

# Description of a new technique: Sonovein (Echopulse) Indications and Results

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# Disclosures

- ▶ Founder The Whiteley Clinic
- ▶ Founder College of Phlebology

# Varicose Veins Treatments

- ▶ Open surgery



- ▶ Minimally invasive endovenous thermal ablation (TT)



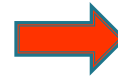
- ▶ Minimally invasive non-thermal endovenous ablation (NTNT)

# Varicose Veins Treatments

- ▶ Open surgery



- ▶ Minimally invasive endovenous thermal ablation (TT)



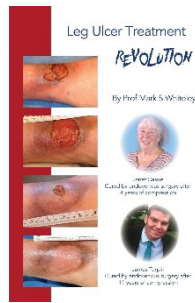
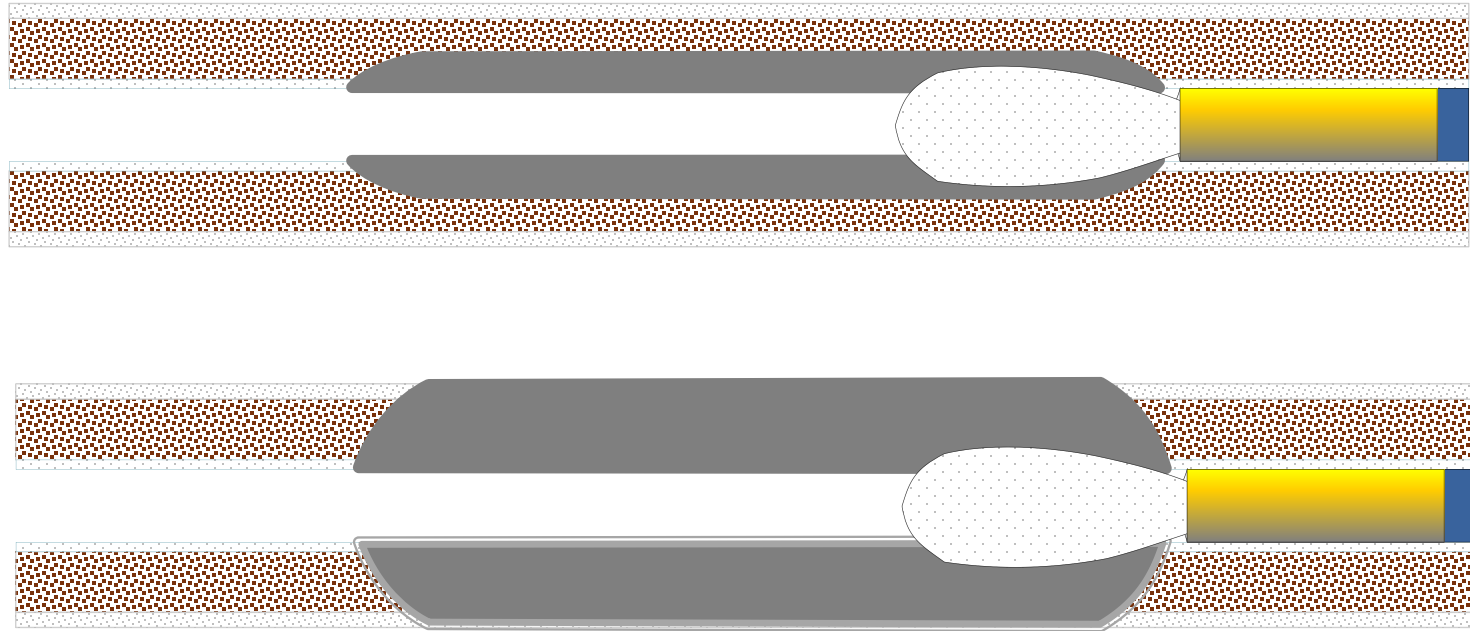
- ▶ Non-invasive venous ablation



