



# i-MEET

**NEXT GENERATION**

Multidisciplinary European Endovascular Therapy

## WHAT ABOUT FOAM SCLEROTHERAPY IN REVAS?

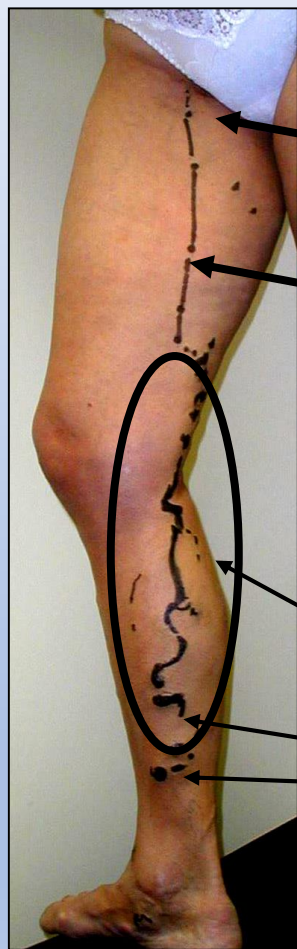
Dr O CRETON – Ste FOY LES LYON

# Disclosure of Interest

I have the following potential conflicts of interest to report:

- Consulting: Medtronic

# WHAT ABOUT REVAS?

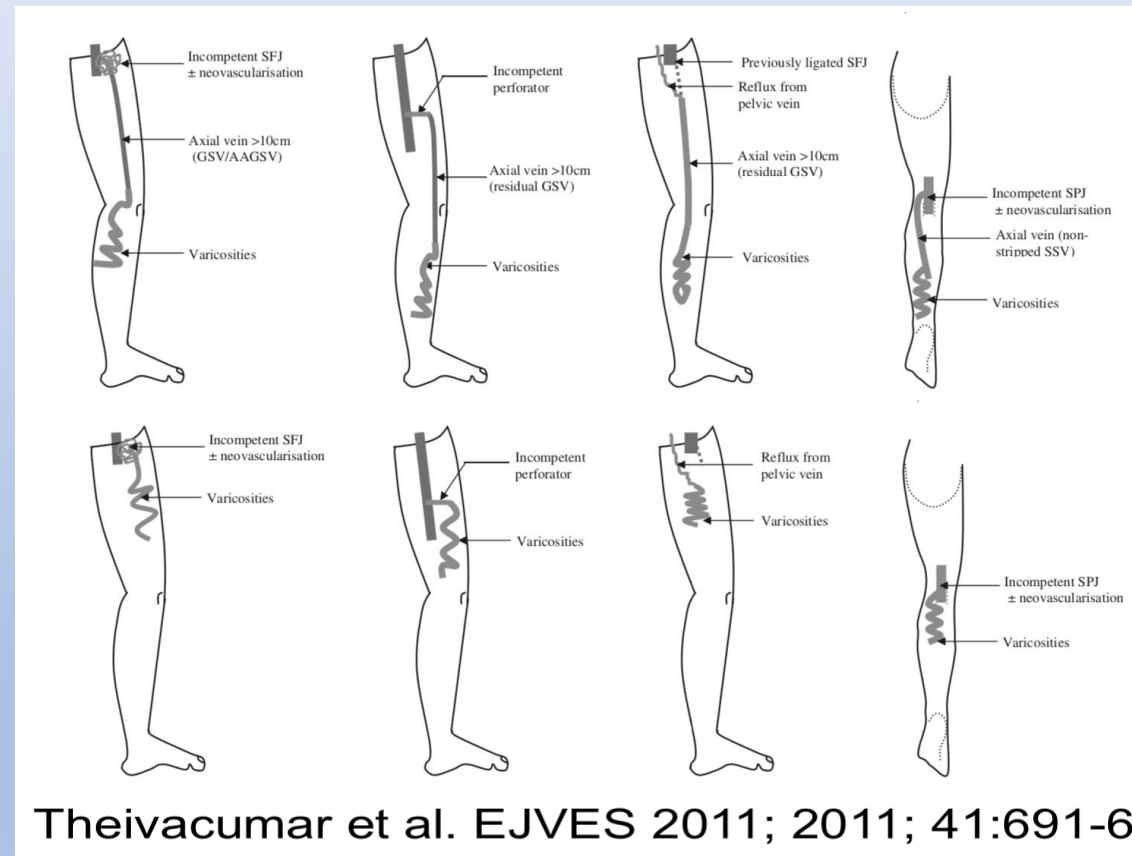


Source of reflux

« Trunck » = reflux transmission

Varicose veins = Low pressure tank

Re-entry leg perforators



THE TREATMENT HAS TO BE THE MOST COMPLETE AND THE LESS INVASIVE

# THE ANATOMOPATHOLOGY IS SPECIFIC

Neovascularization

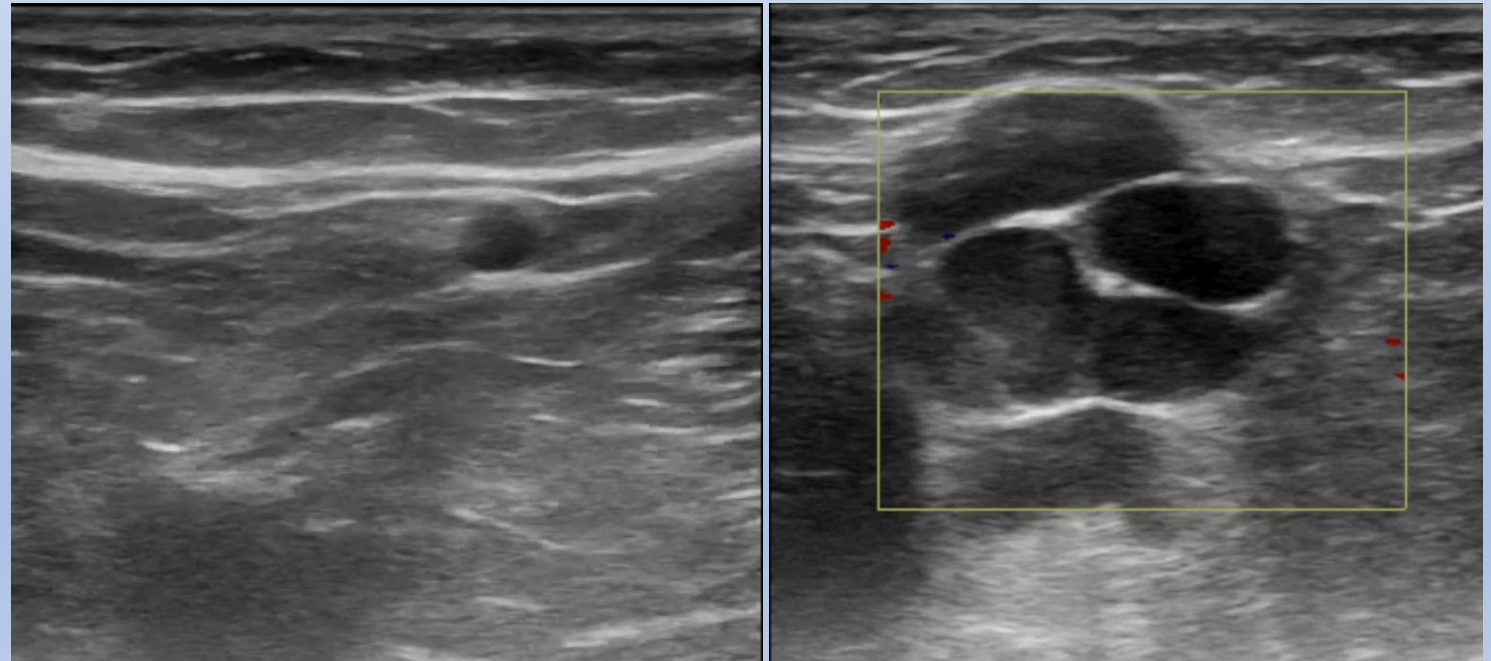
Residual trunk

Recanalization

Perforators



