2022 MID-ATLANTIC CONFERENCE

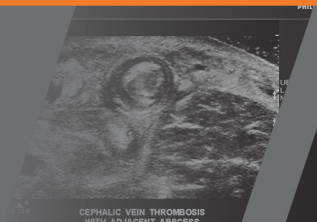
10th ANNUAL CURRENT CONCEPTS IN

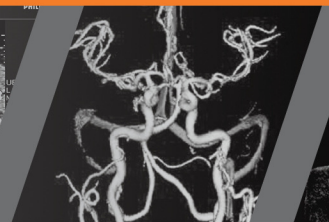
VASCULAR THERAPIES

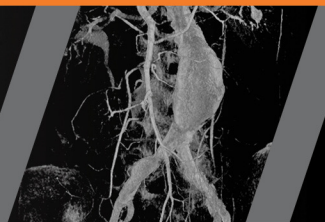
2022

Hilton Virginia Beach Oceanfront
Virginia Beach, Virginia

APRIL 28-30







Sentara Vascular Specialists

2022 MID-ATLANTIC CONFERENCE

10th ANNUAL CURRENT CONCEPTS IN

VASCULAR THERAPIES

2022

Radial Access for PAD

Christopher L Stout MD, FACS, RPVI

Director Lab and Outpatient Based Angiosuite

Rogers, Arkansas

Ozark Regional

VEIN & ARTERY CENTER

Disclosures

- Terumo: speaker, advisory
- CSI: speaker, advisory
- BD: speaker

Why Radial?

Why a Combine Derby?

Objectives

- Evolution of access site for improved quality care
- Benefit, risk, limitations of radial access
- Technical considerations to avoid pitfalls

Personal Expertise

<u>> 10 years radial experience-hundreds of cases</u>

Renal/Mesenteric → Iliac → Fempop/Tibial

Experience

Technology

<u>Primary Investigator for 2 Vascular Radial Studies</u>

REACH PVI – on of top enrollers 2019-2021

R2P - on of top enrollers 2020-2021

Patient Factors Push Evolution

- Patient driven market
  - Minimally invasive evolving to least invasive
  - Recovery
    - Many patients cannot afford to take a week off work
    - Some patients do not have a driver
  - Comfort
    - 25-50% of Americans have back pain…laying flat hurts!
    - Anxiety post procedure about bleeding and detecting it

Medical Establishment Factors Push Evolution

- Quality and Cost-Effective Care
  - Nurses, Aides, Physicians Availability
  - Cost and Number of Complications
  - Inventory costs
- Patient Scheduling
  - Throughput and Recovery Needs
  - Delays due to complications of postop recovery
- Able to perform procedures in Office Labs and ASC's safely and more cost effectively

RIVAL TRIAL 2011

After this within a few years 1/3 of cardiac caths were radial and growing and peripheral interventions were slowly beginning, limited by technology.

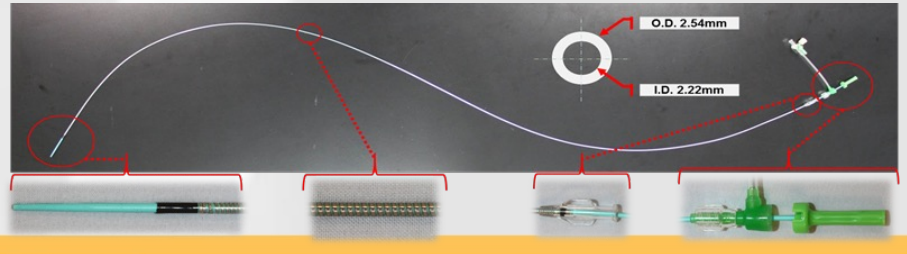
Key Vascular Results	Radial n=3507	Femoral n=3514	p Value
Major Complications at 30 days	**1.4%**	**3.7%**	**<0.0001**
Large hematoma	1.2%	3.0%	<0.0001
Pseudoaneurysm needing closure	0.2%	0.6%	0.006
AV Fistula	0%	0.1%	N/A
Ischemic limb needing surgery	0%	0%	N/A

Jolly SS, et al. Radial Versus Femoral Access For Coronary Angiography And Intervention In Patients With Acute Coronary Syndromes (RIVAL): A Randomized, Parallel Group, Multicenter Trial. Lancet. 2011;377:1409–1420.

