

# **LAFOS**

# **laser assisted foam sclerotherapy**

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# **CAN WE FIND ANOTHER WAY TO MANAGE VV?**

**Laser assisted foam  
sclerotherapy (L.A.FO.S): a new  
approach to the treatment of  
incompetent saphenous veins**

# L.A.FO.S

- **VEIN DIAMETER REDUCTION BEFORE FOAM SCLEROTHERAPY USING A NEW HOLMIUM LASER**
- **OFFICE PROCEDURE**
- **PAINLESS PROCEDURE**
- **NO RISK OF PERIVENOUS DAMAGE**

# L.A.FO.S

- **VEIN ACCESS WITH A SIMPLE CANNULA (17G) OR WITH AN INTRODUCER**
- **INSERTION OF THW LASER FIBER**
- **FIBER RETRIVAL WHILE VEIN DIAMETER IS REDUCED**
- **IMMEDIATE FOAM INJECTION IN THE SAME CANNULA**



# L.A.FO.S

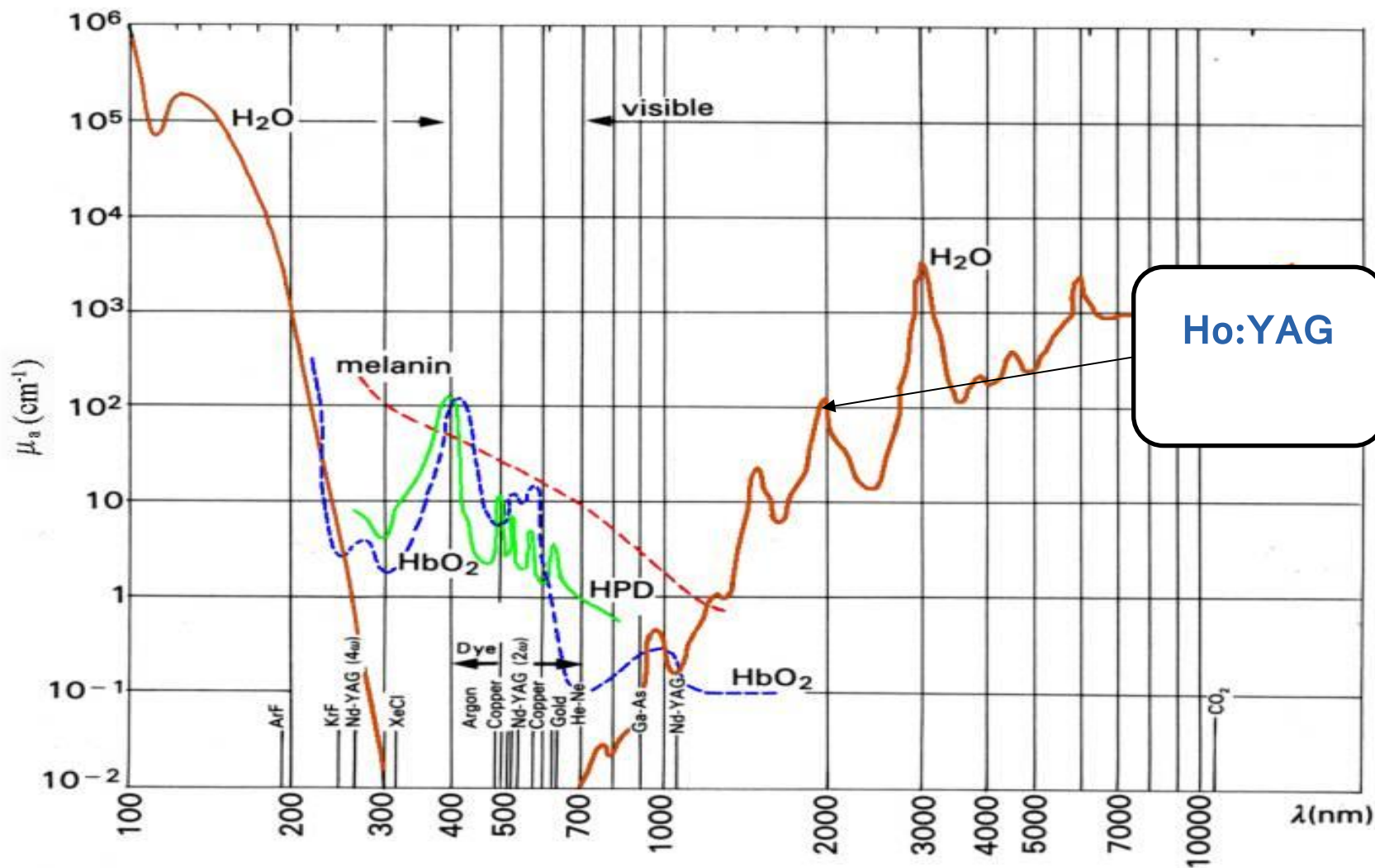
- **FOAM SCLEROTHERAPY IS ALSO ENHANCED BY MEDIA SHRINKAGE DUE TO HEAT ACCUMULATION IN THE TUNICA MEDIA**

# SCLEROLUX

- ✓ Ho:YAG (2,100 nm) laser (table top), ca. 20 kg
- ✓ Optical fiber size : 550 mm – ext. 880 mm
- ✓ 17G or 18G thin-walled needle
- ✓ Short Pulse : 350  $\mu$ s, Max Power : 5 W
- ✓ Long Pulse : 2.5 ms, Max Power : 2.5 W