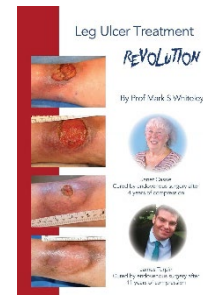
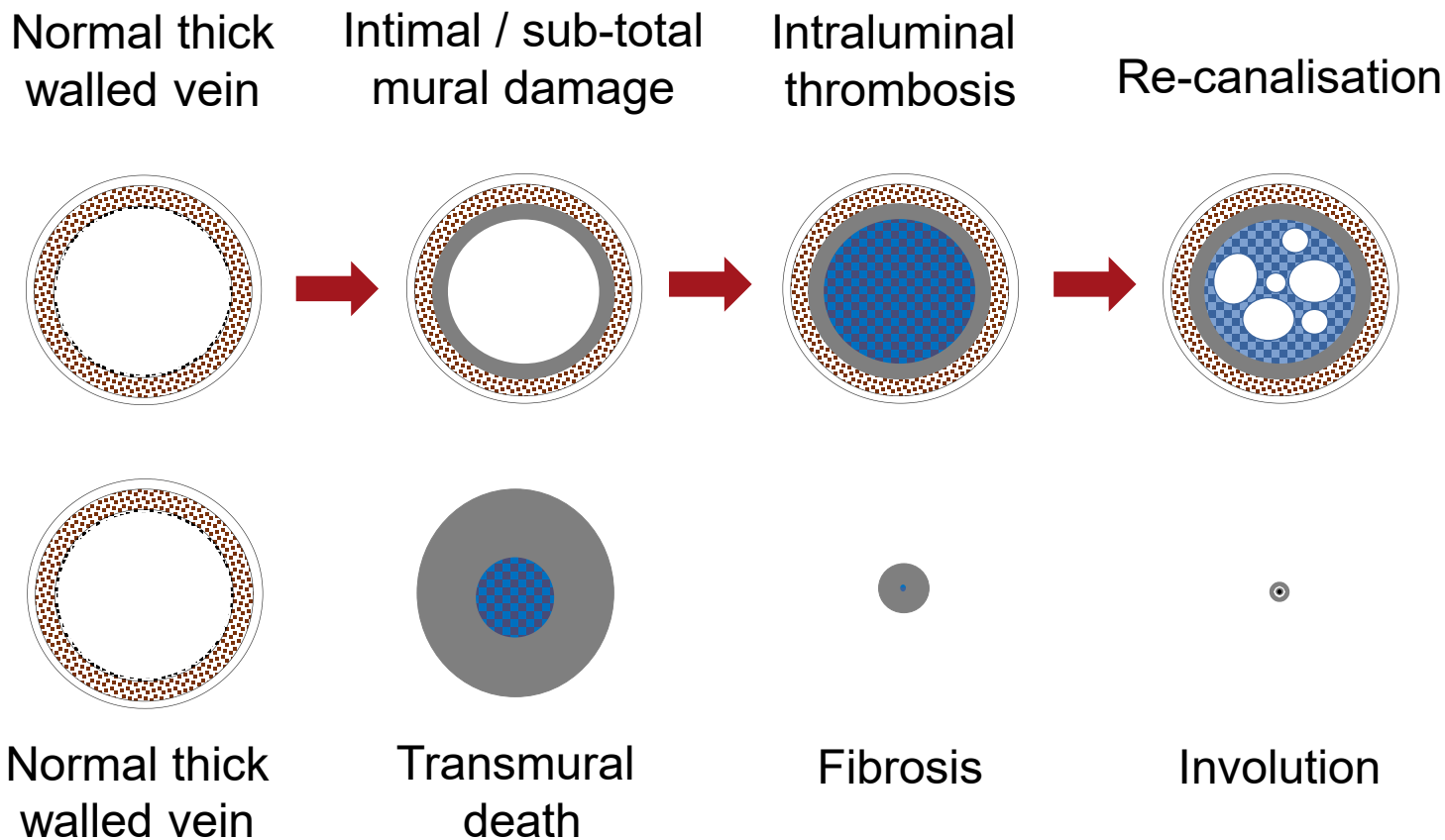
- ▶ Minimally invasive non-thermal endovenous ablation (NTNT)