*Van Rij AM et al*  
*J Vasc Surg 2004;40:296-302*



# SPECIFIC LESIONS

Neovascularization

Residual trunk

Recanalization

Perforators



# SPECIFIC LESIONS

Neovascularization

Residual trunk

Recanalization

Perforators



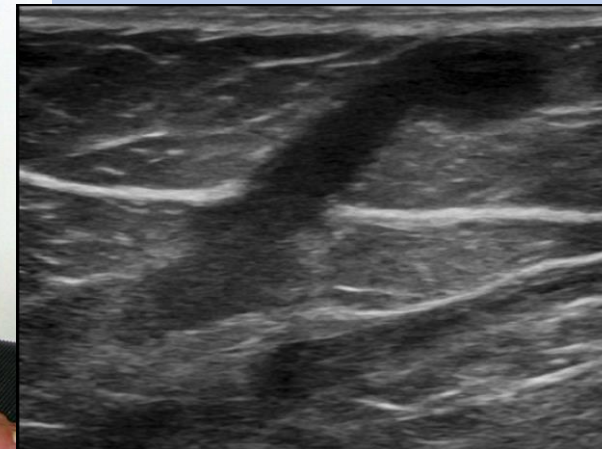
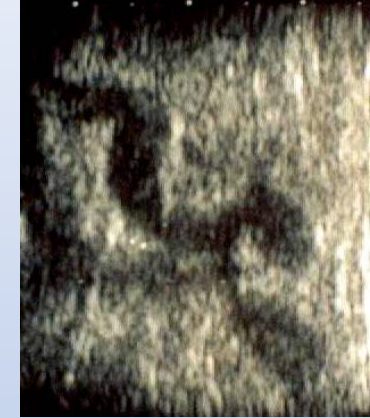
# SPECIFIC LESIONS

Neovascularization

Residual trunk

Recanalization

Perforators



## SPECIFIC LESIONS

Neovascularization

Residual trunk

Recanalization

Perforators

## CLASSIC SURGERY

INAPPROPRIATE

DIFFICULT

TRAUMATIC

## ALTERNATIVE

EXTENSIVE PHLEBECTOMIES  
WITHOUT GROIN REDO SURGERY

*Pittaluga et al, J Vasc Surg, 2010*

ENDOVENOUS ABLATION OF  
RESIDUAL TRUNCK

*Theivacumar et al, EJVES, 2011*

ULTRASOUND GUIDED  
FOAM SCLEROTHERAPY



# HOW TO PERFORM UGFS?

- POLIDOCANOL
- SULFATE TETRADECYL
- 1-3%
- FOAM PREPARATION: Tessari, 1:4
- Access site: Needle, cannula, butterfly, catheter
- Volume: max 10ml / session
- Contraindications:
  - Right to left shunt (PFO)
  - Migraine

Original Article

## European guidelines for sclerotherapy in chronic venous disorders

E Rabe<sup>1</sup>, FX Breu<sup>2</sup>, A Cavezzi<sup>3</sup>, P Coleridge Smith<sup>4</sup>, A Frullini<sup>5</sup>, JL Gillet<sup>6</sup>, JJ Guex<sup>7</sup>, C Hamel-Desnos<sup>8</sup>, P Kern<sup>9</sup>, B Partsch<sup>10</sup>, AA Ramelet<sup>11</sup>, L Tessari<sup>12</sup> and F Pannier<sup>13</sup>; for the Guideline Group

