Are you for real…?

Against the motion

Endovascular Atherectomy Should be the First Choice in Treating Common Femoral Stenoses

WVES 2025

John Harlock

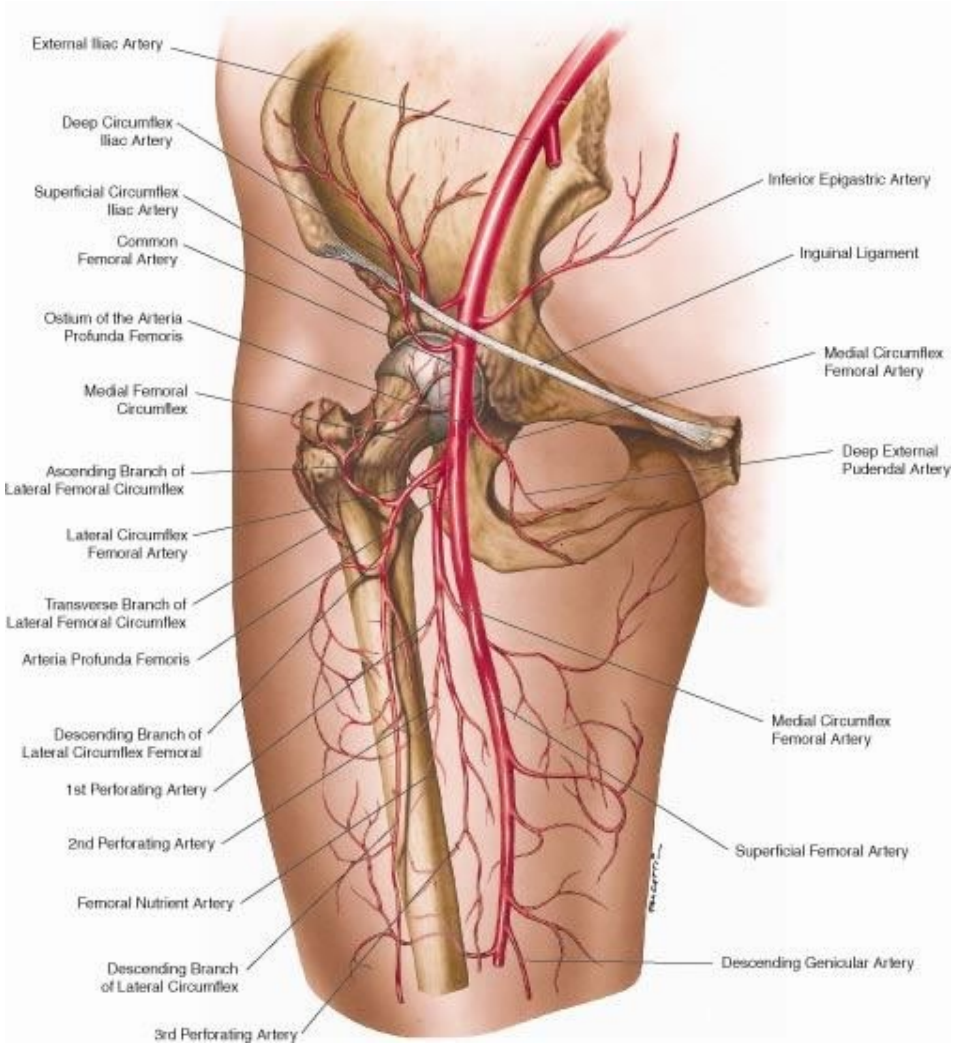
Presenter Disclosure

Presenter: John Harlock

- I have the following relationships with commercial interests:
  - **Speakers Bureau/Honoraria:** Boston Scientific/Abbot Medical – medical advisory board
  - **Other:** Frontline Medical Inc. shareholder

Are you for real…?

- Questions for Dr. Tse
- What did the CFA ever do to you that you want to tear it up inside?
- How can you take such a beautiful operation and slander it?
- Do you sleep well at night after your butchery of such an innocent and friendly vessel?



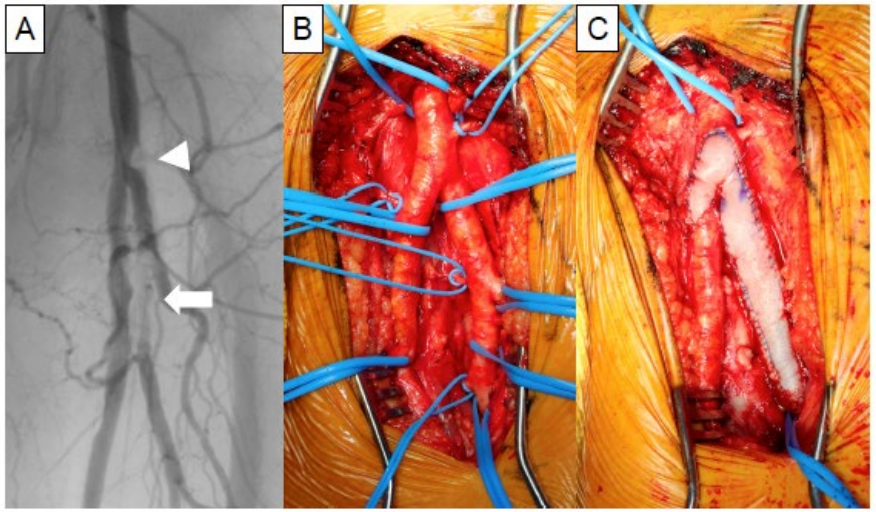
Surgical Femoral Repair

- Has been the Standard for years
- Common Femoral artery disease is different in terms of location c/w other vascular beds
  - More surgically accessible