# Endovenous Thermal Ablation

- ▶ Radial Heat Gradient



# Endovenous Thermal Ablation

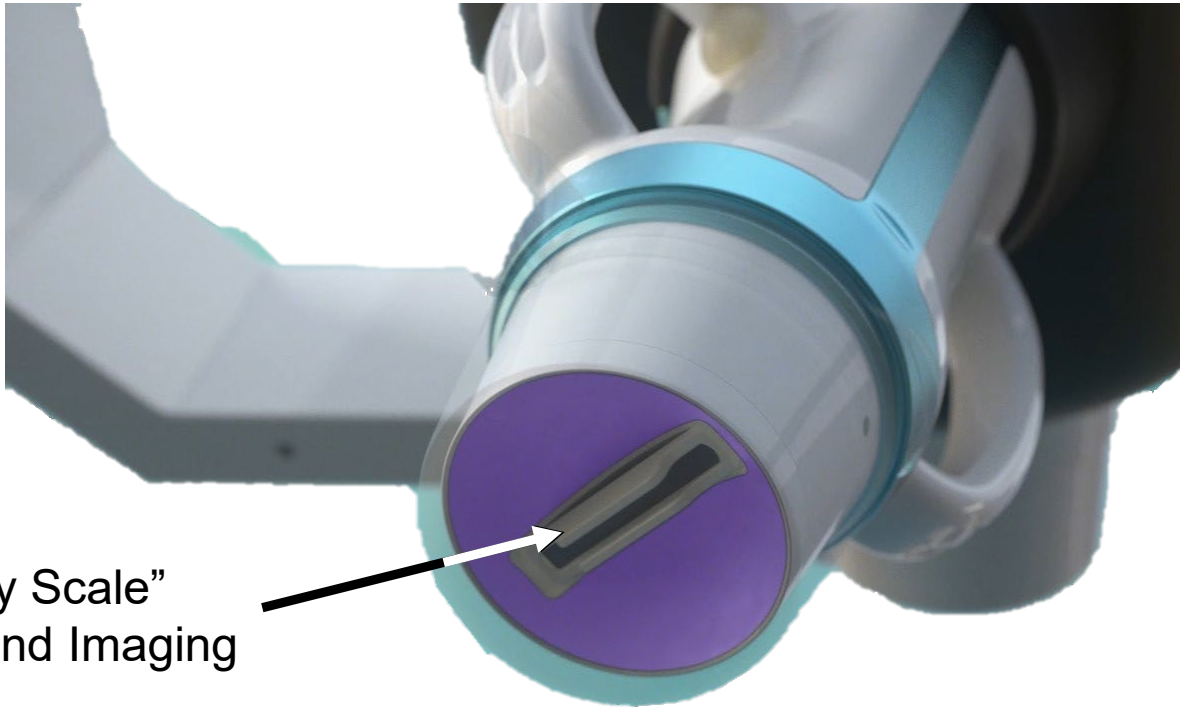


# HIFU – High Intensity Focused Ultrasound Echotherapy

The  
Whiteley  
Clinic