Phlebology

Phlebology  
0(0) 1-17  
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DOI: 10.1177/0268355513483280  
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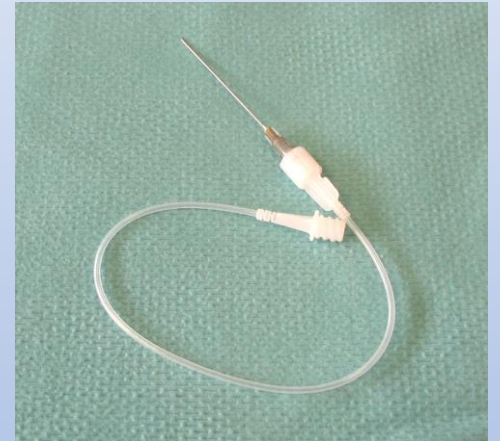


Tessari L et al. *Dermatol Surg* 2001;7:58-60

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NEOVASCULAR NETWORK  
TRUNCAL RECANALIZATION  
PERFORATORS



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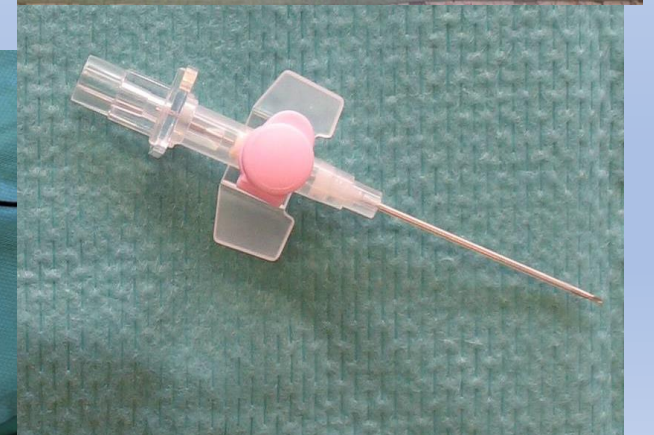
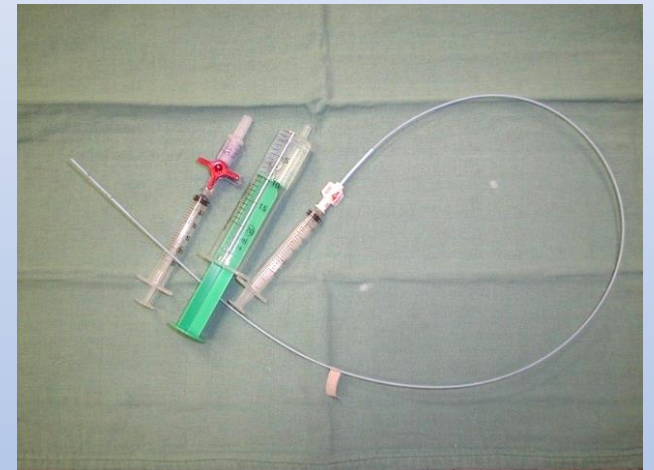
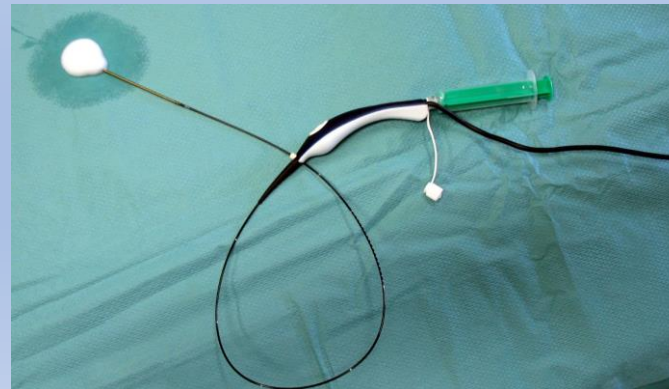
## TRIBUTARIES



# HOW TO PERFORM UGFS?

- POLIDOCANOL
- SULFATE TETRADECYL
- 1-3%
- FOAM PREPARATION: Tessari, 1:4
- Access site: Needle, cannula, butterfly, catheter
- Volume: max 10ml / session
- Contraindications:
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  - Migraina