- Even in high risk patients, hybrid repairs may be a better option

The work horse – CFA endarterectomy

- Been described as a successful procedure as early as 1946
- Gold Standard procedure for lower extremity revascularization in the context of CFA disease
- In combination with endovascular therapy as hybrid procedure or as outflow vessel for proximal disease
- 8-10 year limb salvage rates with CFA-endarterectomy ~87% in patients with CLTI



Common femoral artery endarterectomy

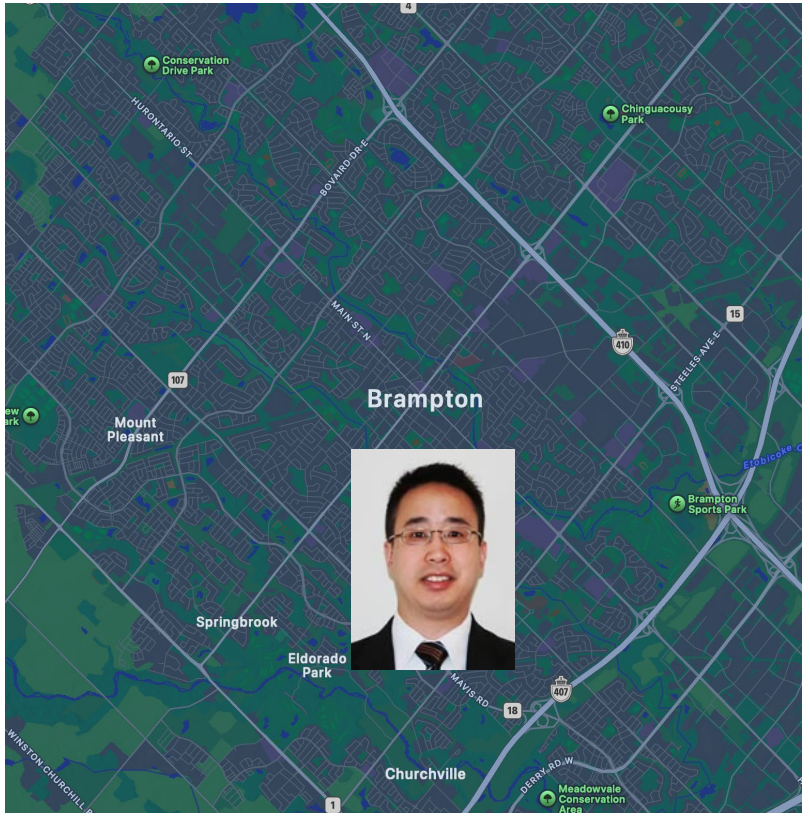
- Wound related complications 8%
- 30-day mortality 1.7%
- Perioperative morbidity 14%
- Possibly lead to long hospital stays/readmissions

Common femoral artery endarterectomy

- CFE – durable and excellent results both short- and long-term
- Gateway for other procedures – hybrid/bypass
- Can have significant morbidity (mortality)

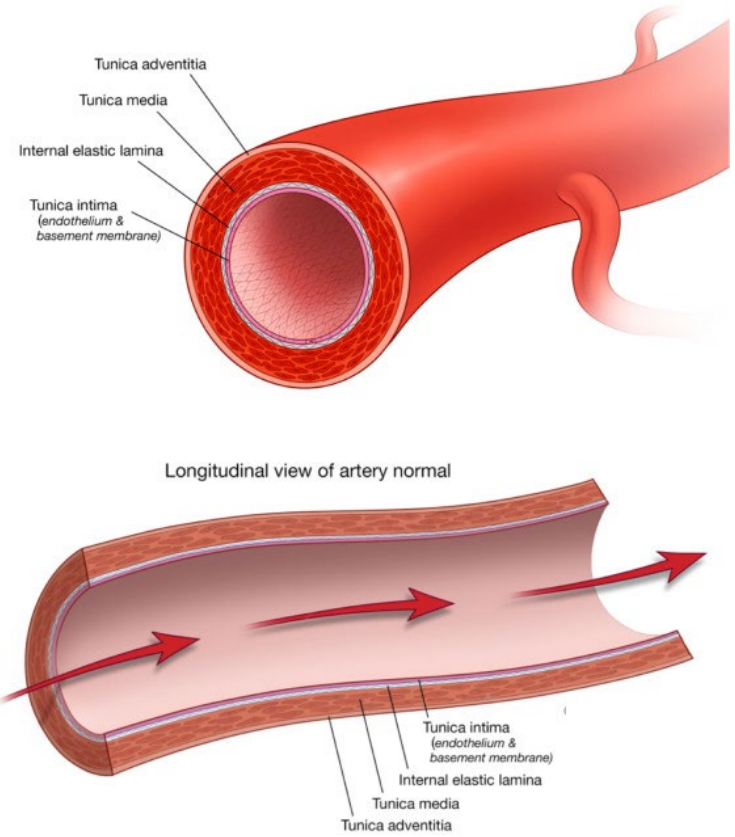
- Endovascular Treatment
  - Lower morbidity/mortality
  - High rates technical success
  - Good short-term patency
  - One of the major stumbling blocks
    - Profunda femoris patency