# Absorption Coeff. & $\lambda$

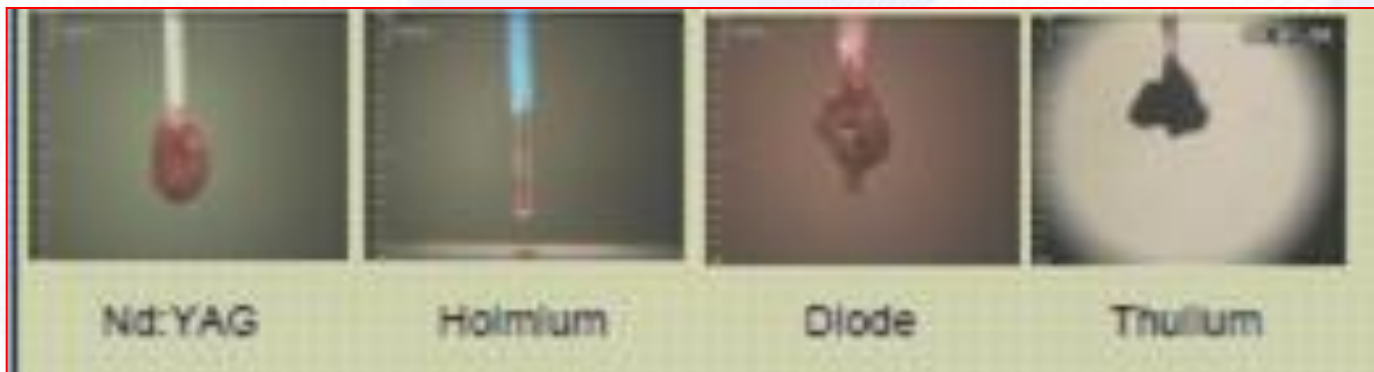


# Ho:YAG, Not Clots

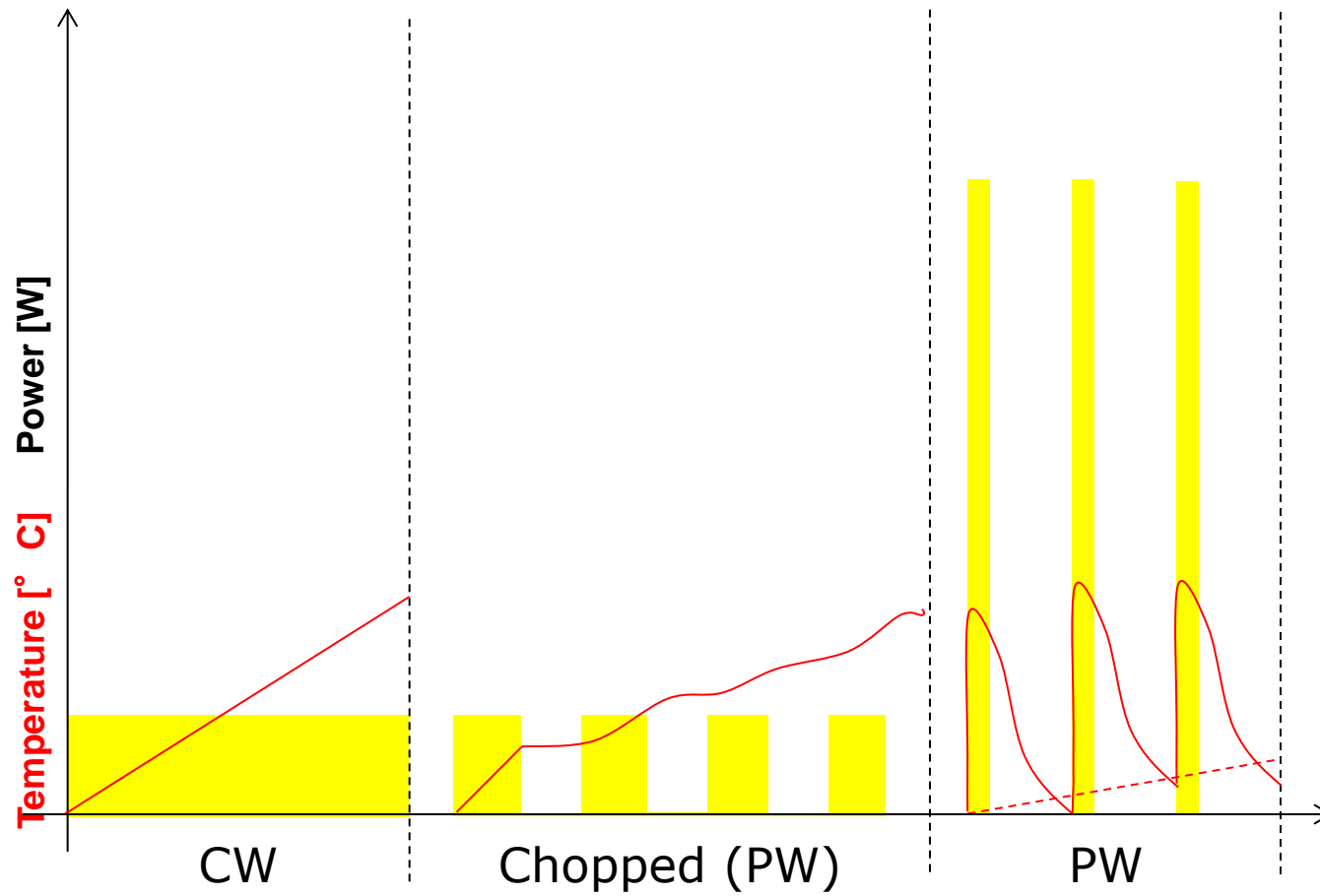
**Mechanism of EndoVenous Laser Treatment revealed using temperature and imaging strategies comparing Diode, Nd:YAG, Thulium and Holmium laser systems.**

Alex I Rem, Sander van Thoor, Rudolf M Verdaasdonk, Ben CVM Disselhoff and Daan J der Kinderen.

*Department of Clinical Physics, University Medical Center Utrecht,  
Departments of Surgery and Dermatology, Mesos Medical Center Utrecht,  
The Netherlands*

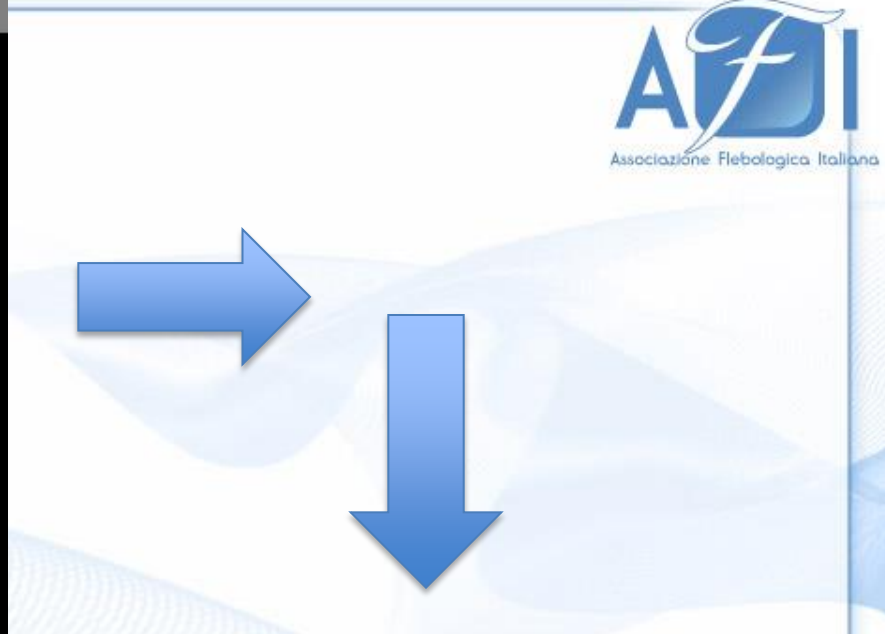
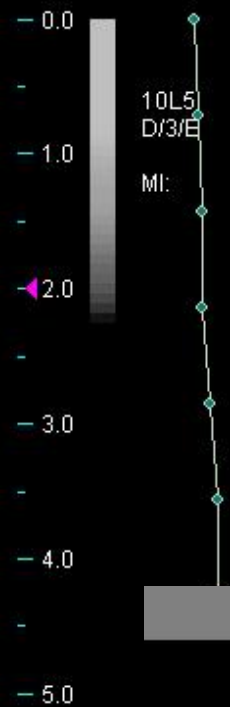
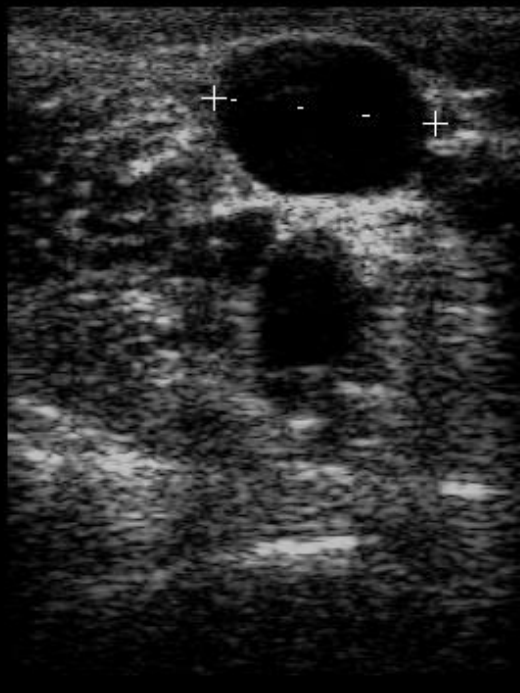




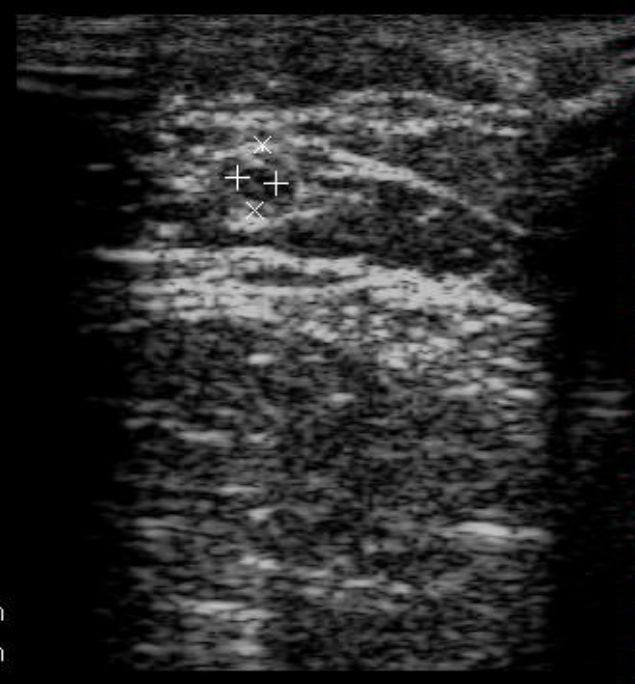


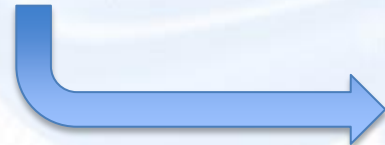
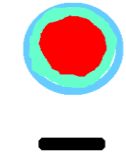
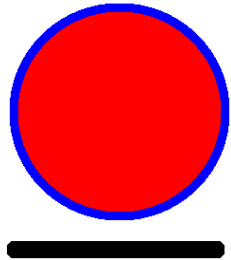
# VEIN DIAMETER REDUCTION