RESIDUAL TRUNCK



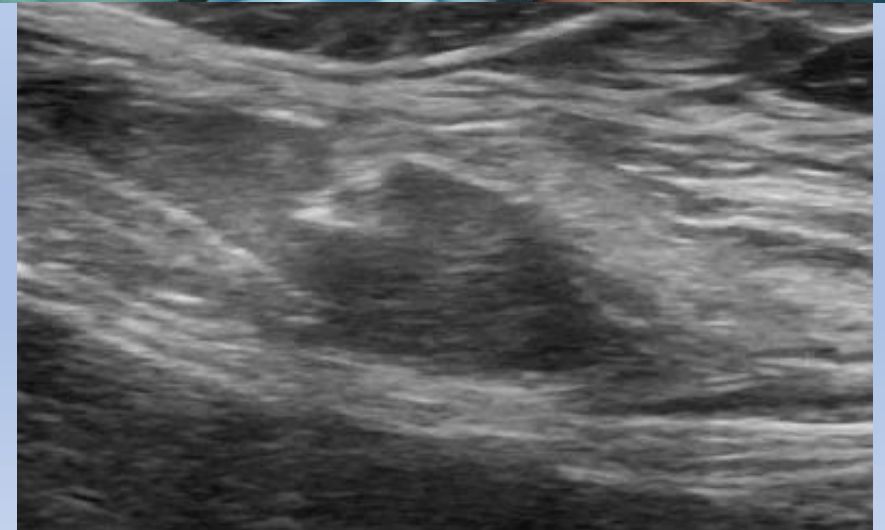
# THE PROCEDURE

- Prior to local tumescent anesthesia
- Procu bitus
- Puncture under US guidance
- Reflux and flux
- Trendelenburg
- Injection under US guidance
- Compression



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# THE PROCEDURE

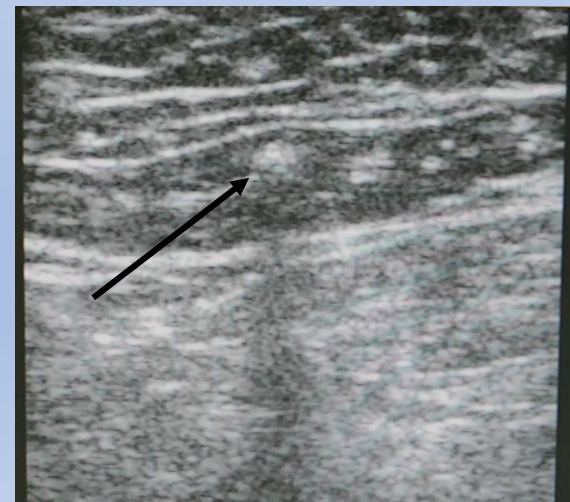
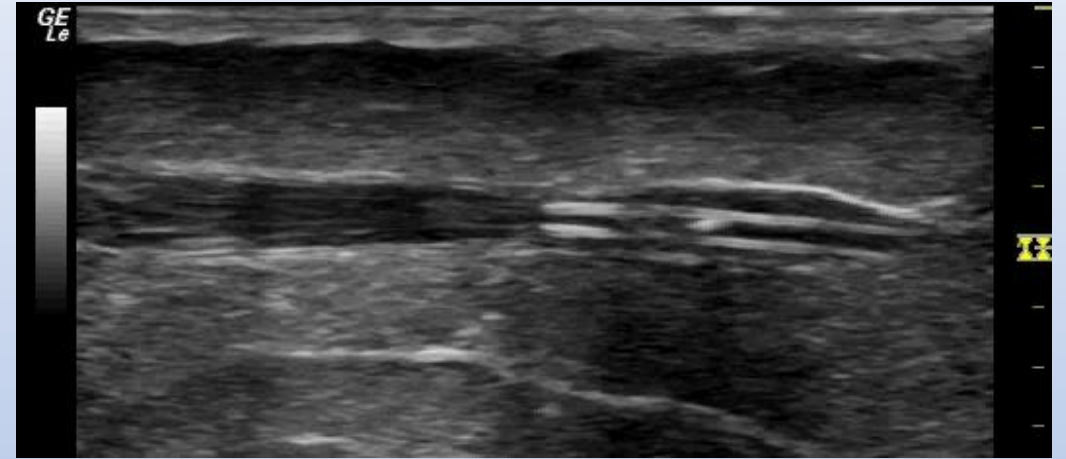
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- Compression