Reach PVI

Results From the Radial accEss for nAvigation to Your CHosen Lesion for Peripheral Vascular Intervention (REACH PVI) Study

- 50 lesions: 92% Fempop and 8% Infrapop
- ~10 cm lesions: 100% atherectomy rate; 16% stent rate
- 98% Treatment success with **<u>0% bleeding/hematoma</u>**
- 2.7 hour recovery and 7.2 hour door to door time



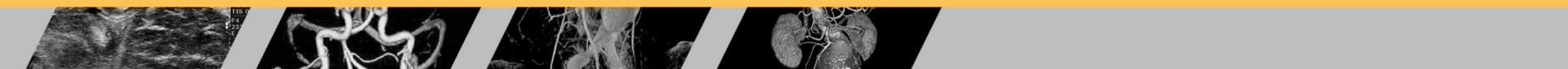
R2P Registry

Observational Study to Assess Transradial Access for Treatment in the Lower Extremities Minimally invasive evolving to least invasive

- Expect Data in 2023, good things take time

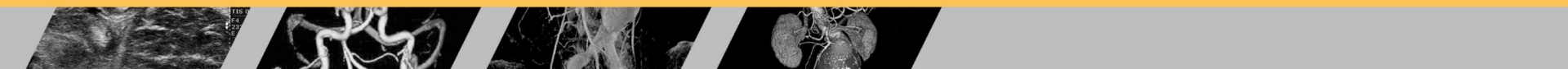
Technology Less Limiting

- Guiding Sheath – Primary push of evolution of radial, a game changer!
  - Need ~120 cm to park catheter in external iliac/common femoral
  - If use 150 cm there is more pushability but less balloon options
- Support Catheter – LIMITED TECHNOLOGY
  - 200 cm long is longest available: Goes to mid tibials.
    - Ok to use “normal” length 300/260 cm wires to cross
    - Can use long 200 cm or 170 cm shafted balloons
      - less support so use stiffer body wire
- Wires –LIMITED TECHNOLOGY
  - Stiff to get sheath to iliofemoral region to prevent prolapse into ascending aorta/left heart
  - Teamwork b/w support cath and wire-infrapopliteal be sure to have long wires
    - 450 cm 0.035 available
    - 475 cm long 0.014 available



