

MACON & JOAN BROCK
VIRGINIA HEALTH SCIENCES
— OLD DOMINION UNIVERSITY

Sentara

Rotarex Device Is A Treatment For Subacute Or Chronic Lower Extremity Thrombosed Bypasses Or Stents: How And When Does It Work And When Does It Not

Animesh Rathore, MD
Assistant Professor
Division of vascular surgery
Eastern Virginia Medical School at
Old Dominion University
Norfolk, Virginia

VEITH SYMPOSIUM
Connecting The Vascular Community

Disclosure

- No relevant disclosures to this talk

Chronic limb threatening ischemia

- 0.33% annual incidence and 0.74% 2-year prevalence in the Medicare population with rising numbers
- One year survival 77.7%
- ~44 vascular procedures per 100 person years (~90% endovascular)
- Single segment GSV bypass superior, but not all patients are a candidate because of anatomic/physiologic constraints
- Significant proportion of patients receive spliced vein, composite, prosthetic bypass and/or complex endovascular intervention with described **inferior patency**

Disease burden of

- Chronic residual occlusive disease
- Occluded stents/prosthetic bypasses
- Disease progression

Updated estimates for the burden of chronic limb-threatening ischemia in the Medicare population, Kwong, Minnie et al. Journal of Vascular Surgery, Volume 77, Issue 6, 1760-1775

Thrombosed lower extremity bypass

- Early detection (<14 days)** → improved salvage
 - Catheter directed thrombectomy (STILE)
 - Mechanical thrombectomy
 - Open thrombectomy
- However, >14 days is a more frequently encountered scenario
 - Thrombolysis after fragmentation of thrombus
 - Attempt recanalization vs open thrombectomy (poor outcomes)
 - Redo bypass (often more distal and with even worse patency)
 - Native system recanalization

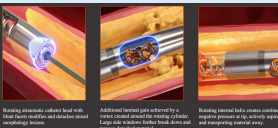
Practice gap for a device

- Address intimal hyperplasia
- Minimize distal embolization of organized chronic thrombus which will not respond to tPA
- Remove intraluminal debris

1. Rubin, J. R., Fard, C. D., & Bernhard, V. M. (2008). Combined thrombolytic therapy and percutaneous transluminal angioplasty for treatment of occlusive arterial graft thrombosis—a case report. Angiology, 59(2), 168-170.


Rotarex™ rotational excisional atherectomy system

- Designed to removed both plaque and thrombus by modifying, excising and aspirating complex lesions with mixed plaque morphology
- 6F and 8 F, 0.018 OTW (85 cm/110 cm/135 cm)
- Intended for native artery, stents, stent grafts or native or artificial bypasses
- 3 components, including the modifying beveled tip, rotating abrading vortex, continuous active aspiration
- Combined atherectomy-thrombectomy action



Case report #1

- 58 yo Caucasian female with CAD s/p CABG, HFREF (45%), Type 2 DM, HTN, morbid obesity, prior renal cell carcinoma with partial nephrectomy, carotid stenosis
- Complex vascular interventions
 - Bilateral kissing iliac stent (OSH)
 - Multiple failed LLE interventions → Left AKA (OSH) with occluded left external iliac and common femoral artery. Ambulatory with prosthesis
 - Prior Right SFA PTA now occluded (OSH)
- Presenting with rest pain of right foot and Left AKA stump, and severe claudication, R ABI 0.45 and open sinus of L AKA
- Underwent **Right** femoral endarterectomy, fem-AK pop bypass with Propaten and distal anastomosis Supera stent (5.5 mm) as well as **Left** external iliac recanalization with stenting for AKA stump pain
- Superficial breakdown of right groin, eventually healed



Case report #1

Post bypass

- Normal ABI on Right and rest pain resolved on left AKA
- Widely patent bypass on duplex
- Ambulating

10 months later presented with thrombosed bypass with worsening rest pain over last 2 months

Case report #1

Post bypass

- Normal ABI on Right and rest pain resolved on left AKA
- Widely patent bypass on duplex
- Ambulating

10 months later presented with thrombosed bypass with worsening rest pain over last 2 months

Pitfalls with subacute/chronic prosthetic bypass occlusion

- Hostile groins (unable to access R or L)
- High risk for wound complication with redo exposure for open thrombectomy
- tPA likely not effective now
- ? Offer AKA?

Case report #1

- Retrograde dorsalis pedis access (6 Fr Slender)
- Recanalization of thrombosed fem pop bypass
- Rotarex thromboathrectomy for the entire bypass and the distal anastomotic Supera stent
- DCB angioplasty

Case report #1

- Patency restored with 3v runoff
- Palpable PT and DP pulses, rest pain resolved
- Discharged on POD 1 with triple therapy (Aspirin, Clopidogrel and Rivaroxaban)
- 3, 6, 9, 12 month follow up with graft duplex: Widely patent bypass
- Now ~ 18 months post op with patent bypass

Case report #2

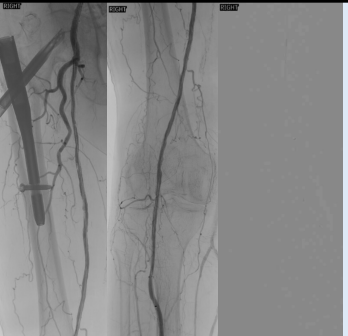
- 79 Y F with HFrEF, Stable angina, COPD, Pulm HTN, HTN, T2DM, COPD, CKD
- Prior RLE Deep vein arterialization 6 months prior
- Now with thrombosed DVA stent graft as well as inflow SFA disease, rest pain along with RC6 CLTI (forefoot wound)
- Now with worsening rest pain and non healing forefoot wound

Case report #2

- Left femoral access
- Crossed right SFA-pop-PTV deep venous arterialization stent into the PT vein
- 6 Fr Rotarex atherectomy for entire length
- Venturi effect on Viabahn stent in PT vein during atherectomy
- PTA entire length

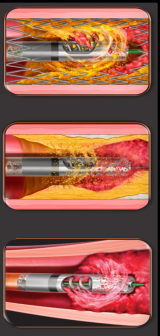
Case report #2



- Post thrombo-atherectomy, inline SFA, pop and pop-PTV DVA stent with intact pedal venous arch
- Palpable PT venous pulse post op and resolved rest pain



Conclusions

- Rotarex is a rotational excision atherectomy system with indications for wide spectrum of
 - Lesions: Atheromatous plaque, thrombus (acute, subacute, chronic) and neointimal hyperplasia
 - location (native artery, stent, prosthetic grafts, in-stent stenosis)
- Pitfalls of distal emboli, vasospasm, trackability can be easily resolved in most cases
- Combine with catheter directed thrombectomy, IVUS, DCB angioplasty, stenting etc depending on case requirements
- Call for multicenter study to evaluate outcomes for subacute/bypass thrombectomy



Questions?

Animesh Rathore, MD
axrathor@Sentara.com
 Cellphone 6468946814