**Immediate walk-out  
LMWH  
Compression stocking: 1 week  
Duplex scan at D7**

# COMBINED SURGERY +++



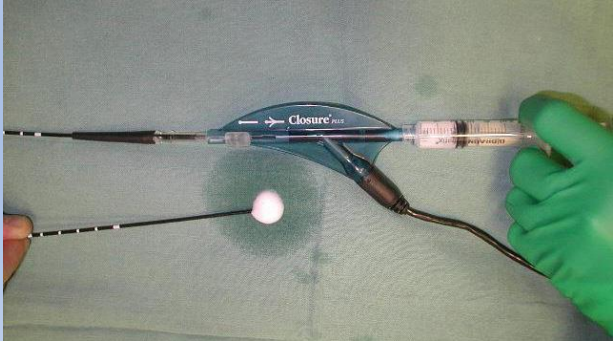
UGFS + Phlebectomies

# COMBINED SURGERY +++



UGFS + Phlebectomies

UGFS + EVRF

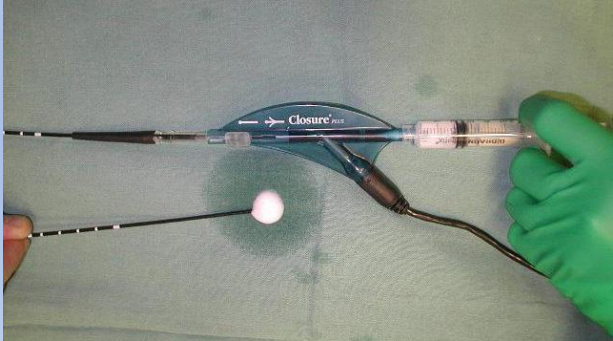


# COMBINED SURGERY +++

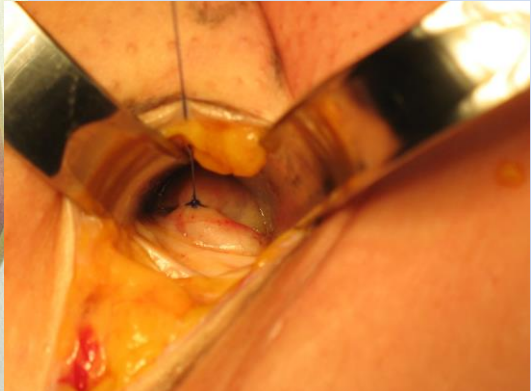


UGFS + Phlebectomies

UGFS + EVRF



UGFS + Stump ligation



**THE LITERATURE?**

**OCCLUSION?**

**RECANALIZATION?**

**RECURRENCE?**

# Foam Sclerotherapy Combined with Surgical Treatment for Recurrent Varicose Veins: Short Term Results

D. Creton<sup>1\*</sup> and J.F. Uhl<sup>2</sup>

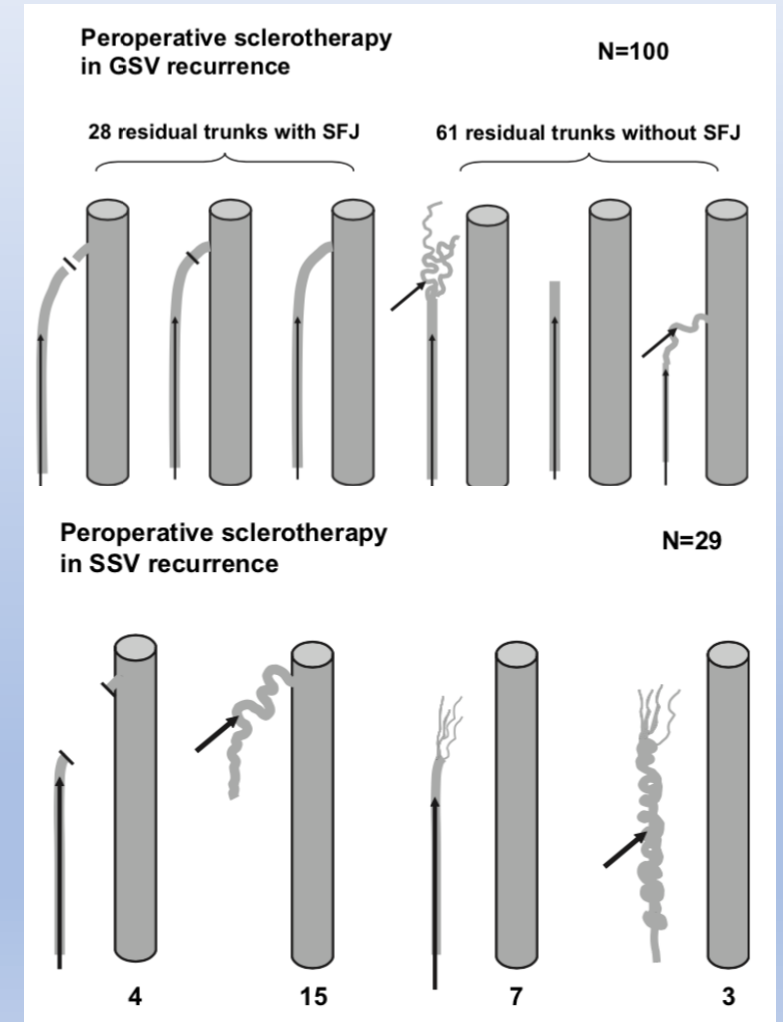
Eur J Vasc Endovasc Surg 33, 619–624 (2007)

100 GSV  
29 SSV

Phlebectomies  
Combined surgery (large SF/SP residual stump)

No major adverse event  
2 asymptomatic DVT

Occlusion rate: 92% at 40 days