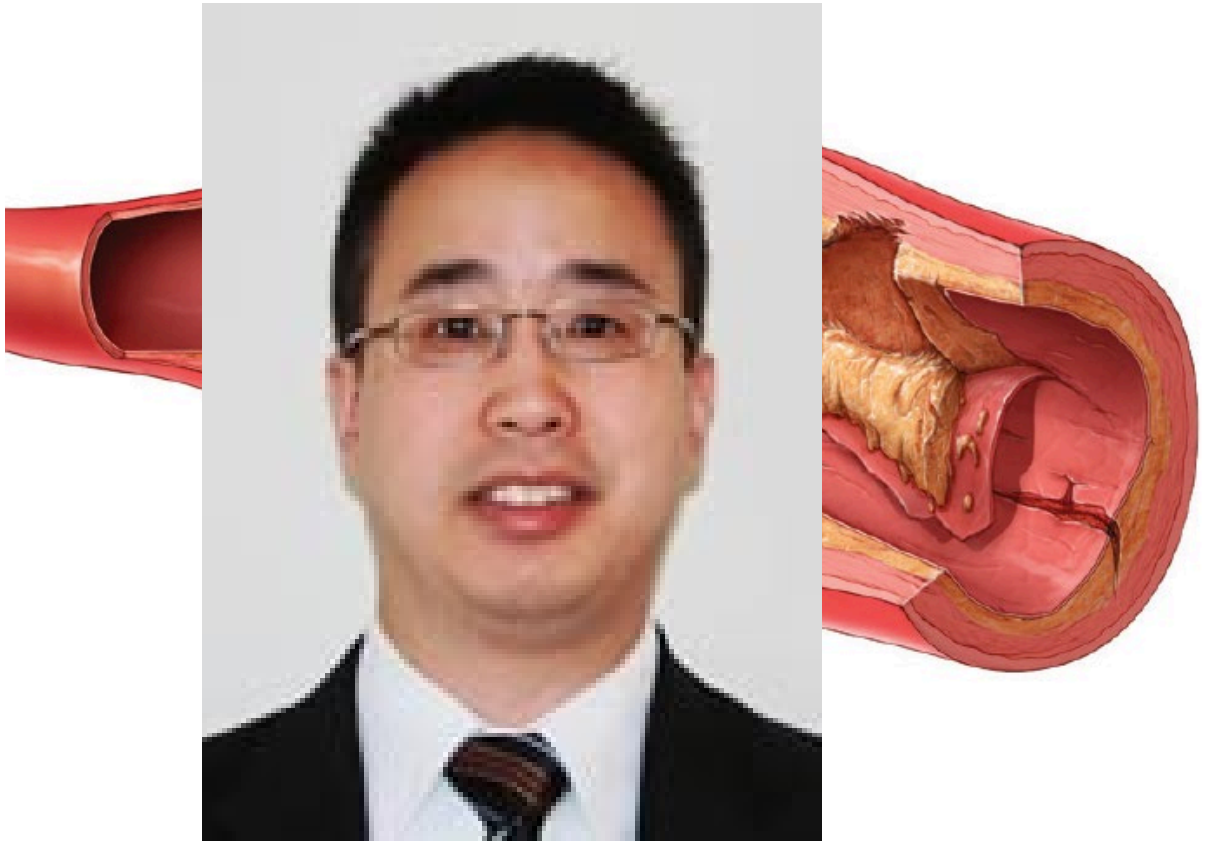
New Treatment Algorithm



Endovascular Atherectomy

- Mechanical device that removes/debulks tissue from the treated vessel
- Scrape/cut/laser out tissue


Tunica adventitia
Tunica media
Internal elastic lamina
Tunica intima
(endothelium &
basement membrane)
Longitudinal view of artery normal
Tunica intima
(endothelium &
basement membrane)
Internal elastic lamina
Tunica media
Tunica adventitia



Endovascular Atherectomy

- Risk of distal embolization
  - Can be upwards of 15-20% of cases – clinical or not

- Can lead to dissection or vessel disruption
  - Necessitating bailout maneuvers – Stenting etc
  - Stenting the CFA not the ideal area

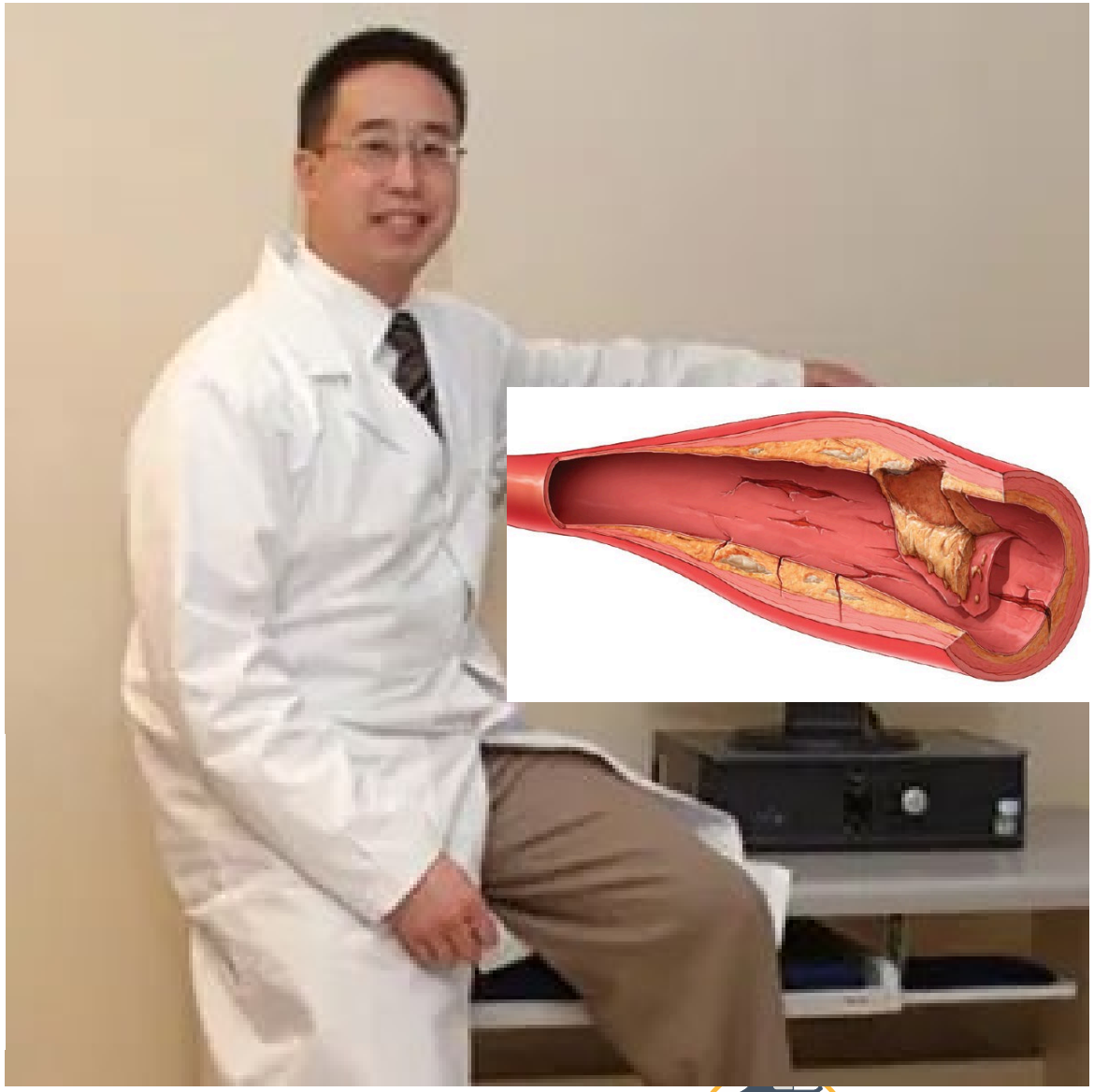
- May lead to incomplete lesion treatment/increased risk of recurrence depending on device you use
  - Rotational, orbital, directional