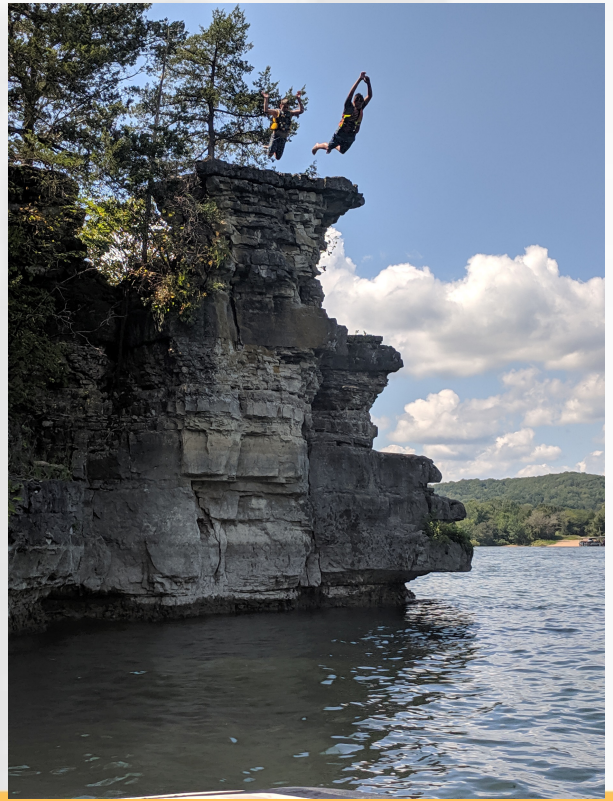
Technology Less Limiting

- Angioplasty Balloons
  - 0.014 to 0.035 OTW and Rx @ 200 cm available
  - No DCB
- Stents: Limited Technology
  - Very limited / single company makes them @ 200 cm Rx Shaft
  - 135 cm = Iliac / CFA / Maybe SFA Proximally
  - 150 cm = Will get to Mid SFA/Hunter's Canal
  - No drug coated stents to get mid distal SFA
  - No Covered Stents yet
- Atherectomy: Single company with platforms that reach 200 cm and then additional 15 cm throw
- Intravascular Ultrasound: Limited and can use 0.014 systems that are 150 cm long to see to Hunter's canal



Technology Is Still Ever Evolving

But… The Technology Has Evolved Enough To Become Part of Everyday Practice and data looks good

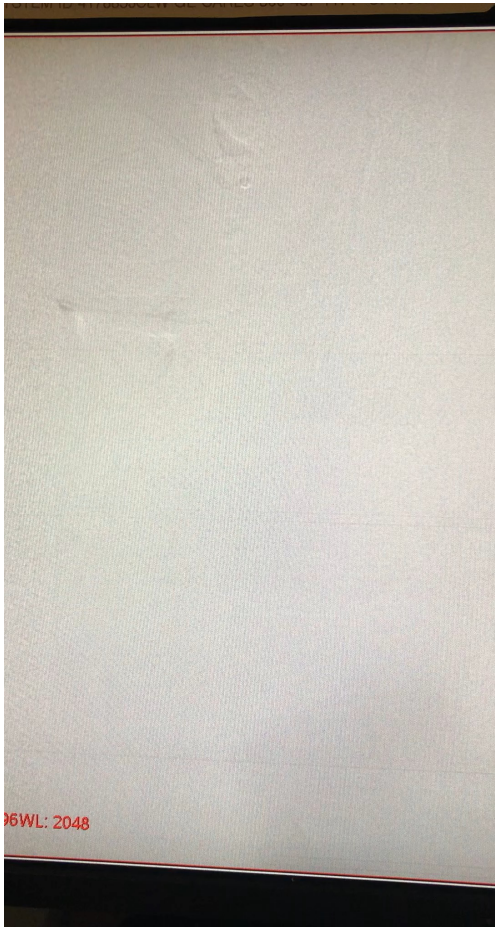


Case #1

- Patient Demographics
  - 70 y.o. male
  - DB, HTN, previous smoker
  - Pt height: 71”
  - Disease State: c/o LLE rest pain, previous common femoral intervention
  - Access: Left radial artery
  - Room Set up: Contralateral groin prepped as back up, L wrist at patient side

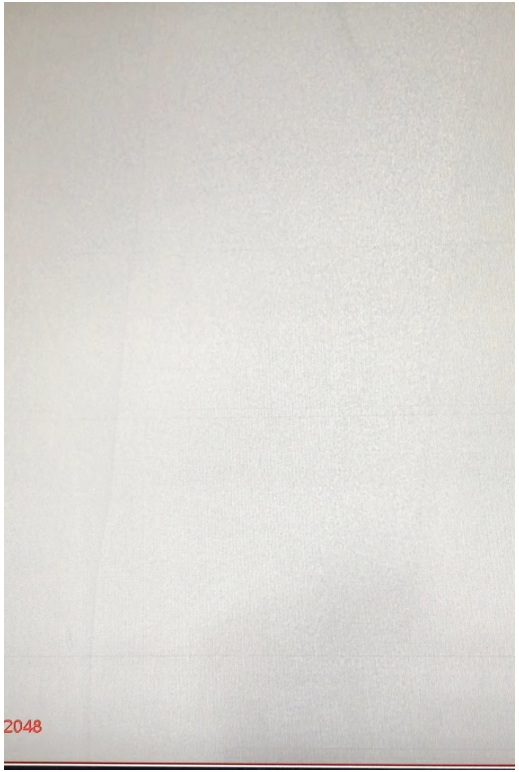
Case #1
SFA Occlusion

- L radial access gained with u/s 6F slender, heparin/nitroglycerine given, glidewire advantage advanced past aortic arch using 110 cm PIG. Aortoiliac imaging performed.
- Exchanged for 119 cm hydrophilic, braided 6F slender guiding Sheath to left common femoral artery. Unilateral runoff performed.
- SFA Occlusion revealed