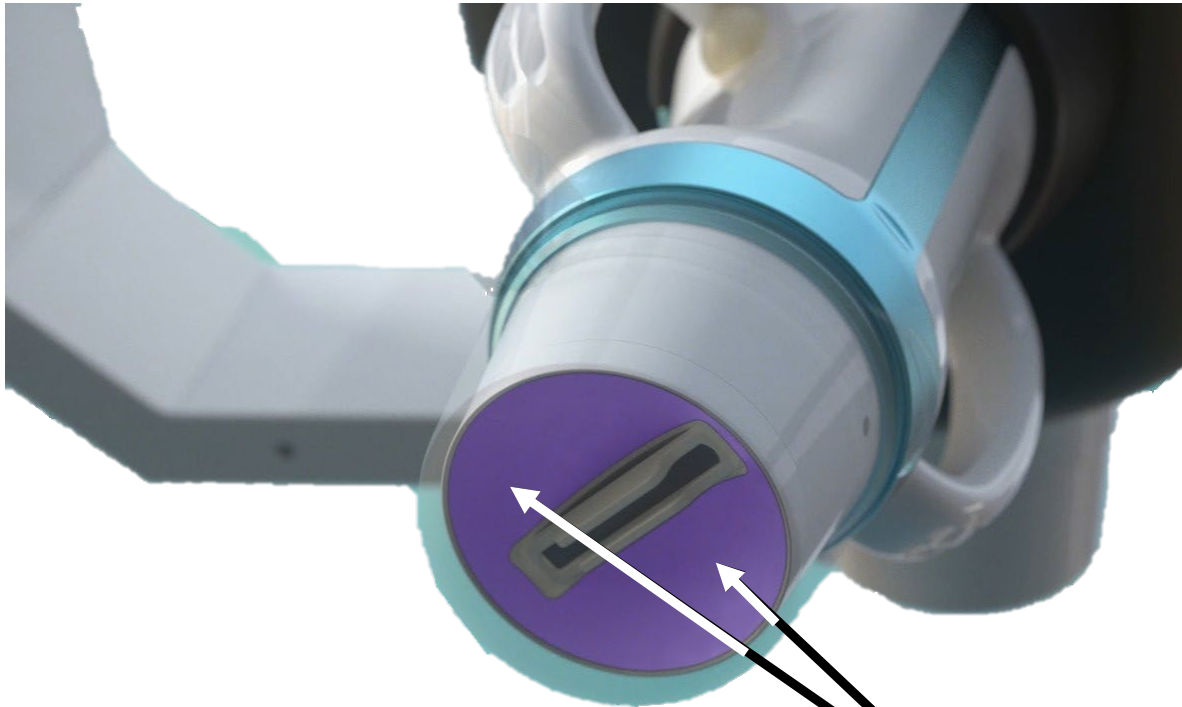
# HIFU – High Intensity Focused Ultrasound – Echotherapy



2D “Grey Scale”  
Ultrasound Imaging

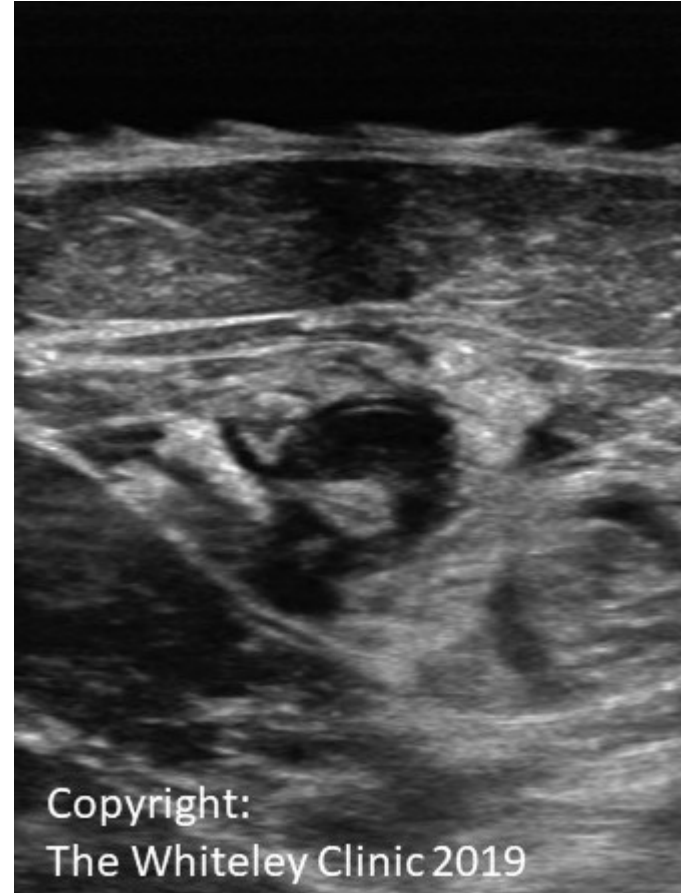
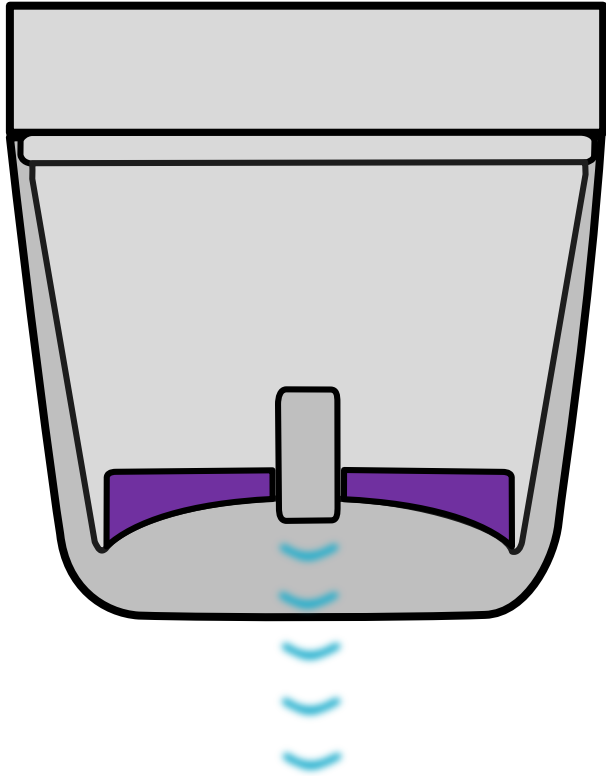


