


## Obstruction or Reflux: What to Treat First in Venous Ulcers

Robert B. McLafferty, M.D., M.B.A.  
*Professor of Surgery*  
*Division of Vascular Surgery*  
*Medical Director, Wound & Hyperbaric Center*  
*Oregon Health & Science University*  
*Portland, Oregon*



## Obstruction or Reflux: What to Treat First


### Disclosures

# None



## Obstruction or Reflux: What to Treat First

### The Challenge of Venous Ulcers





## Obstruction or Reflux: What to Treat First

### Adhering to the Algorithm

ALL VLUs need these interventions



- *Compression* – most often multilayer, changed 2-3/week
- *Debridement* – removal slough / devitalized tissue / biofilm
- *Inflammation control* – topical steroids, drainage control
- *Infection control* – as needed with abx (topical, oral, IV)
- *Biologic application* – stalled with good granulation bed
- *Comorbidity control* – e.g. diuretics, DM control
- *Home interventions* – activity pause / skilled nursing



## Obstruction or Reflux: What to Treat First

### Not All Venous Ulcers Are Alike

- Post-thrombotic v. Non-thrombotic
- BMI?
- Edema?
- Inflammation?
- Necrotic tissue?
- Lipodermatosclerosis?
- Location?
- Biofilm?
- Pain?
- Ulcer size?
- Ulcer Recurrence?
- Socioeconomic status?
- Time?

## Obstruction or Reflux: What to Treat First

### Realistic Goals are Important

- Heal the ulcer
- Increase rate of healing
- Prevent recurrence
- Improve quality of life
- Be cost efficient
- Make it smaller?
- Prevent it from getting larger?
- Minimize pain?
- Optimize ease of care?





## Obstruction or Reflux: What to Treat First Our Armamentarium...

### Reflux

- **Ablation:** axial venous reflux, perforators
- **Phlebectomy:** branch varicosities
- **Sclerotherapy:** axial, branch, peri-ulcer varicosities
- **Vein Stripping:** axial venous reflux
- **Valvuloplasty/transfer/art. valve:** deep venous reflux

### Obstruction

- **PTA/Stenting:** iliac vein/IVC obstruction
- **Venous bypass:** iliac vein/IVC obstruction
- **Endophlebectomy:** iliac/femoral vein obstruction



## Obstruction or Reflux: What to Treat First Is reflux or obstruction present or not?

### Guideline 3.9: Venous Duplex Ultrasound

We recommend **comprehensive** venous duplex ultrasound examination of the lower extremity in all patients with suspected venous leg ulcer. [GRADE - 1; LEVEL OF EVIDENCE - B]

### Guideline 3.11: Venous Imaging

We suggest **selective** computed tomography venography, magnetic resonance venography, contrast venography, and/or intravascular ultrasound in patients with suspected venous leg ulceration if additional advanced venous diagnosis is required for thrombotic or nonthrombotic iliac vein obstruction or for operative planning before open or endovenous interventions. [GRADE - 2; LEVEL OF EVIDENCE - C]

Management of Venous Leg Ulcers: Clinical Practice Guidelines of the Society for Vascular Surgery and The American Venous Forum  
J Vasc Surg 2014;60:55-55S (August 2014 Supplement)



## Obstruction or Reflux: What to Treat First Rx Reflux Only vs. Reflux and Obstruction?

Outcomes of endovenous laser ablation with additional iliac vein stenting of nonthrombotic lesions in patients presenting with active venous ulcers

Yang X, et al. *JVS-FL* 2021;9(6):1517

What percentage of non-postthrombotic C6 patients had NIVL? **72.3%**

- 93 EVLA + stenting
- 64 EVLA only
- Ulcer healing at 1 year:
  - EVLA + S : 86.8%
  - EVLA : 65.6% p = 0.001



## Obstruction or Reflux: What to Treat First Incidence of ilio-caval obstruction on CT/MR

### Iliocaval stenosis % of 78 C5-6 cases

100%	8.8%
80-99%	14.0%
50-79%	14.0%
30 - 49%	5.3%
10-29%	17.5%
0-10%	42.1%
≥80%	23%
≥50%	37%



Marston W, *JVS* 2011;53:1303



## Obstruction or Reflux: What to Treat First Treatment Focus

# Reflux



## Obstruction or Reflux: What to Treat First Ablation, Phlebectomy (& Stripping)

- The ESCHAR Trial (*BMJ* 2007;335)
  - Superficial venous surgery + compression vs. compression only
    - Reduces ulcer recurrence
    - Increases ulcer free time
- The EVRA Trial (*NEJM* 2018; 378)
  - Early ablation vs. deferred ablation
    - Reduces time to healing
    - Increases healing rate
    - Increases median ulcer free time



## Obstruction or Reflux: What to Treat First

### Peri-ulcer Sclerotherapy (Terminal Interruption of the Reflux Source)

Axial Ablation versus Terminal Interruption of the Reflux Source (AAVTIRS): A Randomized Controlled Trial  
Keohane CR, et al. *Vasc Endovasc Surg* 2024; 58:805

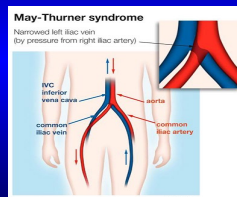
- Single center randomized trial; assessor blinded
- 98 patients with VLUs: Axial Ablation vs. TIRS
- **AA group: 70.9% healed** – median time: 84 days
- **TIRS group: 74.4% healed** – median time: 84 days
- $p = 0.45$  (not powered to show non-inferiority)



## Obstruction or Reflux: What to Treat First

### Treatment Focus

# Obstruction



## Obstruction or Reflux: What to Treat First

### Summary

- Logically, treat obstruction first
- Iliac venography should be done in C6 patients (CTV, MRV, Venogram?)
- Reflux treatment in C6 disease should be comprehensive
- Both reflux and obstructive treatment should be done early
- Adhere to all the tenants of good wound care for VLUs