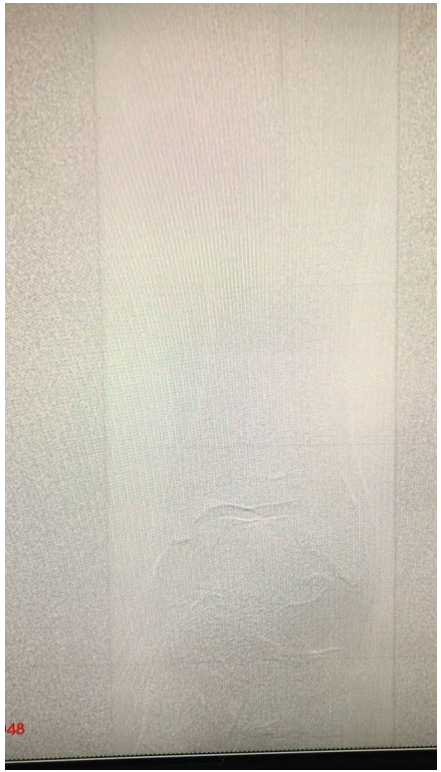
Case #1
SFA Occlusion

- SFA occlusion re-constitutes near hunter's canal



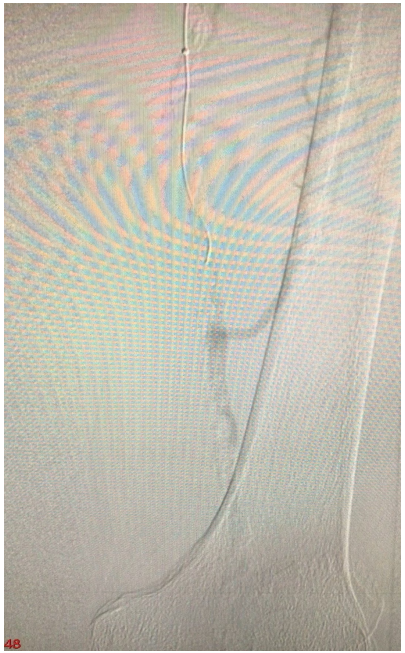
Case #1
SFA Occlusion

- Single vessel runoff noted with Posterior Tibial flow to mid foot

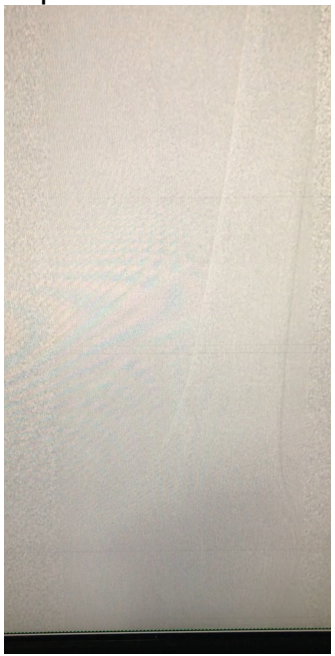


Case #1 SFA Occlusion

- Crossing with 150cm braided support catheter and 260 cm glidewire advantage

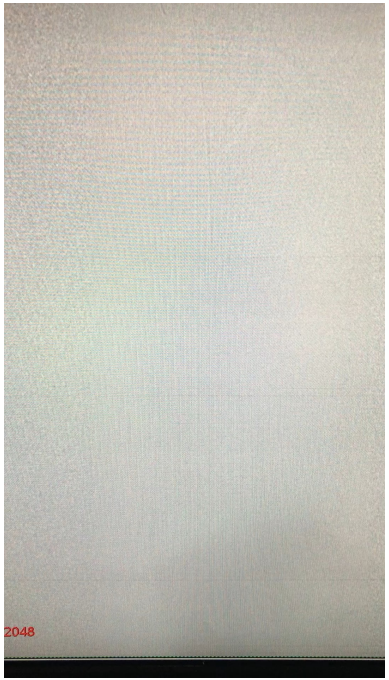


- Post Crossing, place 475 cm 0.014 wire and performed orbital atherectomy using radial platform OA device



