

*Can lower extremity acute arterial occlusions
be treated under duplex guidance alone? YES!*

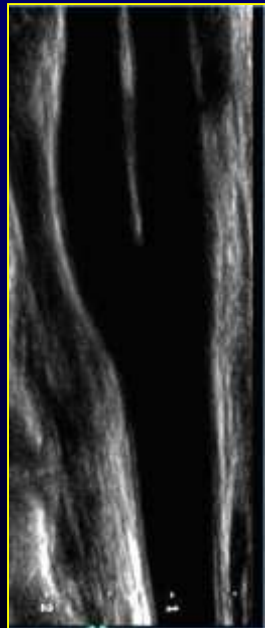
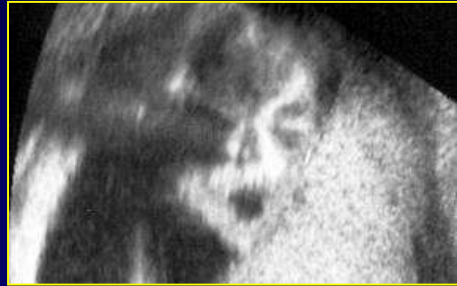
*Natalie Marks, MD
Enrico Ascher, MD*

*The Vascular Institute of New York®
NYU Langone Medical Center Brooklyn*



No disclosures

Duplex Scanning Advantages



- *Cheap*
- *Non - invasive*
- *Mobile / Repeatable*
- *Arterial wall imaging*
- *Hemodynamics*
- *Sensitive to low flow*

D I A G N O S I S

The Use of Duplex Ultrasound Arterial Mapping as an Alternative to Conventional Arteriography for Primary and Secondary Infrapopliteal Bypasses

Enrico Ascher, MD, Fernanda Mazzariol, RVT, MD, Anil Hingorani, MD, Sergio Salles-Cunha, PhD, Prasad Gade, MD, Brooklyn, New York

1. Reliably identifies inflow and outflow vessels
2. Selects the best site for an anastomosis (calcified)
3. Identifies the cause and AGE of occlusion
4. Visualizes low flow patent arteries (occluded by angio)

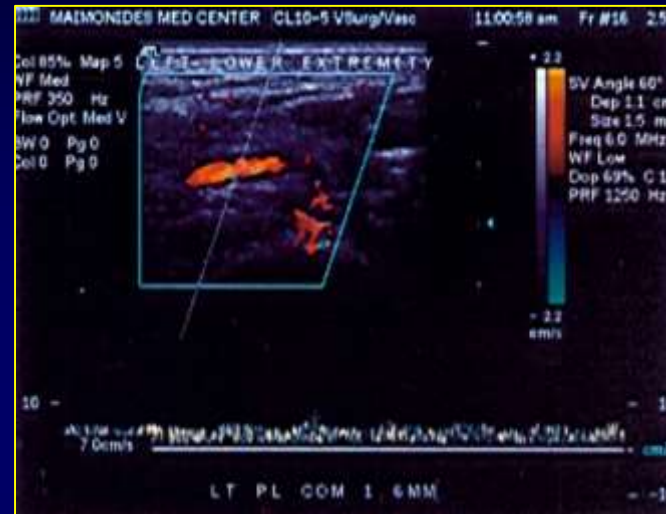
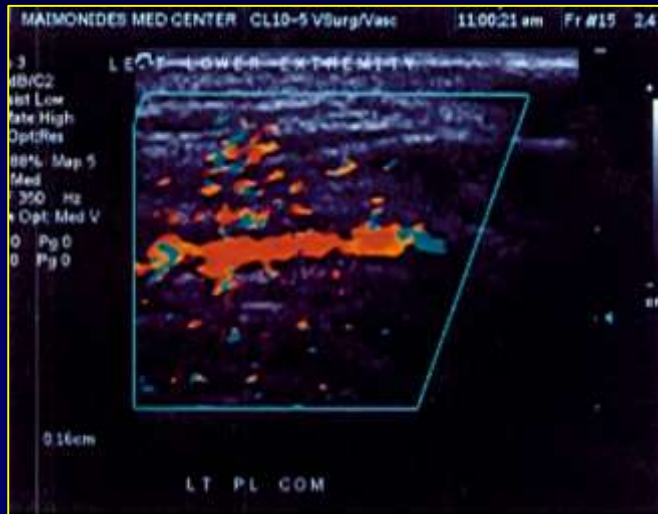
Values and Limitations of Duplex Ultrasonography as the Sole Imaging Method of Preoperative Evaluation for Infrapopliteal Bypasses