- High risk of further procedures (DCB) with increased associated costs with endo atherectomy

Don’t mess with the Profunda!

Dissection can lead to stenting

CFA stenting with PFA coverage– occlusion or severe stenosis in ~ 30% patients in PFA



Vascular Medicine
OnlineFirst, February 3, 2025

https://doi-org.libaccess.lib.mcmaster.ca/10.1177/1358863X241311936

Sage Journals

Original Research Article

Outcomes of contemporary stents with deep femoral artery coverage

Takahiro Tokuda [1], Naoki Yoshioka [2], Akiko Tanaka [3], Shunsuke Kojima [4], Kohei Yamaguchi [5], Takashi Yanagiuchi [6], Kenji Ogata [7], Tatsuro Takei [8], and Tatsuya Nakama [4]

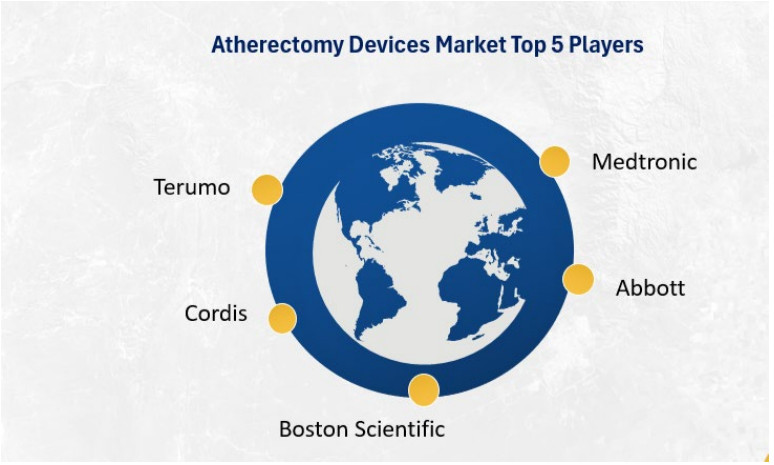
Durable, wonderful, beautiful - Profunda femoris