# HIFU – High Intensity Focused Ultrasound – Echotherapy



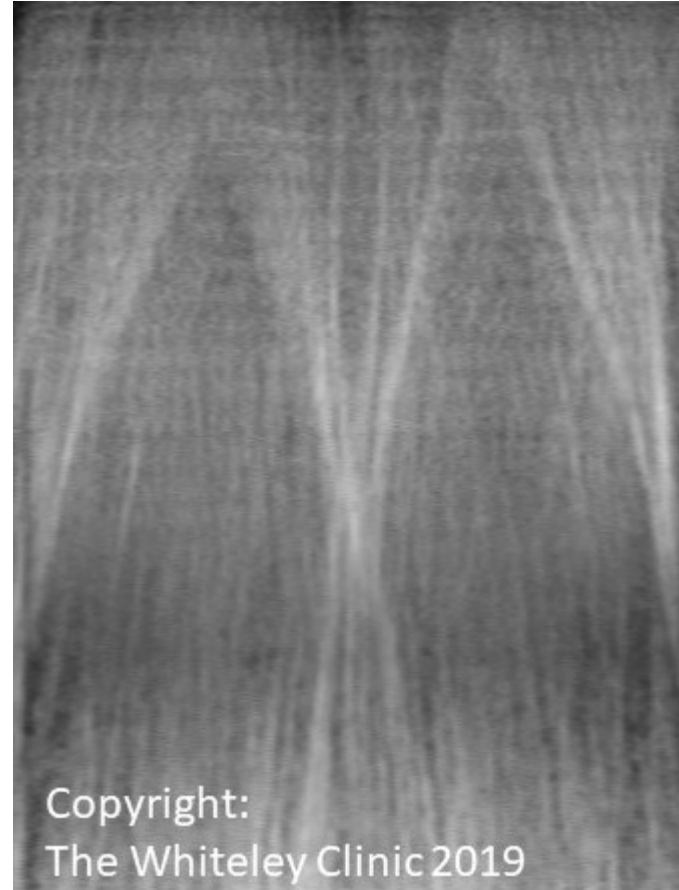
HIFU Ultrasound  
Focused Dome

# HIFU - 1 - Imaging



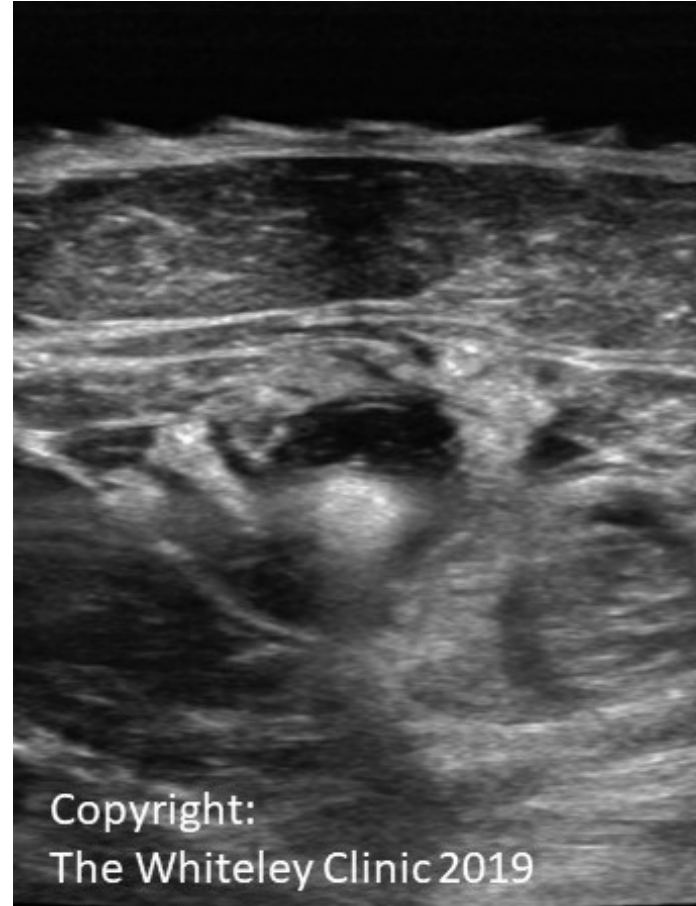
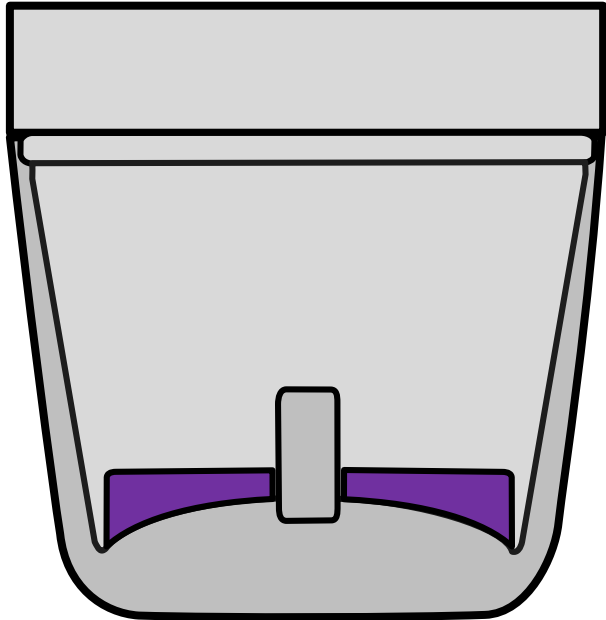
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# HIFU - 2 - Treatment