**Thermal shrinkage of type III  
collagen fibers of the tunica media  
causes reduction of vein diameter**

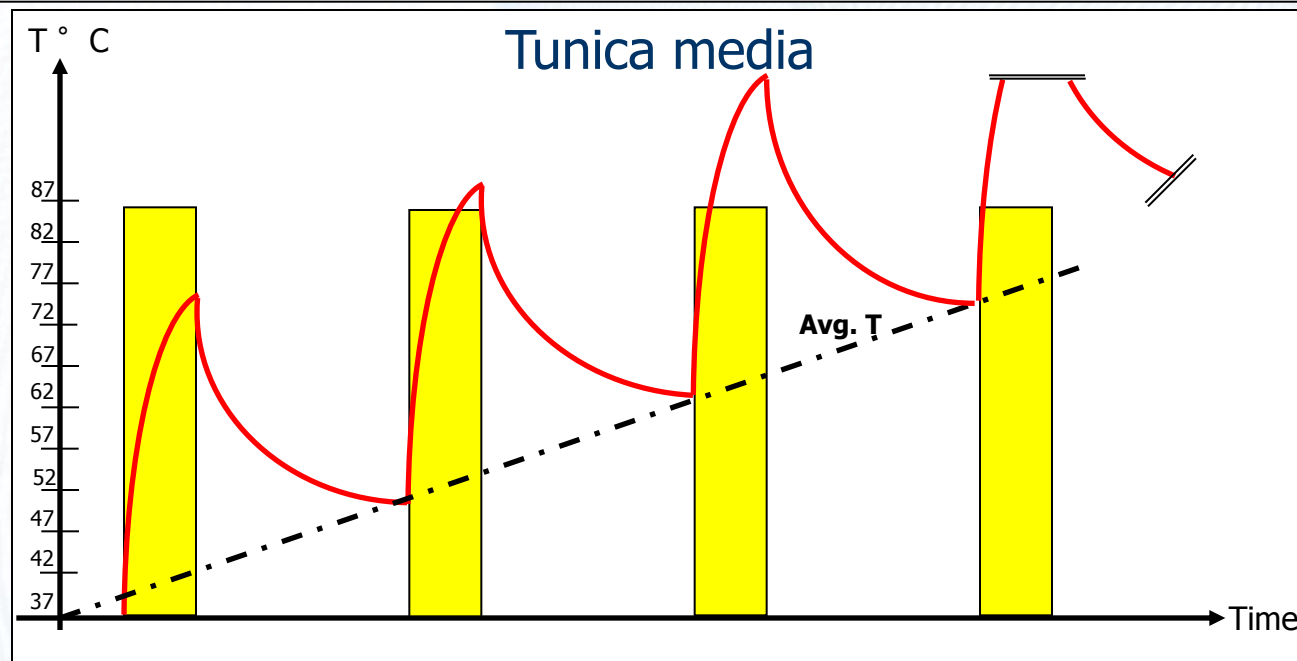
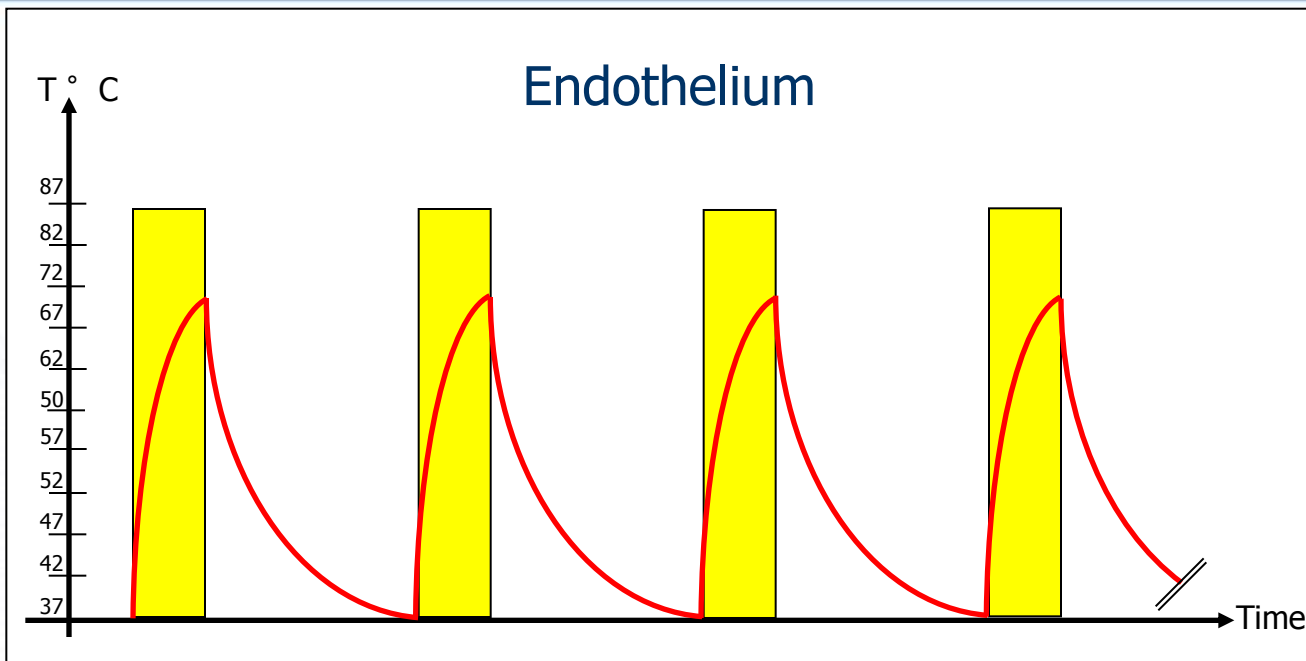