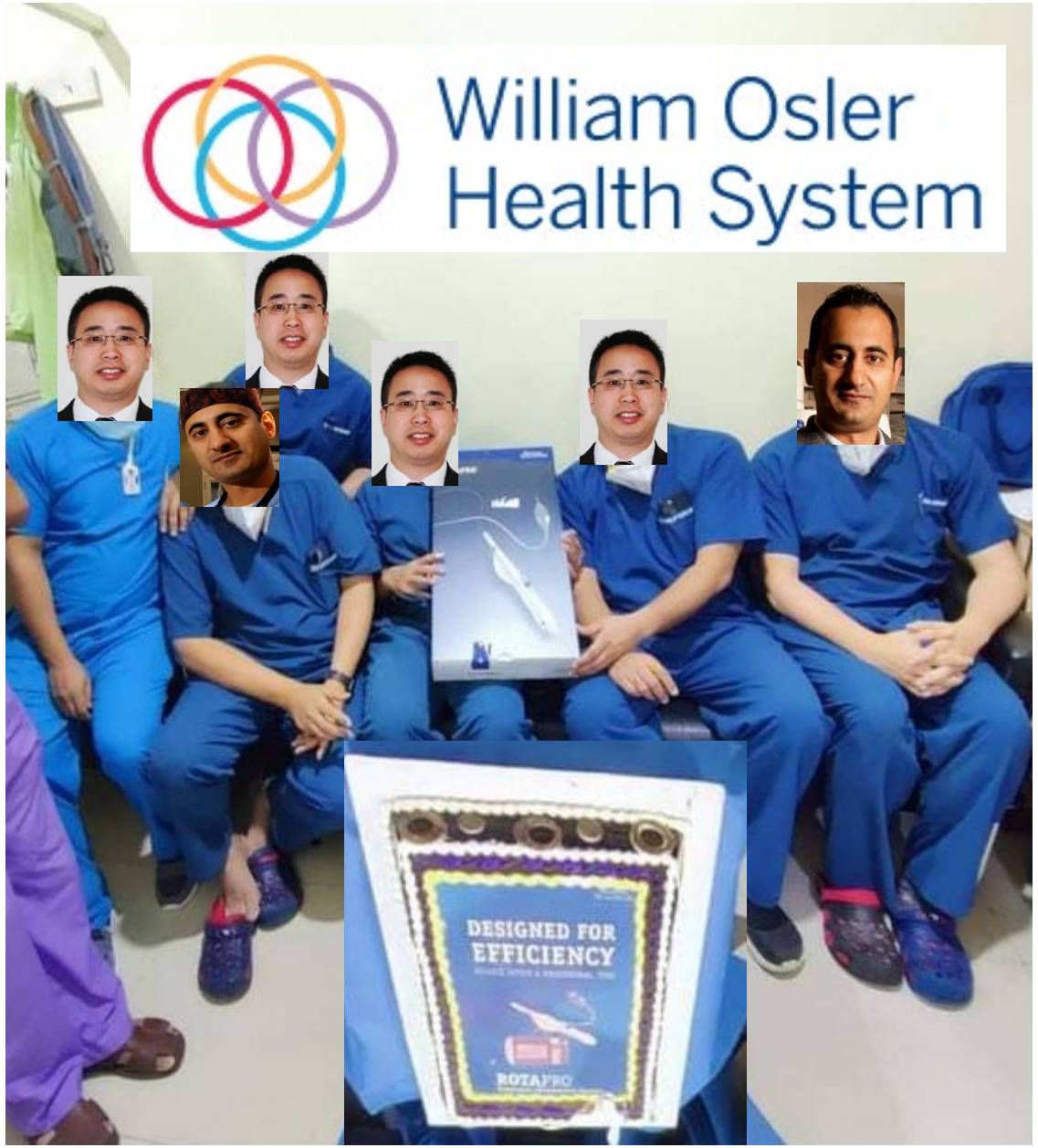
SFA

Profunda femoris

Increased Procedural Costs

- Especially of routine, first line use of Atherectomy devices.




William Osler
Health System
DESIGNED FOR
EFFICIENCY

Guidelines are generally helpful to address these types of questions

Revascularization for Claudication: Common Femoral Artery Disease		
2a Moderate LOE	B-R	6. In patients with functionally limiting claudication and hemodynamically significant common femoral artery disease with inadequate response to GDMT (including structured exercise), surgical endarterectomy is reasonable, especially if endovascular approaches adversely affect profunda femoris artery pathways.[32,33]
2b Weak LOE	B-R	7. In patients with functionally limiting claudication and hemodynamically significant common femoral artery disease with inadequate response to GDMT (including structured exercise), endovascular approaches may be considered in those at high risk for surgical revascularization and/or if anatomical factors are favorable (ie, no adverse effect on profunda femoris artery pathways).[33–40]

Circulation
Volume 149, Issue 24, 11 June 2024; Pages e1313-e1410
https://doi-org.libaccess.lib.mcmaster.ca/10.1161/CIR.0000000000001251

American Heart Association.

CLINICAL PRACTICE GUIDELINES

2024 ACC/AHA/AACVPR/APMA/ABC/SCAI/SVM/SVN/SVS/SIR/VES Guideline for the Management of Lower Extremity Peripheral Artery Disease: A Report of the American College of Cardiology/American Heart Association Joint Committee on Clinical Practice Guidelines

So what is the evidence that entices Dr. Tse for Endovascular Atherectomy?

- Many studies have small sample sizes
- Industry sponsored
- Non-randomized
- Lack robust long-term follow up

- Multi-centre retrospective cohort
- Compared 2 historical cohorts o
  patients
- Outcomes – similar MACE and M
  30days
- At almost 2 years mortality, AFS
  were similar
- GARBAGE!

Sage Journals

1358863X251323508

endovascular therapy versus open repair
mmon femoral artery disease: The
N study

n T Lee[2], Martin Andrassy[3], Drosos Kotelis[4], Marco V Usai
as[7,8], Nicola Troisi[9], Bahaa Nasr[10], Athanasios Saratzis[11], Solon
P Donas[13,14] on behalf of the ARISTON Collaborative

Other evidence

Multicenter Study > JACC Cardiovasc Interv. 2022 Jul 25;15(14):1453-1463.
doi: 10.1016/j.jcin.2022.03.010. Epub 2022 Jun 29.

1-Year Outcomes of Thromboendarterectomy vs Endovascular Therapy for Common Femoral Artery Lesions: CAULIFLOWER Study Results

Tatsuya Nakama [1], Mitsuyoshi Takahara [2], Yo Iwata [3], Naoki Fujimura [4], Terutoshi Yamaoka [5], Kenji Suzuki [6], Kotaro Obunai [7]; CAULIFLOWER Study Investigators

Randomized Controlled Trial > JACC Cardiovasc Interv. 2017 Jul 10;10(13):1344-1354.
doi: 10.1016/j.jcin.2017.03.046.

Stenting or Surgery for De Novo Common Femoral Artery Stenosis

Yann Gouëffic [1], Nellie Della Schiava [2], Fabien Thaveau [3], Eugenio Rosset [4], Jean-Pierre Favre [5], Lucie Salomon du Mont [6], Jean-Marc Alsac [7], Réda Hassen-Khodja [8], Thierry Reix [9], Eric Allaire [10], Eric Ducasse [11], Raphael Soler [12], Béatrice Guyomarc'h [13], Bahaa Nasr [14]

Other evidence

47 patients

Journal of Endovascular Therapy
Volume 25, Issue 1, February 2018, Pages 92-99

https://doi-org.libaccess.lib.mcmaster.ca/10.1177/1526602817748319

SAGE journals

Lower Limb Interventions

Directional Atherectomy With Antirestenotic Therapy vs Drug-Coated Balloon Angioplasty Alone for Common Femoral Artery Atherosclerotic Disease