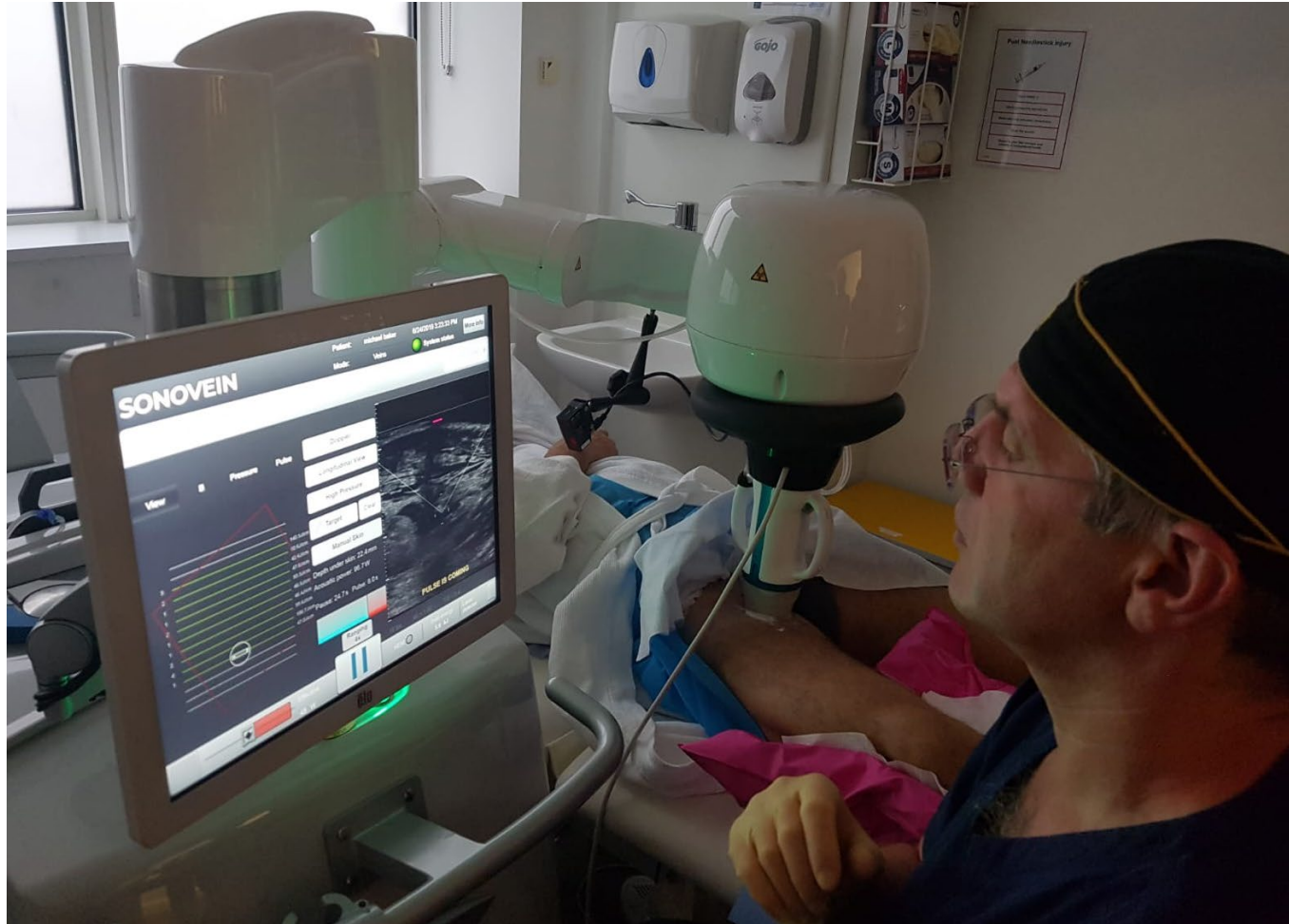
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# HIFU - Post-Treatment Imaging