× 0.40 cm  
+ 0.24 cm

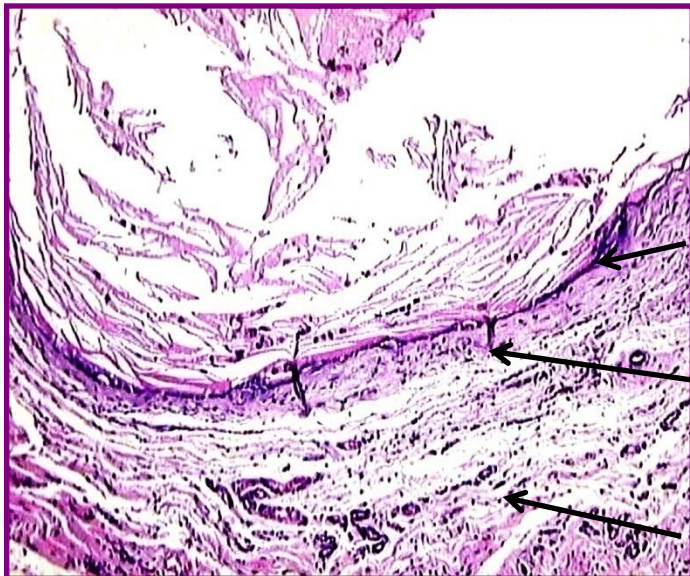








H.&E. Stain



Tunica intima

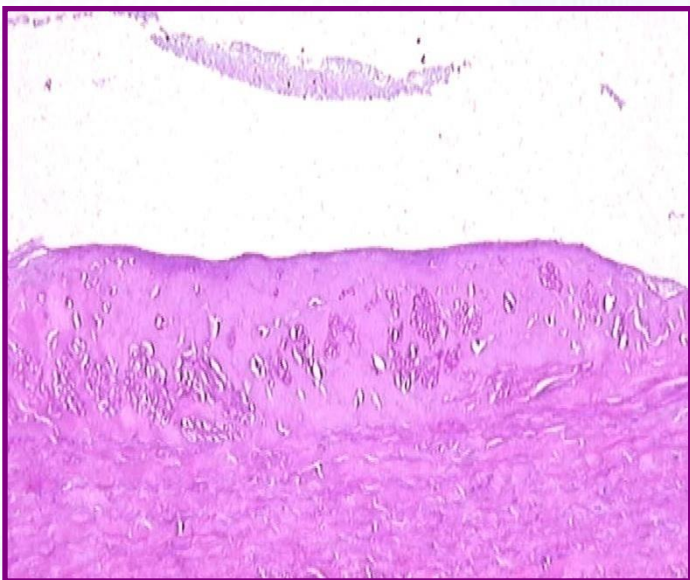
Tunica media

Tunica adventitia

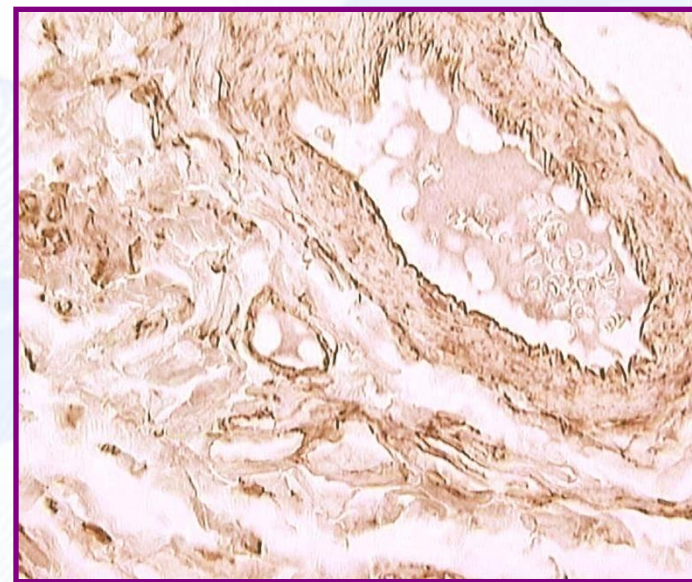
Untreated, healthy

# HISTOLOGY

Short Pulse (350  $\mu$ s)



Treated, H&E



Treated, IHC Fact. VIII

**DUE TO REDUCED VEIN  
DIAMETER LESS FOAM  
VOLUME IS NEEDED**

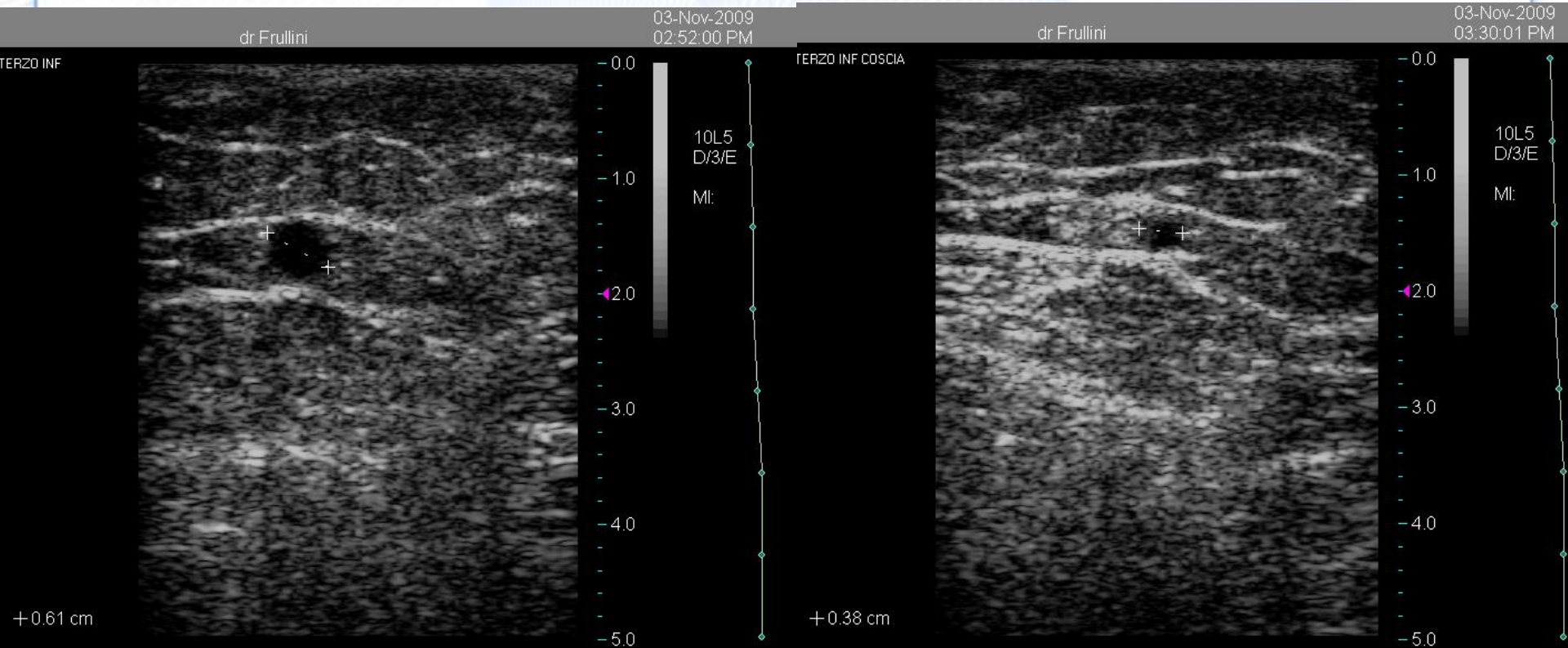


**L.A.FO.S IS POSSIBLE AS HOLMIUM  
LASER DOESN'T AFFECT TUNICA  
INTIMA AND INTIMA INTEGRITY IS  
A PREREQUISITE FOR GOOD  
SCLEROSIS**



Pre-holmium

Post-holmium





ATTENTION  
NE PAS TOUCHER  
L'APPAREIL  
LORSQU'IL EST ALLUMÉ  
RISQUE DE BLESSURE  
PAR LASER

Control panel area featuring a screen and several buttons:

- Top right: **TR** button
- Middle right: **ON** button
- Bottom right: **EMISSON** button

APERTURE LASER



pericATHI  
100  
THI  
Laser Lock  
0.17 x 40mm  
0.8 mm / 120mm  
2007-06  
2012-08  
100-0000011  
Dr. 100 Pcs