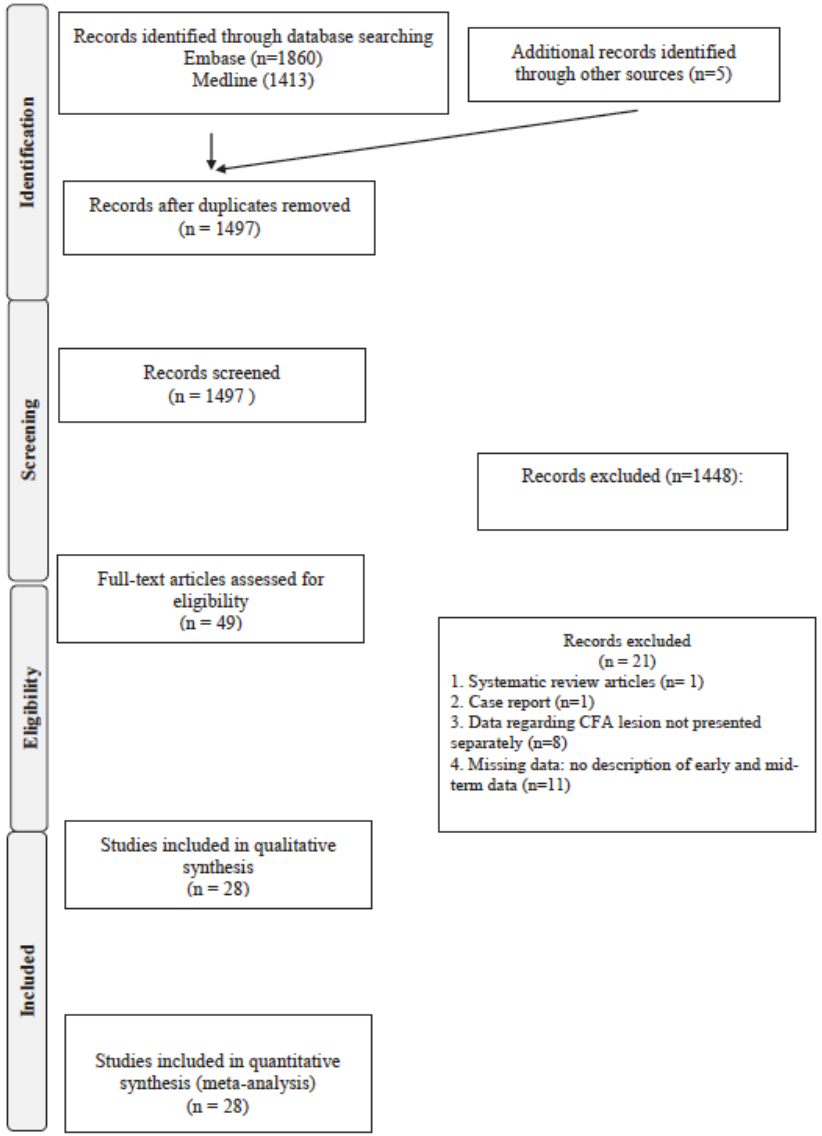
Konstantinos Stavroulakis, MD, Arne Schwindt, MD, Giovanni Torsello, MD, Efthymios Beropoulis, MD, Arne Stachmann, MD, Christiane Hericks, MD, Leonie Bollenberg, MD, and Theodosios Bisdas, MD, PhD

- Periop morbidity in favor of endo
- 1 year patency similar endo vs open
- Long term patency favor open

Systematic review and meta-analysis of endovascular versus open repair for common femoral artery atherosclerosis treatment

Mourad Boufi, MD, PhD,[a,b] Meghan Ejargue, MD,[a] Magaye Gaye, MD,[a] Laurent Boyer, MD, PhD,[c] Yves Alimi, MD, PhD,[a,b] and Anderson D. Loundou, PhD,[c] *Marseille, France*

Other evidence



Systematic review and meta-analysis of endovascular versus open repair for common femoral artery atherosclerosis treatment

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Other evidence

Journal of Vascular Surgery
Volume 73, Number 4

A

Study name	Odds ratio	Lower limit	Upper limit	Z-Value	p-Value
		Statistics for each study			
Linni 2014	2.026	0.066	62.138	0.404	0.686
Goueffic 2017	1.075	0.021	55.129	0.036	0.971
	1.542	0.116	20.421	0.329	0.743

0.01

B

Study name	Odds ratio	Lower limit	Upper limit	Z-Value	p-Value
		Statistics for each study			
Linni 2014	0.121	0.014	1.034	-1.930	0.054
Goueffic 2017	0.031	0.004	0.239	-3.328	0.001
	0.059	0.013	0.260	-3.740	0.000

0.01

C

Study name	Odds ratio	Lower limit	Upper limit	Z-Value	p-Value
		Statistics for each study			
Linni 2014	5.260	0.245	113.106	1.060	0.289
Goueffic 2017	2.167	0.071	65.893	0.444	0.657
	3.539	0.361	34.682	1.085	0.278

0.01

Fig 2. Random effects meta-analysis plot comparing endovascular repair (*ER*) and open surgery (*OS*) for 30-day mortality **(A)**, postoperative morbidity **(B)**, and early reintervention **(C)**. *CI*, Confidence interval.

Systematic review and meta-analysis of endovascular versus open repair for common femoral artery atherosclerosis treatment