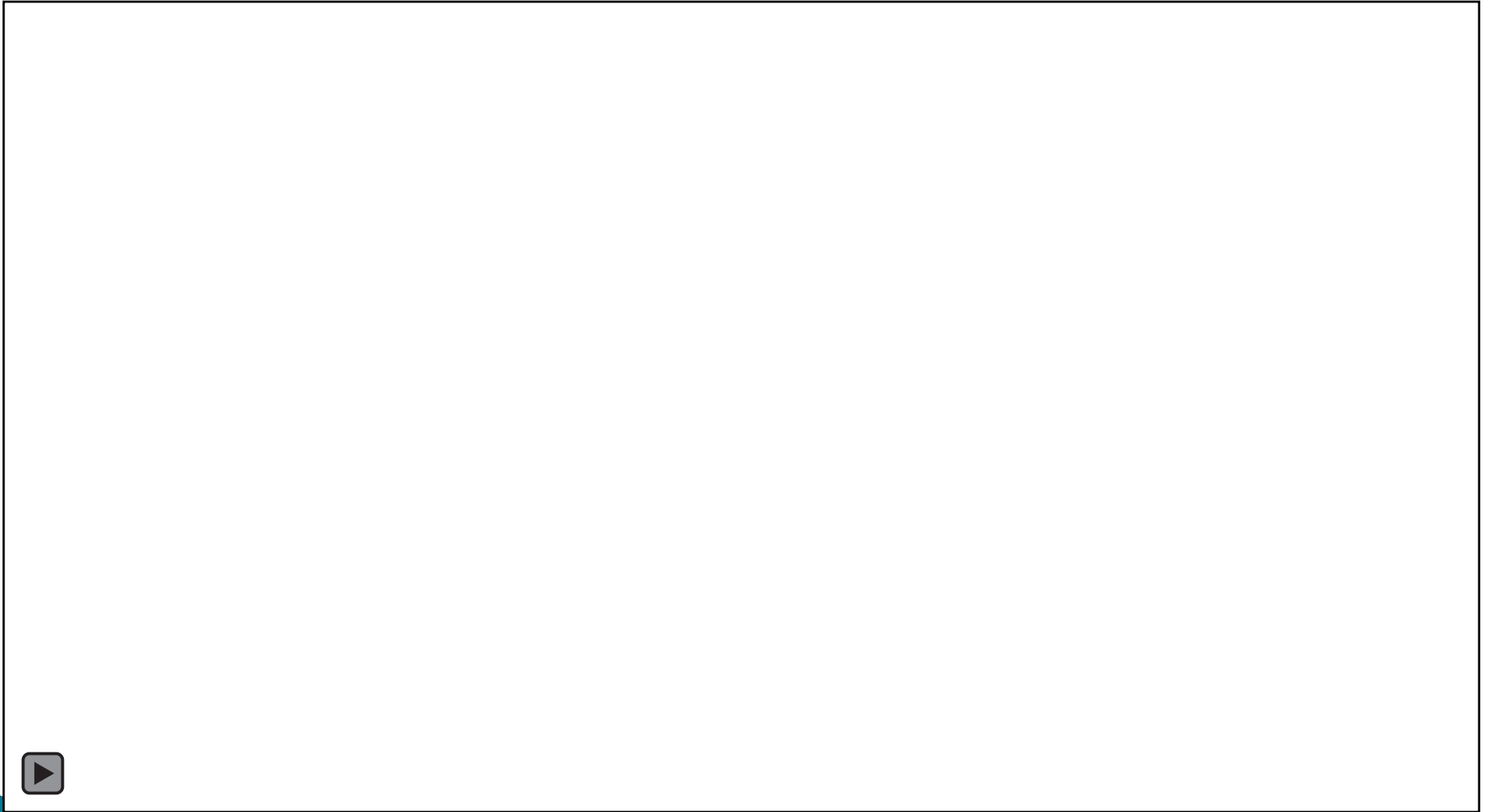


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# Position



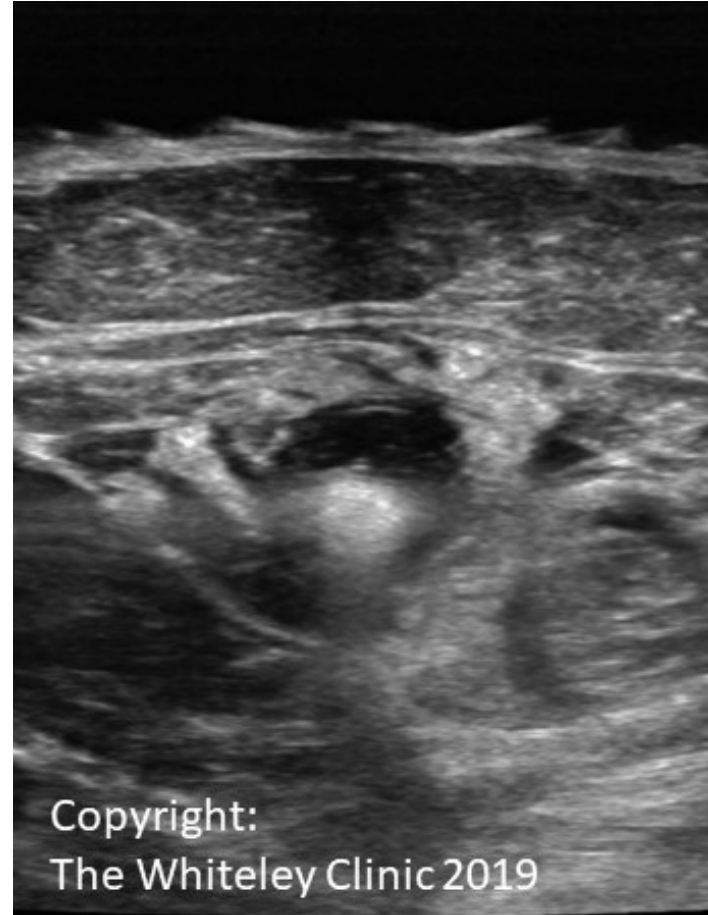
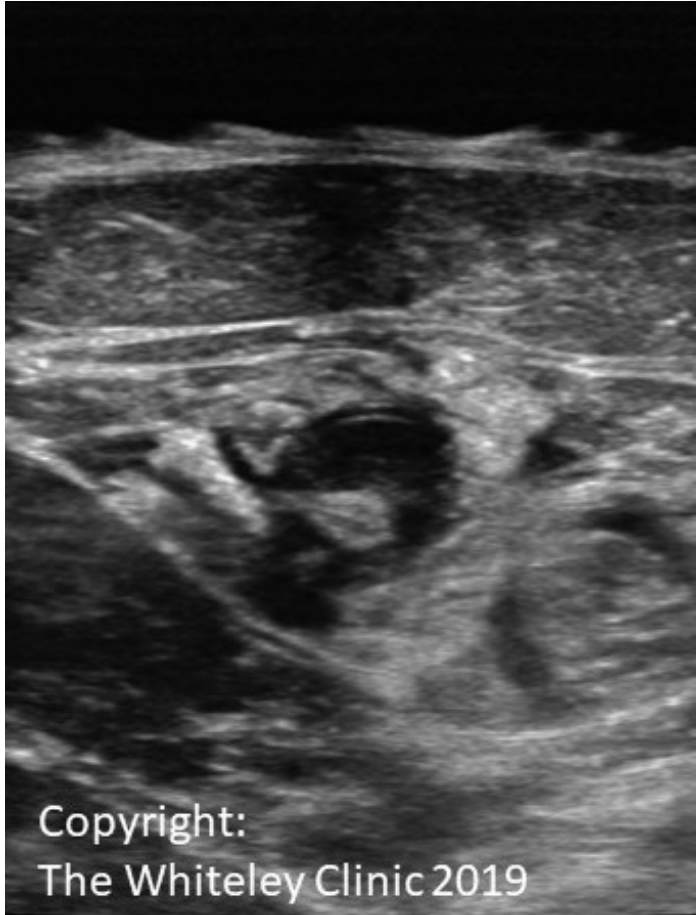
# Video of device



# Technique

- ▶ Clinic room
- ▶ Mark veins to treat
- ▶ Position Echotherapy robotic arm
- ▶ Fix position and positional laser
- ▶ Identify target vein
- ▶ Local anaesthetic around target vein
  - Low volume much less than tumescence 25 G needle
- ▶ Treat vein
  - 3.6 mm section each time
- ▶ Move down vein and repeat