IQme



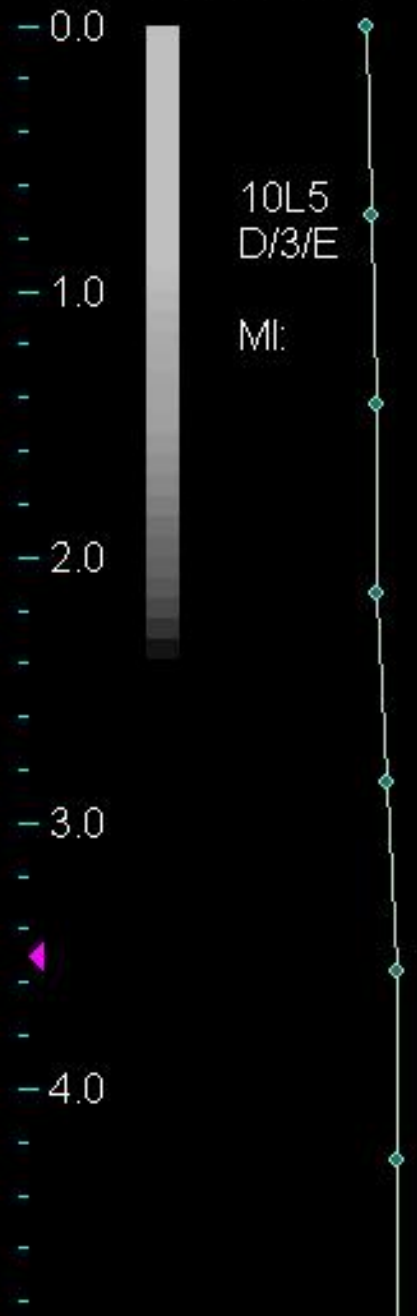
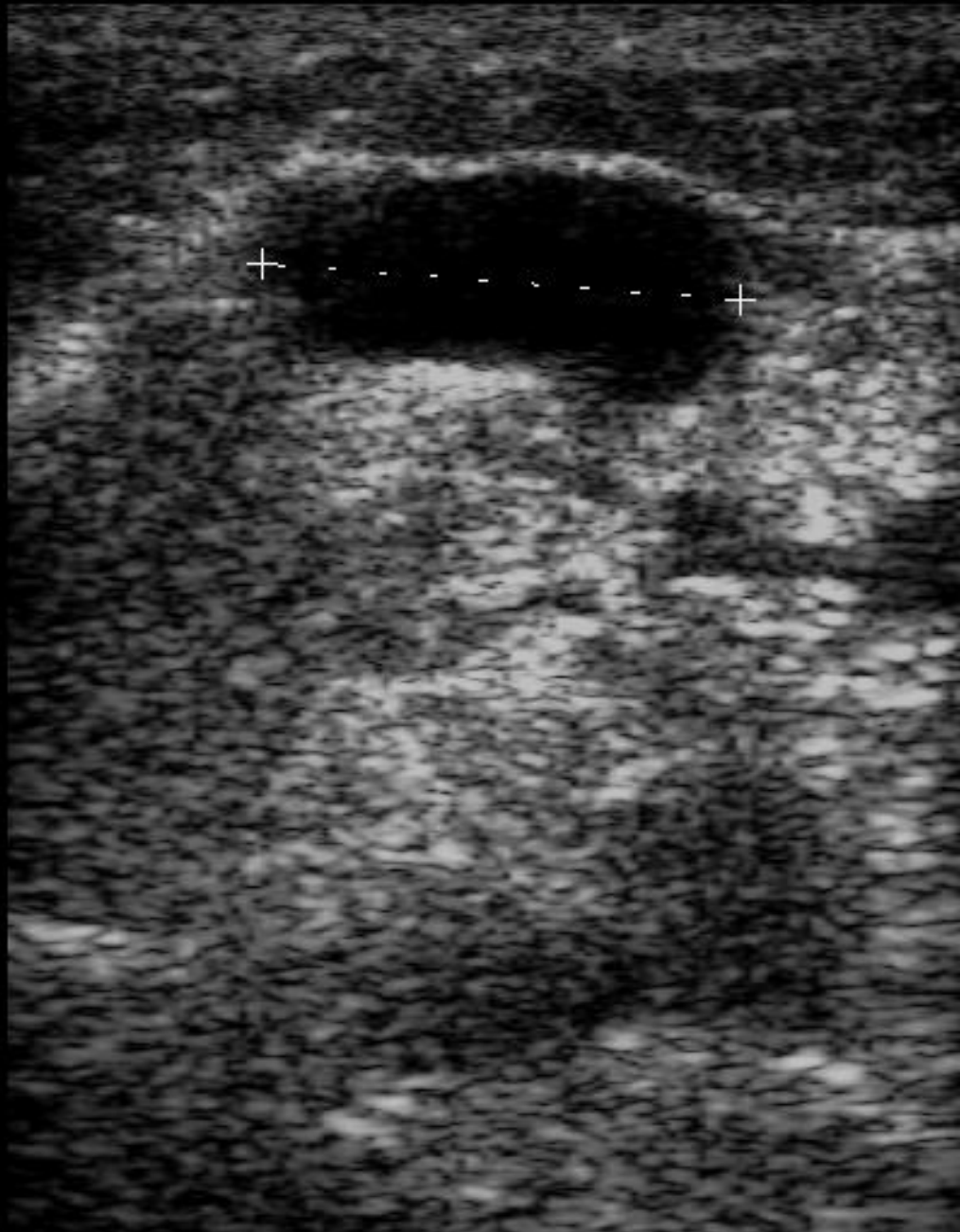


Bio9

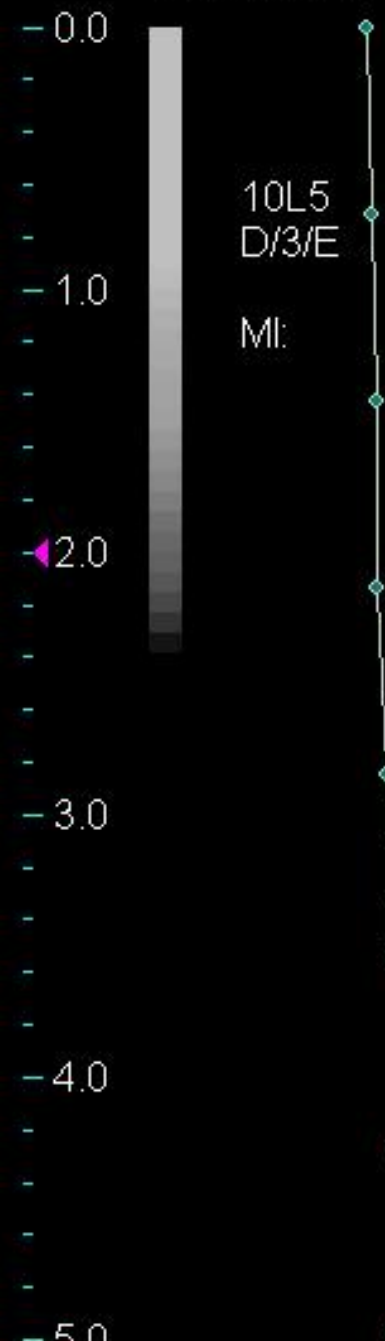
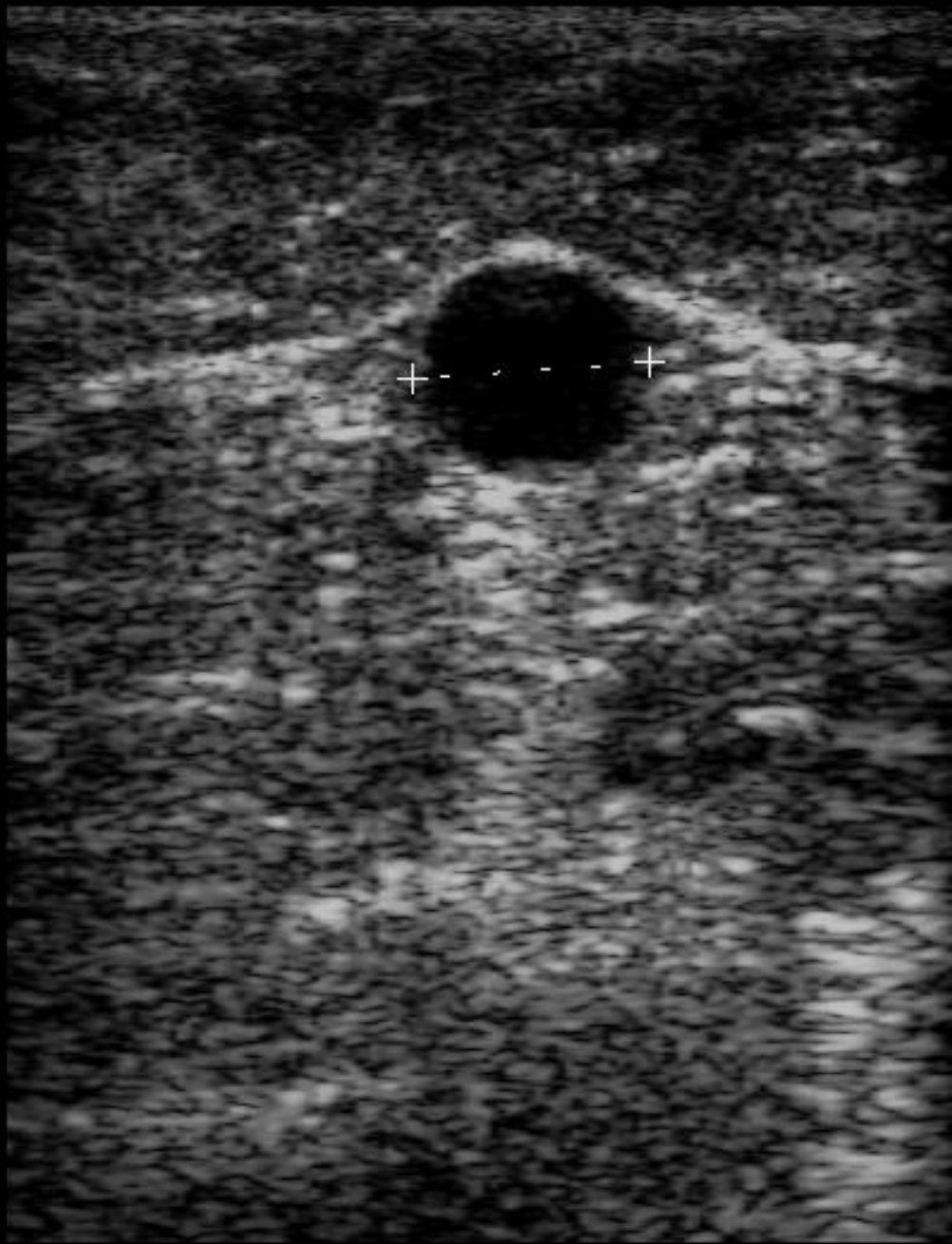




