How guidewire technology can influence procedural outcome in different approaches: guidewire and catheter selection in different vascular territories

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22.1.2019
Disclosure

Speaker name: Daniel Périard

I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☒ I do not have any potential conflict of interest
HFR – Hôpital Cantonal de Fribourg, Switzerland
HFR – Hôpital Cantonal de Fribourg

• 320 bed tertiary hospital
• Population of 320’000
• Bachelor (and master in 2019) in medical studies
• 600 vascular interventions per year
• 100 to 120 BTK/BTA per year
Polymer Jacket Micrograph

- Gladius
- Regalia

- Halberd
- Astato

- Treasure
- Gaia PV
BTK, Plantar arch, retrograde puncture, trans-collateral recanalization

Regalia XS 1.0

- Very flexible tip with high lubricity
- Suitable for plantar arch access
0.018 CTO guidewires

- **ASAHI Gladius 0.018**: Sliding Performance
  - Tube Clip: Orange
  - Tip Load: 4gf

- **ASAHI Halberd 0.018**: Controlled Navigation
  - Tube Clip: Red
  - Tip Load: 12gf

- **Treasure 12**: Controlled Drilling
  - Tube Clip: Blue
  - Tip Load: 12gf

- **ASAHI Gaia PV**: Torque & Tip Flexibility
  - Tube Clip: Magenta
  - Tip Load: 7.5gf

- **Astat 30**: Penetration Technique
  - Tube Clip: Purple
  - Tip Load: 30gf
0.014 CTO guidewires

ASAHI Gladius 0.014
Sliding Performance

ASAHI Halberd 0.014
Controlled Navigation

Aстато XS 20
Penetration Technique

Aстато XS 40
Penetration Technique
• Support profile comparable to V18
• “flex” point near the distal tip to make it easier to knuckle
Strategy for fem-pop

- Favor antegrad approach
- 0.018 inch GW
- Gladius, tip bend manually to pilot in stenosis up to the challenging lesion
- 2.6 French support catheter (strait)
- Try to cross the occlusion with the Gladius
- Do efforts to stay intraluminally (avoid loop technic)
Strategy for fem-pop II

• Change for « penetration GW » such as Astato for calcified segment, then go on with Gladius
• Sub-intimal way: try to get back to the plaque that maid us leave the right path
• Try to return to lumen with a penetration GW (Astato) with short angled tip (similar to japanese hook)
Strategy for fem-pop II

• Change for « penetration GW » such as Astato for calcified segment, then go on with Gladius

• Sub-intimal way: try to get back to the plaque that maid us leave the right path

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Strategy for fem-pop III

• Keep 0.018 GW for the next steps (PTA, DEB PTA, longitudinal scoring, thrombectomy, 4Fr stent platform,.....)

• Change for 0.014 Gladius or Regalia if re-entry device is necessary
44y man

- PAD Rutherford class 4, (rest pain in right foot)
- Diabetic, smoker, hypercholesterolemia
- Duplex: short occlusion of right distal SFA
After 4 passes of 
FLEX Vessel 
Preparation System

Result after 3 minutes drug-eluting angioplasty

STRATEGY:
Cross with Gladius 0.018 GW and 2.6 Fr. 90 cm CXI catheter support

SFA occlusion
69y man

- Rutherford class 3 (R calf claudication)
- ABI right 0.65
- Duplex: long occlusion of the SFA
Result after Flex artery preparation and DCB angioplasty (3x Freeway 5x150)

STRATEGY:
Cross with Gladius 0.018 GW and 2.6 Fr. 90 cm CXI catheter support
74y man

- Diabetes, hypertension, past smoking
- Rutherford class 5
- TBI right 0.35
- Duplex: occlusion of the SFA
STRATEGY if sub-intimal: approach with Gladius 0.018 GW and 2.6 Fr. 90 cm CXI catheter support. Change for Regalia 0.014 Rentry with Outback PTA the re-entry path with 0.018 balloon. Go back to Gladius 0.018 and finish the work.
Strategy proximal BTK

- Favor antegrad approach
- 45 cm long introducer
- 0.014 inch GW
- Gladius, tip bend manually to pilot in stenosis up to the challenging lesion
- Gladius, preshaped «Japanese hook» for CTO
- 2.3 French support catheter (strait)
Strategy proximal BTK II

- Change GW for Regalia 0.014 over Corsair Pro catheter, if the occlusion is not calcified
- Change for Astato 30 (0.018) over 2.6 Fr for calcified occlusion or Astato XS over Corsair Armet
Corsair Pro 2.6 Fr.
58y man

- Diabetes, hypertension, past smoking
- Rutherford class 5, necrosis of hallux
- TBI right 0.42
- Duplex: severe lesions of the leg and ankle arteries
STRATEGY:
Gladius 0.014 GW
CXI 2.3 Fr. 90 cm
Passeo 014 balloons

pedal artery
Strategy for ankle

- Favor antegrad approach
- 45 cm long introducer
- 0.014 inch GW
- Regalia or Gladius preshaped
- Astato for the challenging lesion
- Corsair support catheter
- Tornus 2.3 or 2.6 Fr
82 man

- Diabetes
- Terminal renal failure
- CLI with toe necrosis
- Occlusion of all BTK arteries
- Regalia placed in the digits arteries
- Support catheter blocked at the ankle
Tornus 2.3 – 2.6 Fr.
Tornus 2.3 – 2.6 Fr.
Strategy for renal arteries

- 6 fr renal guiding catheter
- Gladius 0.014 ostial lesions
- Regalia 0.014 for hilar lesions
17 y old woman with fibro-muscular dysplasia of the renal artery, with secondary hypertension.
Strategy for dialysis vascular access

• 4cm 6 Fr. introducer sheath
• Gladius 0.018 (support, échogenicity)
• Asahi Chickai V 0.014 (flexibility, échogenicity)
• Sonography guidance without fluoroscopy in an examination room
• 0.018 platform (PB, DEB, cutting, incisions, rotarex, stenting,...)
Placement of a short dedicated 6Fr 4 cm introducer (Merit Medical)
Crossing the lesion with a 0.018 GW Gladius in the introducer.
Localisation and estimation of the degree of stenosis by US-Doppler

calibration of vessel diameter

Evaluation of the lesion: neo-intimal hyperplasia, thrombosis, lack of vessel maturation
PTA with Freeway AV 6x40 mm inflated with saline

Direct control on the lesion deformation and balloon diameter achieved

Philips Afinity 70 Linear 12 – 3 vascular probe
Cutting-balloon 5x20 mm

Result after preparation with the cutting-balloon 5x20 mm inflated twice with a 45° rotation
rotarex thrombectomy of an occluded vascular prosthesis
conclusions

• Gladius 0.018 is our workhorse for most procedures
• We may change for another GW with other properties according to the step of the intervention:
  – sliding
  – navigation
  – tork
  – flexibility
  – support
  – penetration
  – …
Thank you for your attention
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