# HIFU – GSV





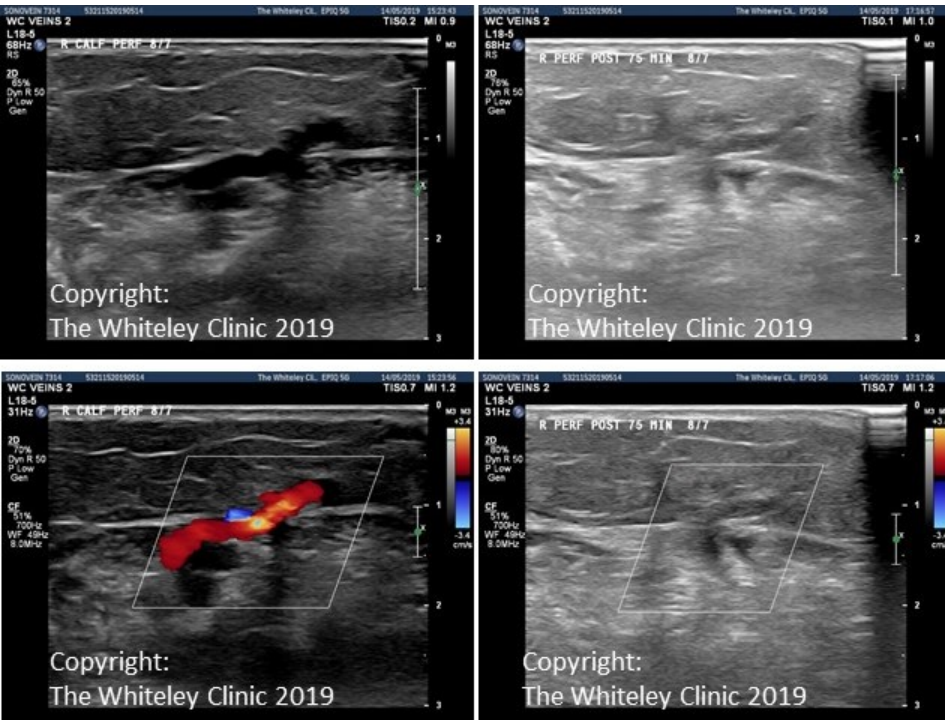
# HIFU – IPV

Pre



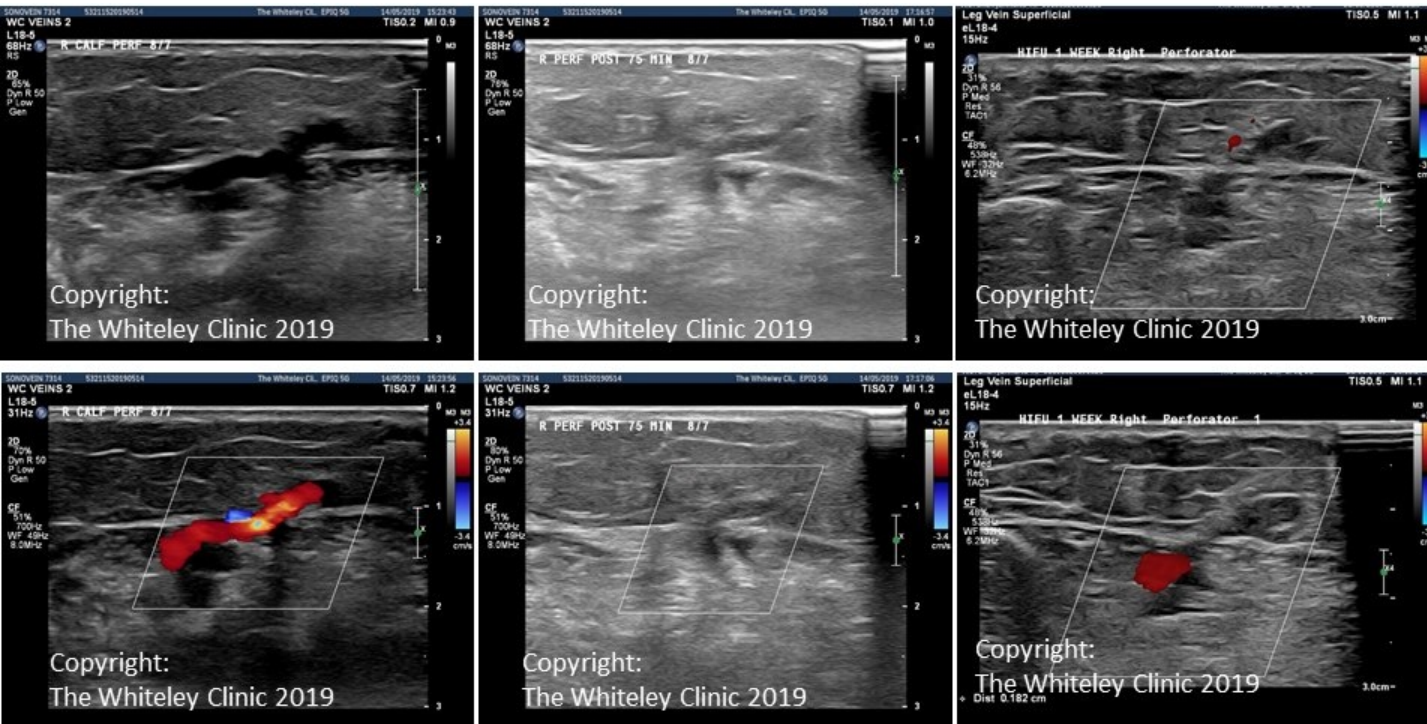
# HIFU – IPV

Immediate post



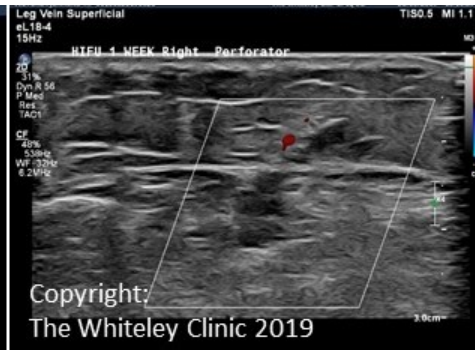
# HIFU – IPV

1 Week



# HIFU – IPV

6 Weeks



# HIFU – Early Experience

- ▶ Started May 2019
- ▶ Learning Curve – 15 procedures
- ▶ Started with Incompetent Perforating Veins
- ▶ Then Truncal Veins



# HIFU – Early Experience

- ▶ 21 legs in 36 patients
  - 28 Female : 8 Males
  - Age: Mean 57 years
- ▶ 1 patient withdrew 2 pulses
  - Panic attack
- ▶ CEAP C2 – C4



# HIFU – Veins Treated

Vein	Number	Diameter (mm)
IPV	90	2.0 – 4.5
GSV	15	4.0 – 9.0
SSV	3	7.0 – 10.0
AASV	4	3.0 – 4.0
Neovasc	1	

# HIFU – Results

- ▶ 6 week scan:
  
- ▶ 15 patients attended (most from “learning curve”).
  - 50 treated veins
  - 41 / 50 (82%) – closed / ablated target vein
  
  - 2 / 50 – minor section re–opened clinically inconsequential
  - 3 / 50 – partial re–opening refluxing into varicose vein
  - 4 / 50 – failure of closure
  
  - Clinical success = 86%



# HIFU – Results

- ▶ 6 month scan:
  
- ▶ 5 patients attended – from “learning curve”
  - 19 treated veins
  - 13/19 (68%) – closed / ablated target vein
  
  - 2/19 – minor section re-opened clinically inconsequential
  - 1/19 – partial re-opening refluxing into varicose vein
  - 2/19 – failure of closure
  
  - Clinical success = 79%

# Summary

- ▶ Early results:
  - Good closure rates for “learning curve”
    - Working on protocol to increase ablation rates
  - High patient satisfaction
    - Back to work same day
  - Takes time
    - But easy to speed up treatments
  - Future
    - Working on strategy to treat different patterns

# Conclusion

- ▶ HIFU Echotherapy appears to be safe and effective in treating varicose veins
- ▶ A non-invasive ablation – has the potential to be a disruptive technology
- ▶ Monitoring through CoP Venous Registry
- ▶ Live cases  
16–17 April 2020  
London