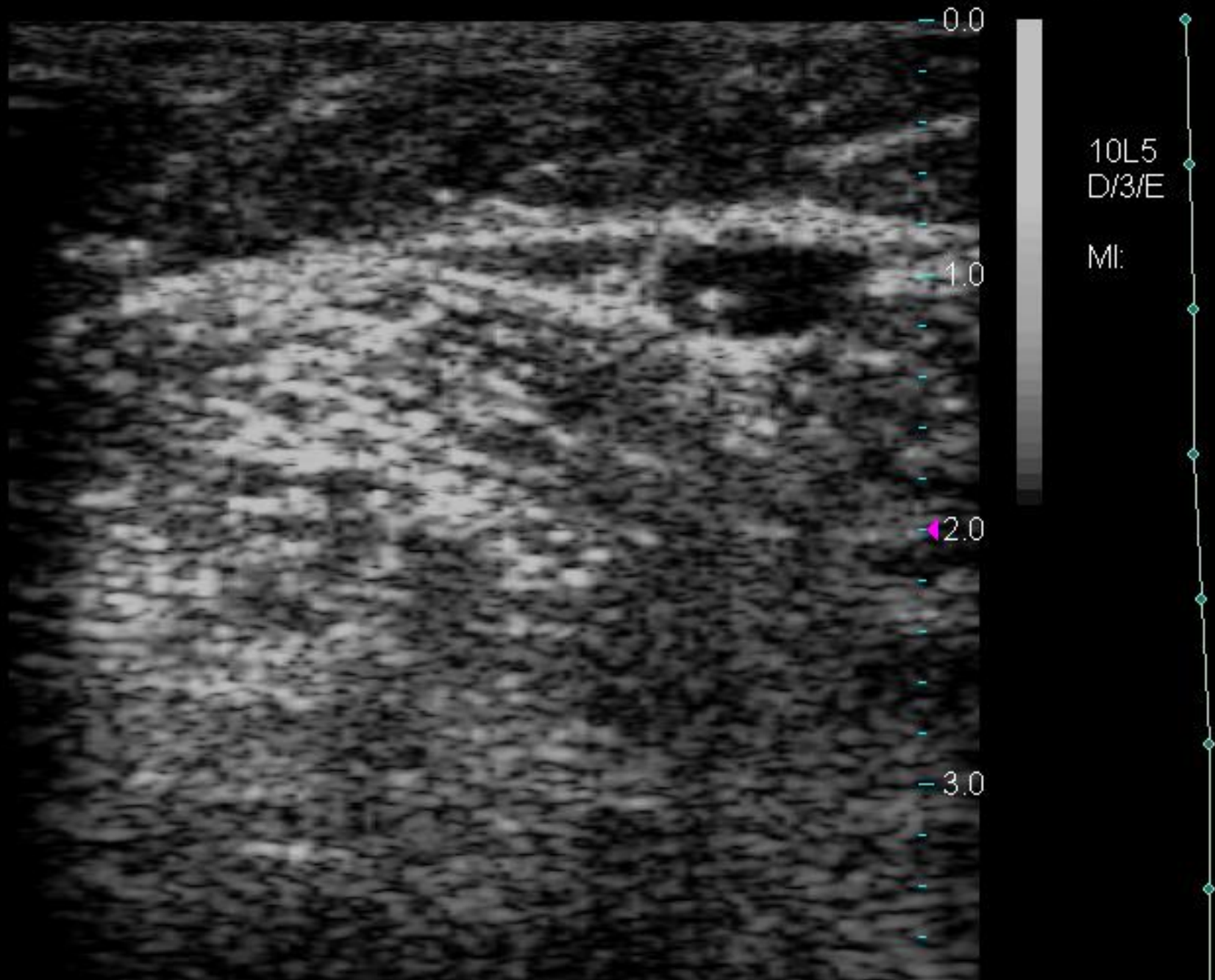




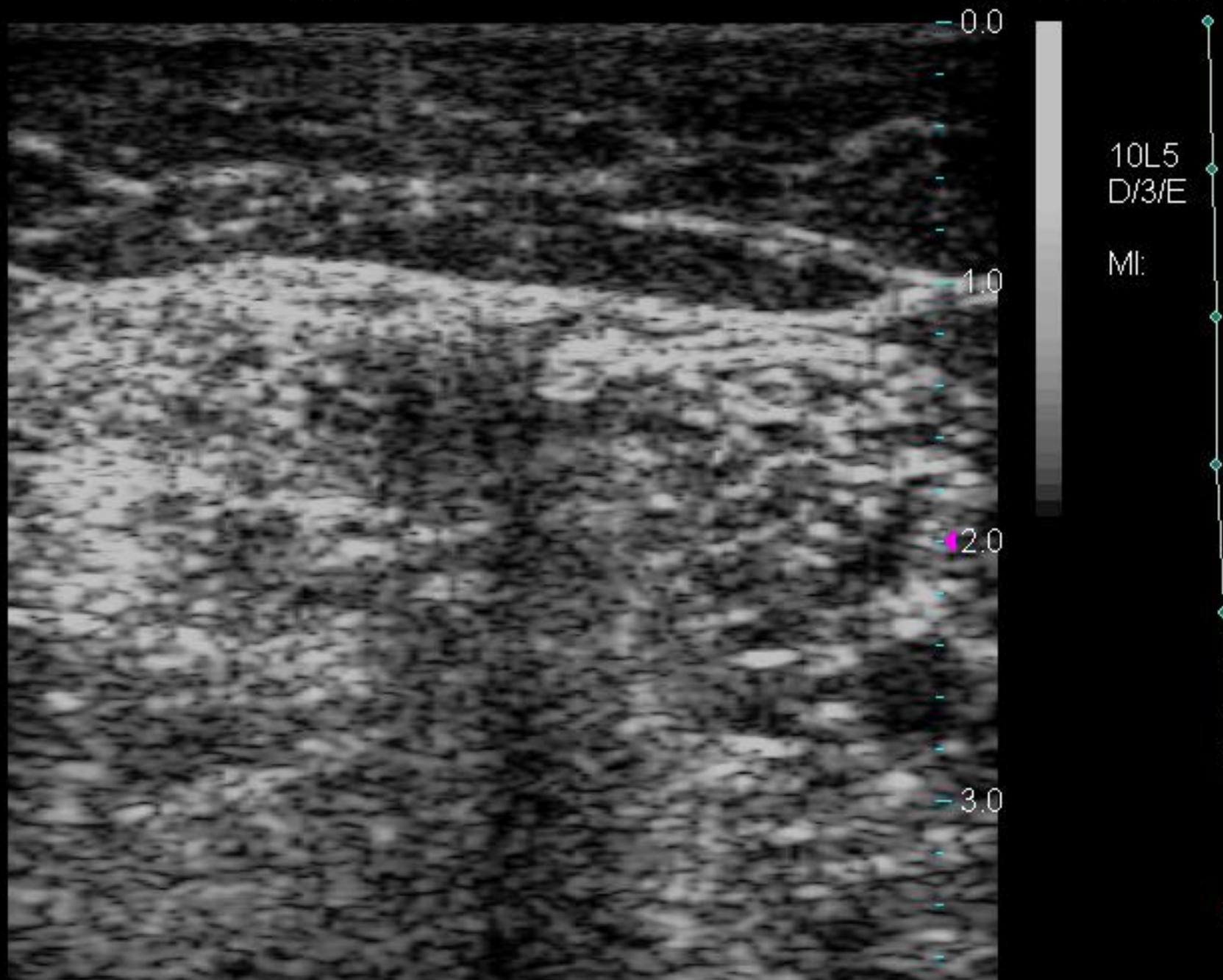
+ 1.91 cm



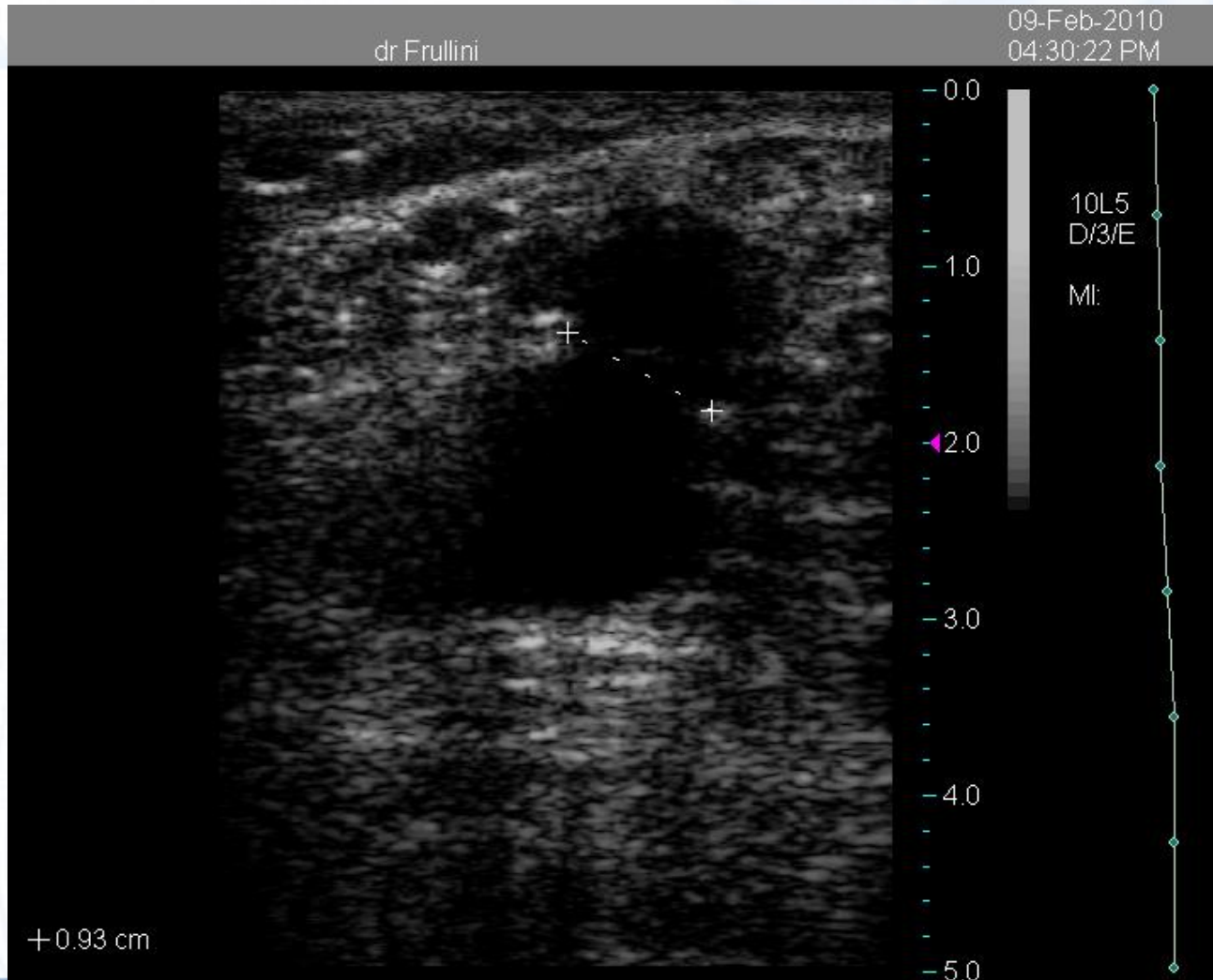
+0.95 cm







# Pre-treatment

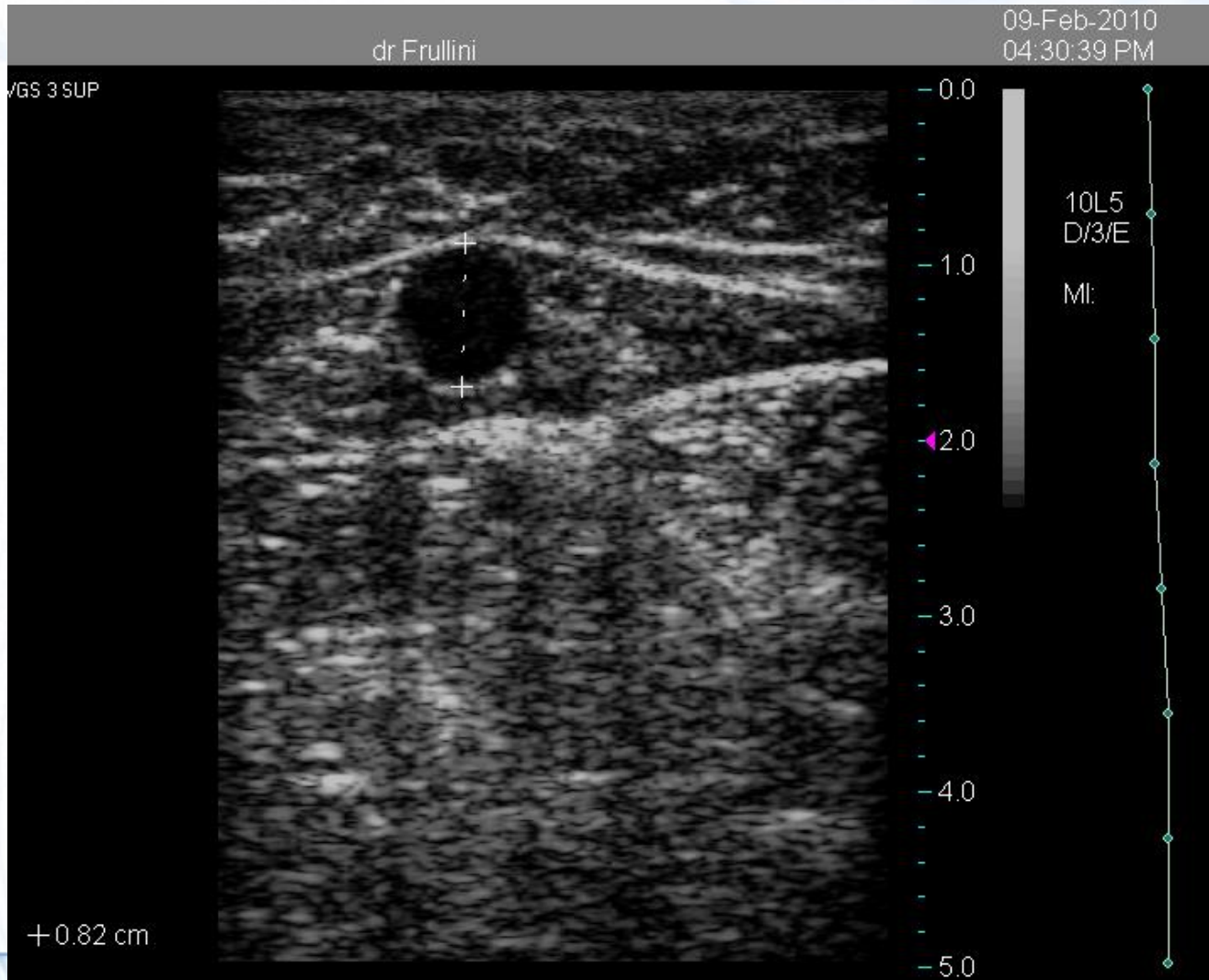


# Post-treatment

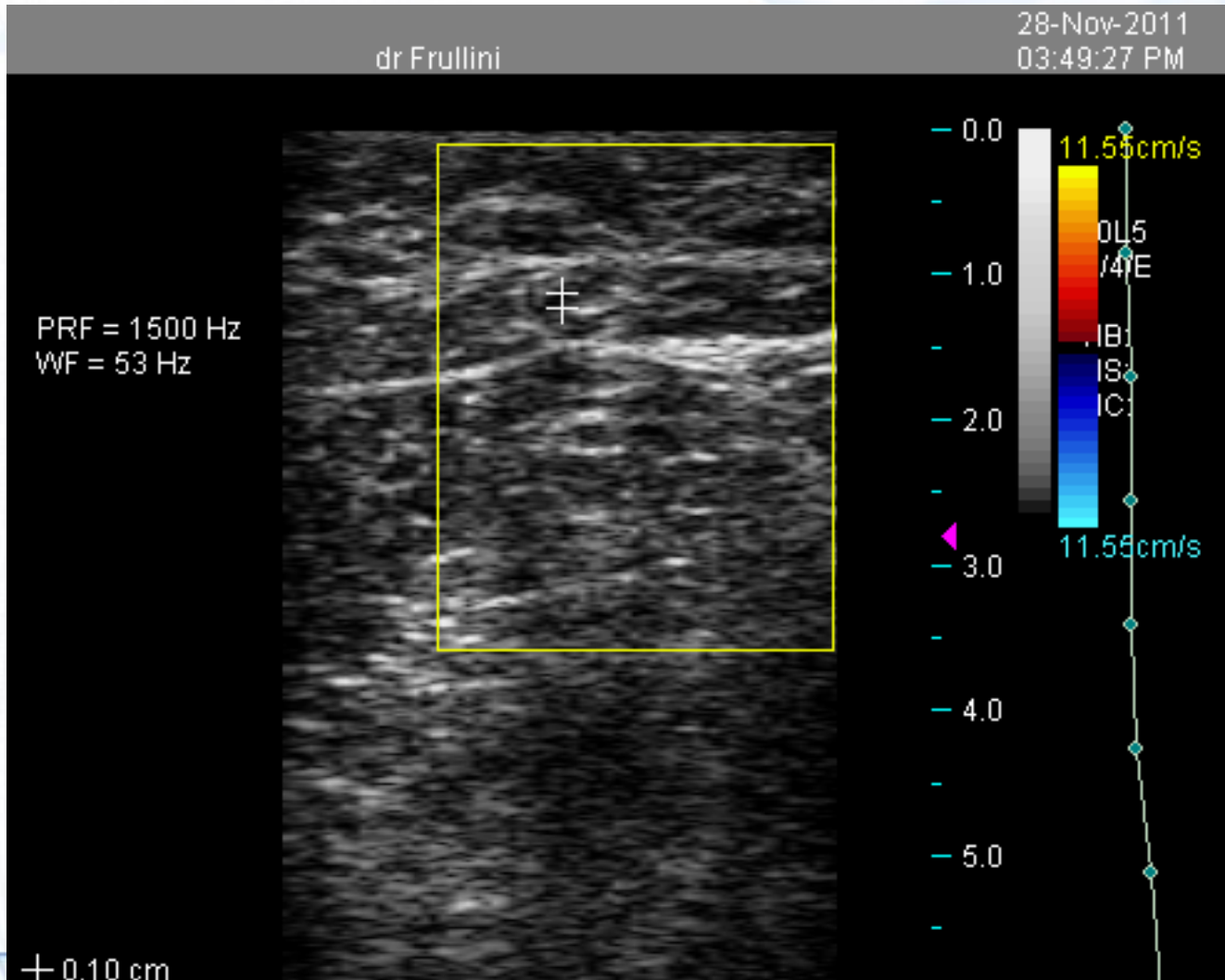




# Pre-treatment



# Post-treatment



# L.A.FO.S: first 50 cases (june 2012)

- 38 VGS and 12 VPS
- Mean diameter GSV 9,17
- Mean diameter SSV 7,91