Case #1 SFA Occlusion

- Proximal SFA post orbital atherectomy and 5mmX300mm on 200 cm shaft 0.014 PTA dilatation catheter

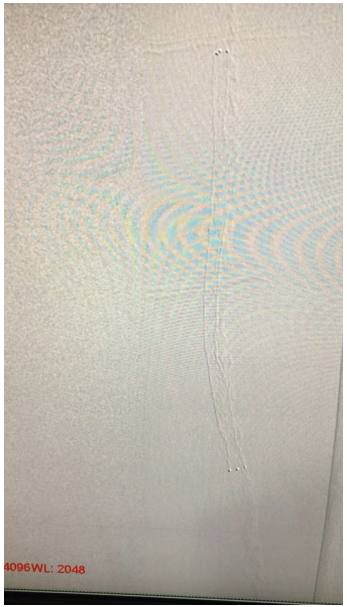


- SFA post Orbital Atherectomy and 5mmX300mm ULTRAVERSE 014 PTA Dilatation Catheter

Case #1 SFA Occlusion

- Pre-Stenting: Dissections noted in mid-distal SFA

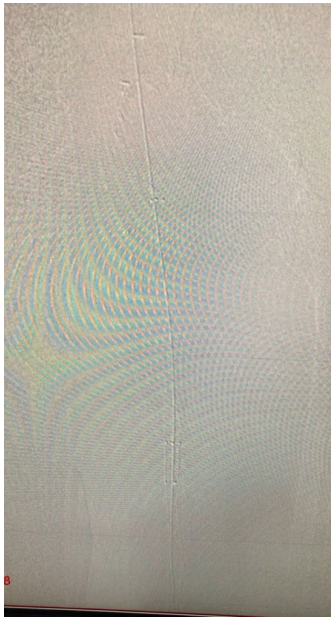
- Post 6mmX150mm x200 cm shaft Self-expanding nitinol stent deployment and post angioplasty.



Case #1 SFA Occlusion

- Proximal SFA dissection* and residual stenosis at ostial SFA

- Post 6mmX100mmx200cm shaft nitinol stent deployment and post angioplasty



Case #1 Final Thoughts

- Gave a little extra sedation as long sheath is pulled over the wire (not flick through arch) and compression band applied to wrist.
- Patient displayed palpable Posterior Tibial pulse on table post intervention
- Using long access requires much communication between scrub tech and operator.
  - Arm goes down to patient's side supinated rather than at 45-degree angle (wrist is near groin so wires can go down the flouro table rather than extra scrub tables to the side of room
  - Avoid advancing guide sheath in and out to avoid injuring radial artery
  - Looping wires and not losing wire or dropping off table
  - Get a good feel of arm and hand and if swelling hold pressure 10 minutes above the band
  - Over all my cases I never took a patient to the OR to do anything with the wrist radial artery

Thank-you, from the Ozarks

-Lodha A. REACH PVI Clinical Study Results. Presented at NCVH 2020.
-Sanghvi K, Coppola J. Intervent Cardiol Clin. 2015;4(2):179–192.
-Thakor A, et al. Can Assoc Radiol J. 2017;68(3):318-327.
-Santas E, et al. Rev Esp Cardiol. 2009;62(5):482-490.
-Amin A, et al. JACC Cardiovasc Interv. 2013;6(8):827-384.
-Coscas R, et al. J Vasc Surg. 2015;61(2):463-468.
-Cohen MG and Ohman M. Should The Benefit Of Radial Access Still Be Questioned? JACC Cardiovasc Interv. 2016;9:908-910.
-Sanghvi K and Coppola J. Transradial Peripheral Arterial Procedures. Intervent Cardiol Clin. 2015;4:179–192.