Real World Experience with the Supera Stent for Long Femoro-Popliteal Lesions

**Deployment Tips and Modes of Failure**

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**Supera is a UNIQUE Stent:**
Markedly Different from Other Stents

Available Nitinol Stents are “Slotted-Tube”
- Laser cut from nitinol tubes
- Open cell Design/ geometry

Supera is an Interwoven Nitinol Stent
- The design incorporates 6 pairs of super-elastic nitinol wires which are interwoven in a helical pattern with a closed cell geometry

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**Supera Interwoven Stent**

“Vascular-mimetic”

- High radial strength (>4X STNS);
- Compression resistance
- Physiologically flexible/conformable
- Kink and crush resistant
- Fracture proof
- Lowest chronic outward force exerted

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**Supera® Has the Least Chronic Outward Force**

Chronic Outward Force (Cof) is exerted on vessel by self-expanding stents due to inherent oversizing

**Clinical Advantages of Interwoven Stents (>STNS)**

- Flexion points (CFA, popliteal, adductor)
- Calcified lesions
- Long lesions
- Better durability and conformability
- Better “stand alone” results
- Much better IVUS and “bent knee angiographic” results

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**Disclosures**

- **Symposium Honoraria and Course Proctor**
  - Abbott, Medtronic, TriVascular

- **Symposium Honoraria**
  - Spectranetics, Cordis, Bard, Cardiovascular Research Foundation, Boston Scientific

- **National PI**
  - CANOPY, SAPPHIRE WW

- **Stock, Research Grants, etc.**
  - None
Supera: Unique Stent, Unique Deployment

- Ratchet delivery vs. pin/pull or wheel
- Stent length is NOT exact (depends on U!)
- Supera is NOT oversized (1:1 OD: RLD)
- Must aggressively pre-treat all segments that will be stented with Supera
- Slower deployment, 2 handed, “an art”
- Great stent, but ~↑potential for trouble with improper deployment technique

Different Stent, Different Deployment: 3 Keys to Proper Deployment

- Aggressive pre-treatment ≥1:1 to OD of all vessel to be covered by stent
- 1:1 sizing of OD of stent to (pre-treated) vessel
- DEPLOY SLOWLY on high mag

Pretreatment

- Pre-treat to OD of stent (aggressive ≥1:1)
- Pre-treat ALL lesions to be covered by Supera; make sure balloon fully expands
- Consider PTA on Roadmap for sizing
- I like focal force (0.018, low dissection, etc)

<table>
<thead>
<tr>
<th>Reference Vessel Diameter</th>
<th>Stent Diameter</th>
<th>Recommended Inflated Balloon Diameter</th>
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<tbody>
<tr>
<td>4.0-4.5 mm</td>
<td>4.5 mm</td>
<td>≥4.5 mm</td>
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<tr>
<td>4.5-5.5 mm</td>
<td>5.5 mm</td>
<td>≥5.5 mm</td>
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<tr>
<td>5.6-6.5 mm</td>
<td>6.5 mm</td>
<td>≥6.5 mm</td>
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Stent Deployment AFTER complete pre-treatment

- Roadmap for distal stent position
- Once started, MAG UP and GO SLOWLY
- Right hand “throws” w/ ratchet, Left hand “babysits” and adjusts
- If stent elongates, slow down and apply forward pressure, if packed, slow down and apply back pressure
- If issues w/ first stent deployment, post dilate stent AND consider more aggressive pre-treatment before placing next stent

6mm VascuTrak for 5.6mm SFA

PRE-Treatment

<table>
<thead>
<tr>
<th>Distal stent deployed w/ roadmap</th>
<th>Then, MAG UP, SLOW deployment</th>
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</table>
Second stent overlap

Other Supera Tips/ Reminders
- Pre-treat all vessel segments to be stented
- If pre-dilation balloon does not fully expand, treat segments w/ short NC PTA
- “Pre-medicate” before aggressive PTA
- Always use ≥5.5 Supera (4.5→restenosis)
- Ratchet system can pull wire back-watch
- Stent deployment: “Mag UP, slow DOWN”
- Postdilation: Only if stent issues, but post-PTA helps if there are stent problems

When/ What NOT to do with Supera…
- Don’t use when precision needed at distal end of stent- i.e NOT for ostial SFA; stent length is NOT exact
- Do not use in segments of significant vessel size mismatch (e.g. CIA→ EIA)
- Do not oversize stent significantly
- Do not stent lesions that were not adequately pre-treated
- ~NEVER “primary stent”

Supera® is Clinically Proven
Widely Studied; Excellent Outcomes to 3 Yrs

>1,100

264

Real-world patients analyzed worldwide in 7 retrospective analyses

Patients studied in the SUPERB Trial

83% Complete lesion resolution

94% were lesion-free at 1 year

90.5% were lesion-free at 3 years

0 Patients at 3-year Follow-up

Proper Sizing, Lesion Preparation, & Deployment Matter!

<table>
<thead>
<tr>
<th>Lesion Preparation / Deployment Matter</th>
<th>0%</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
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83.3% Bifurcation: 0% CTI, 100% CTI
87.8% Confluent: 100% CTI, 0% CTI
What about Long Lesions?

CONCLUSIONS

- The Supera stent has a unique interwoven design imparting “vascular mimetic” qualities for treating femoro-popliteal lesions.
- Supera has excellent clinical results with high patency & low TLR rates, & no fractures w/ long term follow up; ~independent of length.
- Proper lesion preparation and stent deployment techniques are essential to the success of this device.

Thank You for Your Attention!