Enrico Ascher, MD, Sergio X. Salles-Cunha, PhD, Anil Hingorani, MD, Brooklyn, New York

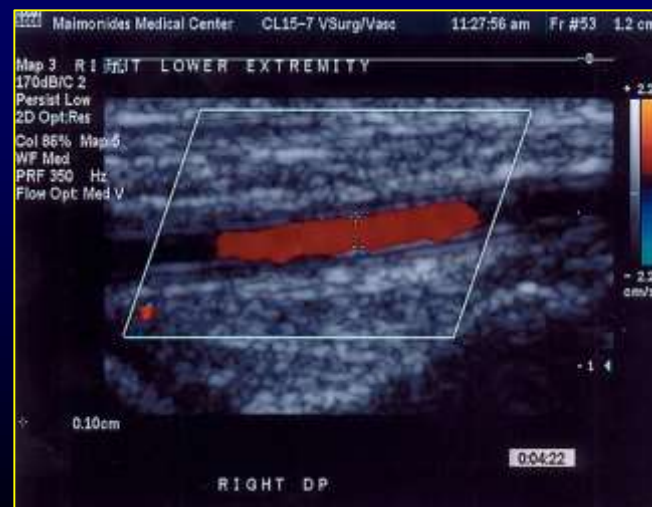
Lower Extremity Revascularization without Preoperative Contrast Arteriography: Experience with Duplex Ultrasound Arterial Mapping in 485 Cases

Enrico Ascher, MD, Anil Hingorani, MD, Natalia Markevich, MD RVT, Tatiana Costa, MD RVT, Shreedhar Kallakuri, MD, and Yuri Khanimoy, MD, Brooklyn, New York

Duplex Sensitivity to Low Flow



5 cm/sec



2.3 cm/sec



**T
H
E
R
A
P
Y**

Duplex-assisted internal carotid artery balloon angioplasty and stent placement: A novel approach to minimize contrast material

Enrico Ascher, MD, Natalie A. Marks, MD, MD, Brooklyn, NY

- **Femoral - popliteal**

407

Background: Carotid artery balloon angioplasty and endarterectomy may be harmful if contrast material is used.

- **A-V access**

430

- **Infrapopliteal**

80

- **Infringuinal bypasses**

65

- **Carotid artery**

41

- **Popliteal aneurysm**

38

- **Others**

18

Total: 1080 cases

Duplex-guided endovascular treatment for occlusive and stenotic lesions of the femoral-popliteal arterial segment: A comparative study in the first 253 cases

Enrico Ascher, MD, Natalie A. Marks, MD, RVT, Anil P. Hingorani, MD, Richard W. Schutzer, MD, and Manikyam Mutyala, MD, Brooklyn, NY

Objective: The standard technique of balloon angioplasty with or without subintimal dissection of infringuinal arteries

Duplex-guided balloon angioplasty and stenting for femoropopliteal arterial occlusive disease: An alternative in patients with renal insufficiency

Enrico Ascher, MD, Natalie A. Marks, MD, RVT, Richard W. Schutzer, MD, and Anil P. Hingorani, MD, Brooklyn, NY

angiography and fluoroscopy of nephrotoxic contrast agents. 37 patients underwent 37 lower extremity bypasses (mean ± SD, 74 ± 9

Duplex Guided Balloon Angioplasty of Failing Infringuinal Bypass Grafts

E. Ascher
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duplex guidance for failing grafts. 14 ± 10 years presented to our institution with a 1 was in the inflow in four cases, conduit in 18 sites cannulations were performed under direct to manipulate the guide wire and directional

Duplex - Guided Balloon Angioplasty

Results

➤ Technical success	387 / 407	(95 %)
★ Stenoses	264 / 265	(99.6 %)
★ Occlusions	123 / 142	(87 %) *

* $P < 0.0001$

A Duplex - Guided Approach to Acute Arterial Occlusions: 27 cases

Intraop. Thromboembolism (12/387 cases)

<i>➤ Thromboembolism</i>	<i>12</i>	<i>(3.1 %)</i>
<i>★ Popliteal</i>	<i>6</i>	<i>(50 %)</i>
<i>★ TP trunk</i>	<i>5</i>	<i>(42 %)</i>
<i>★ Peroneal</i>	<i>1</i>	<i>(8 %)</i>

A Duplex - Guided Approach to Acute Arterial Occlusions: 27 cases

Additional 15 Cases (CRF)