## Duplex Ultrasound Outcomes following Ultrasound-guided Foam Sclerotherapy of Symptomatic Recurrent Great Saphenous Varicose Veins

K.A.L. Darvall <sup>a,b,\*</sup>, G.R. Bate <sup>a</sup>, D.J. Adam <sup>a</sup>, S.H. Silverman <sup>b</sup>,  
A.W. Bradbury <sup>a</sup>

[Eur J Vasc Endovasc Surg \(2011\) 42, 107–114](#)

91 legs (73 patients)

Occlusion rate:

- 93 - 98% after 1 session (BK - AK)
- 97 - 100% after 2 sessions (BK - AK)

Recanalisation: 9 - 12% at 12 months (BK- AK)

Long term recanalization despite early good results



# Ultrasound-guided foam sclerotherapy for the treatment of varicose veins

S. G. Darke and S. J. A. Baker

*British Journal of Surgery* 2006; **93**: 969–974

**Table 3** Early outcome of ultrasound-guided foam sclerotherapy

Morphology	No. of limbs treated	Complete after one intervention	Complete after two interventions	Complete after three interventions		
Primary GSV	97	64	19	1		
Primary SSV	23	22				
Primary other	38	33	2			
Recurrent GSV	18	10	55%	5	83%	↑
Recurrent SSV	5	5	100%		100%	==
Recurrent other	39	28	71%	7	90%	↑

