presents with subacute worsening of LLE foot pain

- Transferred to our institution for Treatment
In Stent Re-stenosis (ISR)- PRE
First Pass
Cat8 OTW
Second Pass - Cat8 Wire Pulled Pulling back under Aspiration
ISR Thrombus

Would TPA Lysis dissolve all of this???
ISR- Post 2.0 Turbo Laser
Case 3
Pt presented with ~2 weeks worsening pain, now with cool foot. Hx of progressive PVD.

Occlusion of distal SFA into proximal Popliteal artery
Passed the wire test.

Cat8 Indigo passed through clot
Anglo after single pass of Cat8 catheter

Completion run after serial angioplasty and Supera stenting
Adjunctive Techniques

• Sometimes proximal stenosis needs pre-ballooning (prefer 3-4mm balloon)

• Contrast column helps visualize the aspiration

• Can instill TPA for 10min across the lesion

• Some have used EPD conjunctively
Summary

- Increasing outpatient treatments for even the most complex issues such as ALI and Decreasing the length of vessel interventions has multifaceted benefits

- Changing our Tx algorithms to single session management of Acute or Non-Acute Limb Ischemia is one such opportunity

- “TurboCat” technique can result in Cost savings, patient comfort and reduction in comorbidities.
Thank you

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