MD, PhD,[a,b] Meghan Ejargue, MD,[a] Magaye Gaye, MD,[a] Laurent Boyer, MD, PhD,[c]
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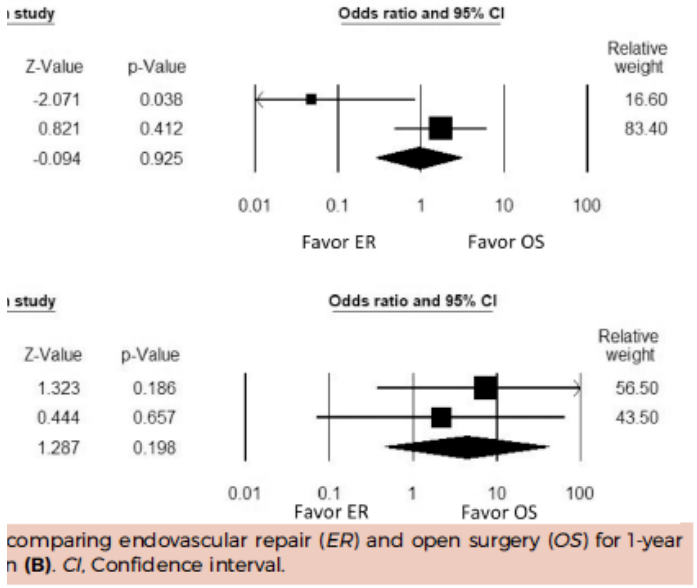
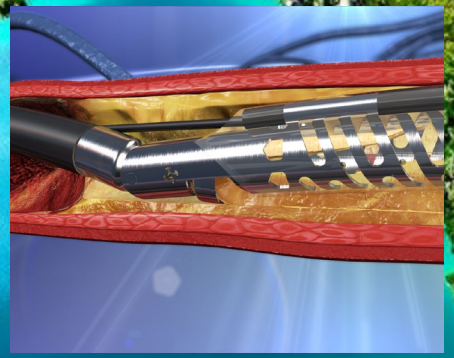


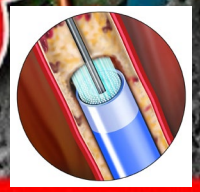
comparing endovascular repair (*ER*) and open surgery (*OS*) for 1-year
n **(B)**. *CI*, Confidence interval.

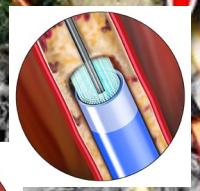
Endovascular Atherectomy Should be the First Choice in Treating Common Femoral Stenoses?

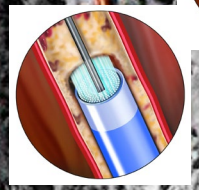
INVASION PLAN

CANADA

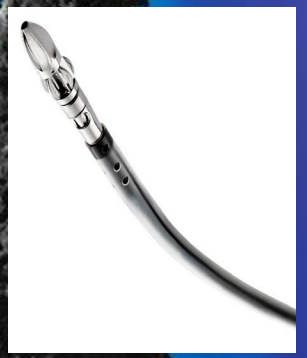








USA



Thank you

Make the Common Femoral Artery Great Again!!

Rebuttal

Case of CFA atherectomy and DCB

Rebuttal

- Atherectomy less invasive and decent in high-risk surgical patients

IT SHOULD NOT BE THE FIRST CHOICE FOR ALL!!

  - Effectiveness and durability matter more
  - May need repeat interventions, increased costs
  - Give me the data!!

CFA ATHERECTOMY AND DCB

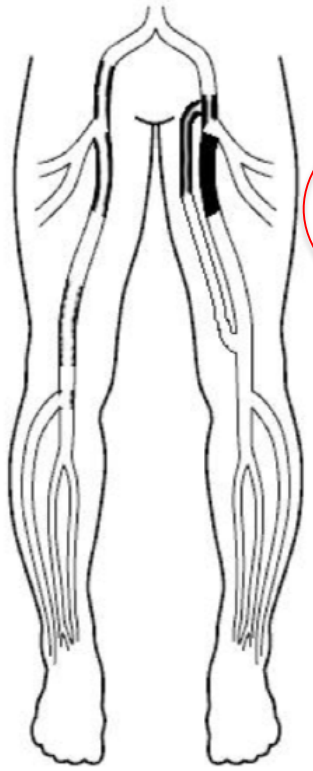
RESULTS

	Size (cm)	Velocity (cm/s)		Stenosis
Aorta:	1.6	128		Mild

Right

	Velocity (cm/s)	Flow	Stenosis
Dist EIA:	211	3 - Bi / Mono	Moderate
CFA:	269	3 - Bi / Mono	Moderate
Prox PFA:	320	3 - Bi / Mono	Moderate
Prox SFA	258	4 - Biphasic	Moderate
Mid SFA	72	4 - Biphasic	
Dist SFA	147	4 - Biphasic	Mild
Pop AK:			
Popliteal:	111	4 - Biphasic	Mild
Pop BK:	75	4 - Biphasic	
Post.Tibial:	65	4 - Biphasic	
Peroneal:			
Ant. Tibial:			
Dors. Pedis:	46	3 - Bi / Mono	

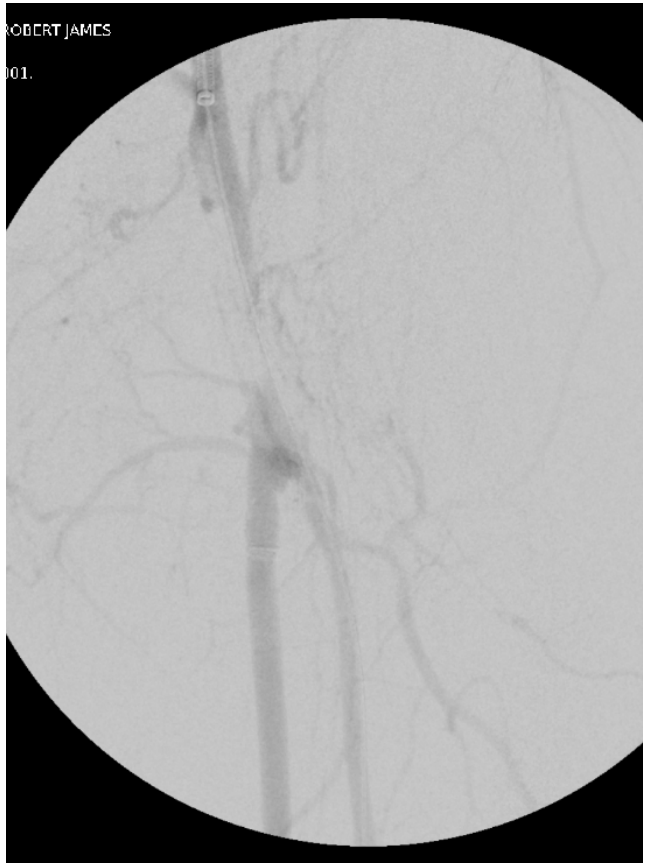
	Pressure (mmHg)	ABI
Brachial:	100	
Ant. Tibial:	84	0.82
Post.Tibial:	94	0.92
Toe:	66	0.65