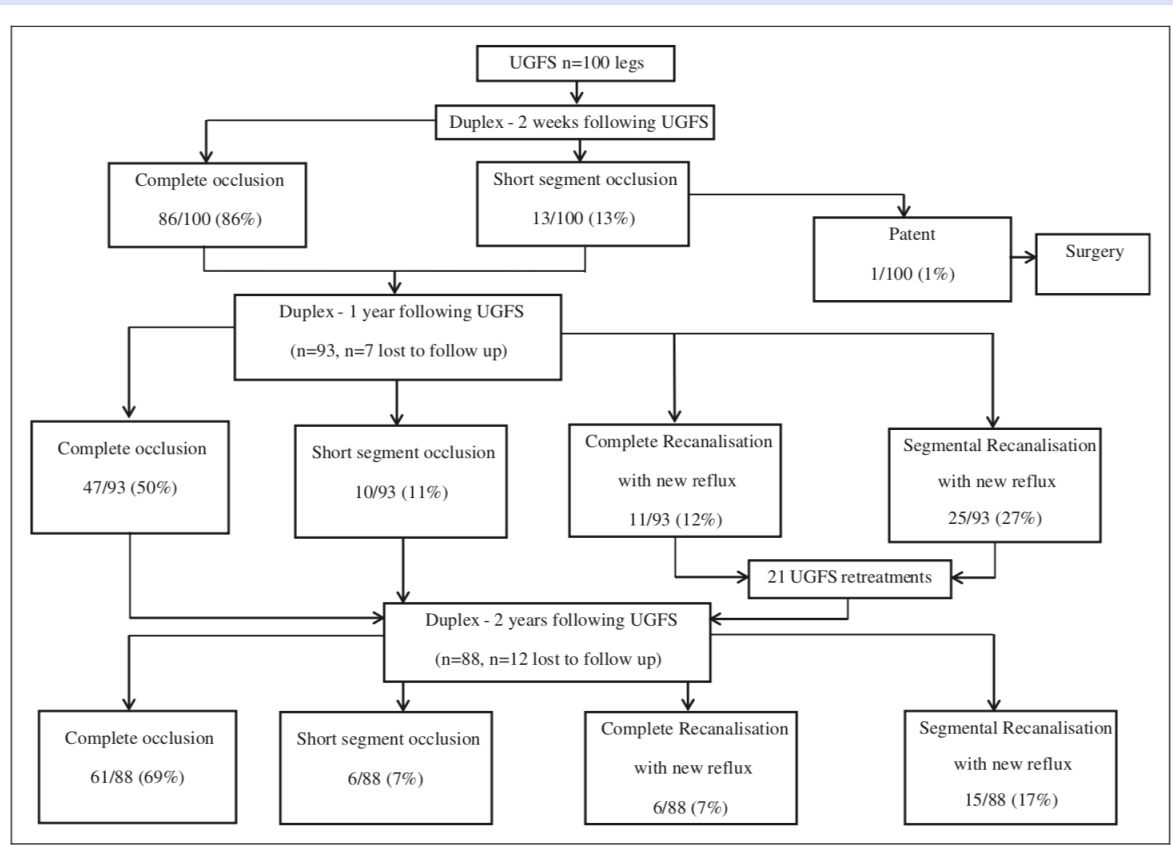
GSV, great saphenous vein; SSV, small saphenous vein. (6 weeks)

Early repeated UGFS is often needed to achieve complete occlusion

# Recanalisation and ulcer recurrence rates following ultrasound-guided foam sclerotherapy

Phlebology July 29, 2015

Julia K Howard, Fiona JA Slim, Margaret C Wakely, Lorraine G Emerson, Colin E Davies, Sachin R Kulkarni, Richard A Bulbulia, Mark R Whyman and Keith R Poskitt



100 legs  
C5 and C6

Occlusion

Ulcer recurrence

99%



61%



76%

1 year

21 UGFS retreatment

2 years

2,3%

5,1%

Late repeated UGFS improve long term occlusion rate

# CONCLUSION

**THE MOST SUITABLE TOOL FOR REVAS**

**COMBINED PROCEDURES +++**

**HIGH OCCLUSION RATE:** Repeated procedures

**RECANALIZATION:** Close follow-up and re-injection

**NEED MORE STUDIES:**

Long term results

Results on the different kind of revas (neovascular network, perforators ...)

Results on recurrences, QoI

THANK YOU FOR  
YOUR ATTENTION