➤	<i>Infringuinal Arteries</i>	<i>12</i>	
	★ <i>Femoral</i>	<i>5</i>	
	★ <i>Popliteal (2 PAA)</i>	<i>6</i>	
	★ <i>TP trunk</i>	<i>1</i>	
➤	<i>Infringuinal Bypasses</i>	<i>3</i>	
	★ <i>Fem – pop</i>	<i>PTFE</i>	<i>1</i>
	★ <i>Fem – AT</i>	<i>vein</i>	<i>1</i>
	★ <i>Fem – DP</i>	<i>vein</i>	<i>1</i>

A Duplex - Guided Approach to Acute Arterial Occlusions: 27 cases

Treatment

<i>➤ Suction thrombectomy</i>	<i>17</i>	<i>(63 %)</i>
<i>➤ Thrombolysis alone</i>	<i>5</i>	<i>(19 %)</i>
<i>➤ Thrombectomy + thrombolysis</i>	<i>3</i>	<i>(11 %)</i>
<i>➤ Thrombolysis + suction + stent</i>	<i>2</i>	<i>(7 %)</i>

*A Duplex - Guided Approach to Acute Arterial
Occlusions: 27 cases*

Overall Results

24 / 27 patent (89%)

3 – 36 months (mean 13 ± 8)

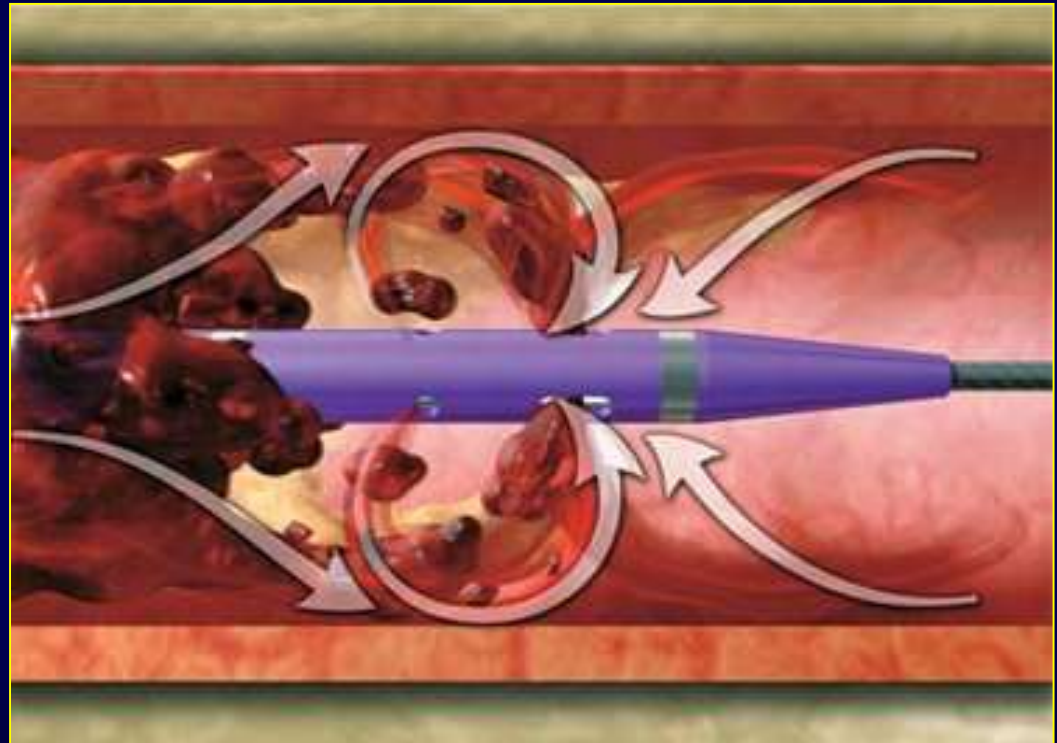
Thrombolysis for TP Trunk Embolus



Thrombus proximal to the inflated balloon



Angiojet



Acute Thrombosis of SFA Stents Mechanical Thrombectomy



Acute Popliteal Embolus & SFA Stenosis Mechanical Thrombectomy



Conclusion

- *Avoidance of nephrotoxic agents*
- *Visualization of low flow arteries*
- *Identification of the cause of occlusion*

are unique advantages of duplex arteriography.

Conclusion

- *Patients with acute arterial ischemia of diverse etiology can be safely treated by various endovascular procedure under duplex guidance alone*

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