Left

	Velocity (cm/s)	Flow	Stenosis
Dist EIA:	133	3 - Bi / Mono	
CFA:	489	1 - Mono	Severe
Prox PFA:	346	1 - Mono	Severe
Prox SFA	0		Occluded
Mid SFA	60	2 - Mono	
Dist SFA	50	2 - Mono	
Pop AK:			
Popliteal:	28	2 - Mono	
Pop BK:	40	2 - Mono	
Post.Tibial:	30	2 - Mono	
Peroneal:			
Ant. Tibial:			
Dors. Pedis:	30	2 - Mono	

	Pressure (mmHg)	ABI
Brachial:	102	
Ant. Tibial:	37	0.36
Post.Tibial:	36	0.35
Toe:	22	0.22


ROBERT JAMES
001.


BERT JAMES


RT JAMES

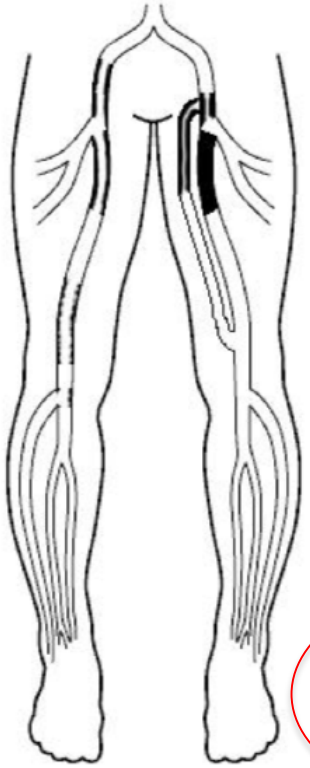
3 MONTHS U/S

RESULTS

	Size (cm)	Velocity (cm/s)		Stenosis
Aorta:	1.6	128		Mild

	Right Velocity (cm/s)	Flow	Stenosis	*Left* Velocity (cm/s)	Flow	Stenosis
Dist EIA:	211	3 - Bi / Mono	Moderate	133	3 - Bi / Mono	
CFA:	269	3 - Bi / Mono	Moderate	489	1 - Mono	Severe
Prox PFA:	320	3 - Bi / Mono	Moderate	346	1 - Mono	Severe
Prox SFA	258	4 - Biphasic	Moderate	0		Occluded
Mid SFA	72	4 - Biphasic		60	2 - Mono	
Dist SFA	147	4 - Biphasic	Mild	50	2 - Mono	
Pop AK:						
Popliteal:	111	4 - Biphasic	Mild	28	2 - Mono	
Pop BK:	75	4 - Biphasic		40	2 - Mono	
Post.Tibial:	65	4 - Biphasic		30	2 - Mono	
Peroneal:						
Ant. Tibial:						
Dors. Pedis:	46	3 - Bi / Mono		30	2 - Mono	

	Right Pressure (mmHg)	ABI	*Left* Pressure (mmHg)	ABI
Brachial:	100		102	
Ant. Tibial:	84	0.82	37	0.36
Post.Tibial:	94	0.92	36	0.35
Toe:	66	0.65	22	0.22

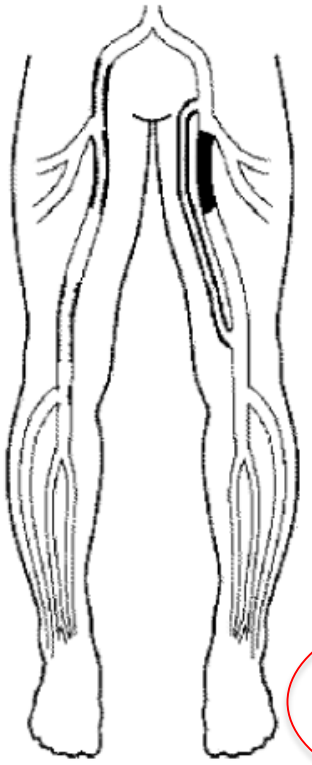


RESULTS

	Size (cm)	Velocity (cm/s)		Stenosis
Aorta:	1.8	167		Mild

	Right Velocity (cm/s)	Flow	Stenosis	*Left* Velocity (cm/s)	Flow	Stenosis
Dist EIA:	214	4 - Biphasic	Moderate	63	3 - Bi / Mono	
CFA:	232	4 - Biphasic	Moderate	183	4 - Biphasic	
Prox PFA:	270	3 - Bi / Mono	Moderate	227	3 - Bi / Mono	Mild
Prox SFA	234	4 - Biphasic	Moderate	0		Occluded
Mid SFA	84	4 - Biphasic		107	4 - Biphasic	
Dist SFA	131	4 - Biphasic	Mild	82	4 - Biphasic	
Pop AK:						
Popliteal:	81	4 - Biphasic	Mild	100	4 - Biphasic	
Pop BK:	63	4 - Biphasic		80	4 - Biphasic	
Post.Tibial:	47	4 - Biphasic		60	3 - Bi / Mono	
Peroneal:						
Ant. Tibial:						
Dors. Pedis:	36	4 - Biphasic		44	4 - Biphasic	

	Right Pressure (mmHg)	ABI	*Left* Pressure (mmHg)	ABI
Brachial:	119		119	
Ant. Tibial:	93	0.78	90	0.76
Post.Tibial:	99	0.83	95	0.80
Toe:	75	0.63	70	0.59



FINDINGS