- Energy 150-400 mJ - 7Hz
- Immediate POL injection after shrinkage (on average 5 ml POL 3% or 2 ml POL 2%)



**All veins were occluded  
at the first follow-up  
visit**

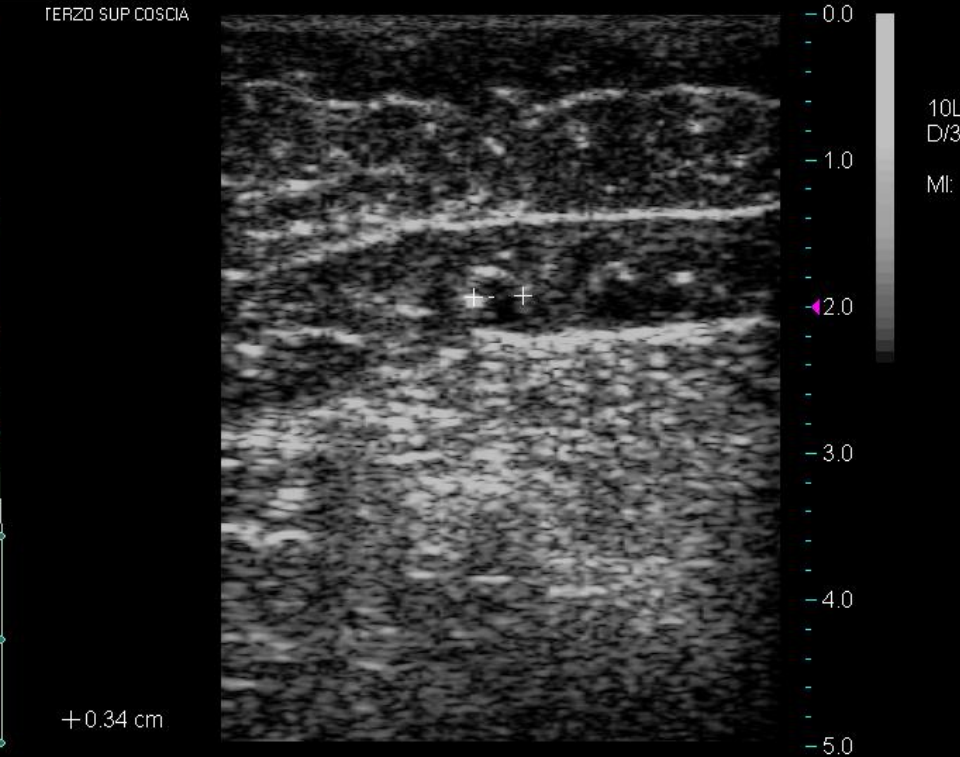
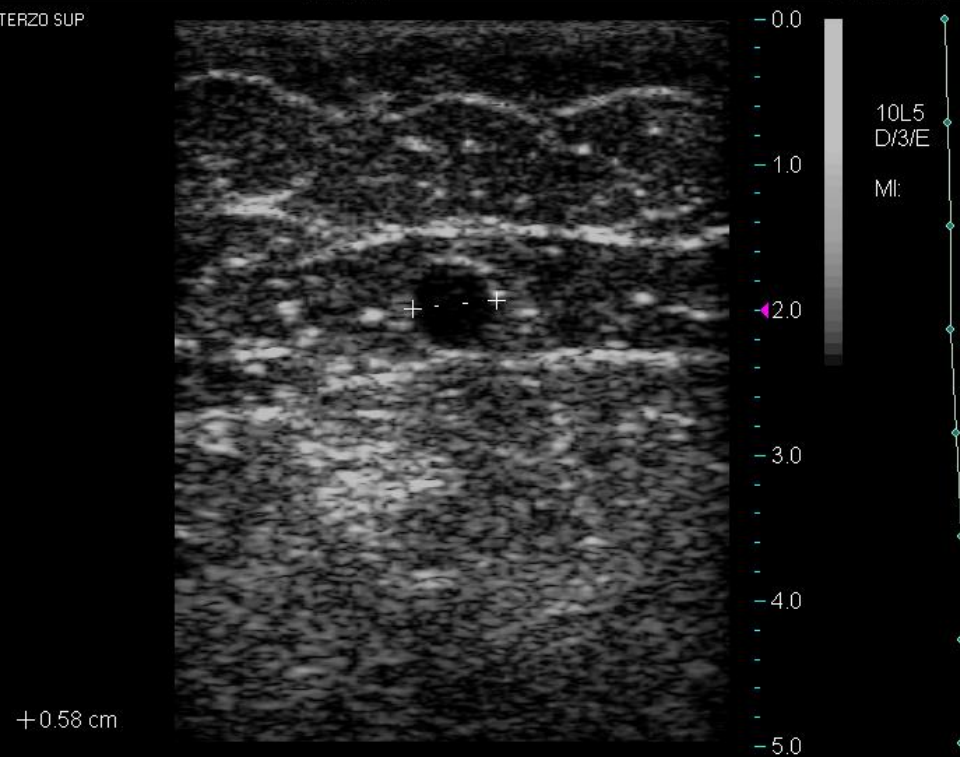
# PROBLEMS

- 3 VEINS WERE CANNULATION WITH 17G WAS IMPOSSIBLE (GSV)
- THIS DIDN'T OCCURR ANYMORE IN THE LAST 18 CASES
- DISTANCE OF THE VEIN FROM THE SKIN IS DISCRIMINATING (1,4 cm)
- 3 CASES OF DIFFICULT PROGRESSION OF THE FIBER (VGS)

Pre-holmium

Post-holmium

dr Frullini 03-Nov-2009 02:50:35 PM dr Frullini 03-Nov-2009 03:28:18





**IN MY EXPERIENCE VEINS  
RESISTENT TO FOAM  
SCLEROTHERAPY ARE  
SUCCESSFULLY TREATED  
WITH LAFOS**



HITACHI

Hi-Vision Avius - Dr GILLET Jean-Luc

Echosclerose

20-SEP-12 01:05:25

MOENNE LOCCOZ TH

20120920001

P:100%

MI 0.8

TIS<0.4

Ⓜ

Courtesy of dr JL Gillet

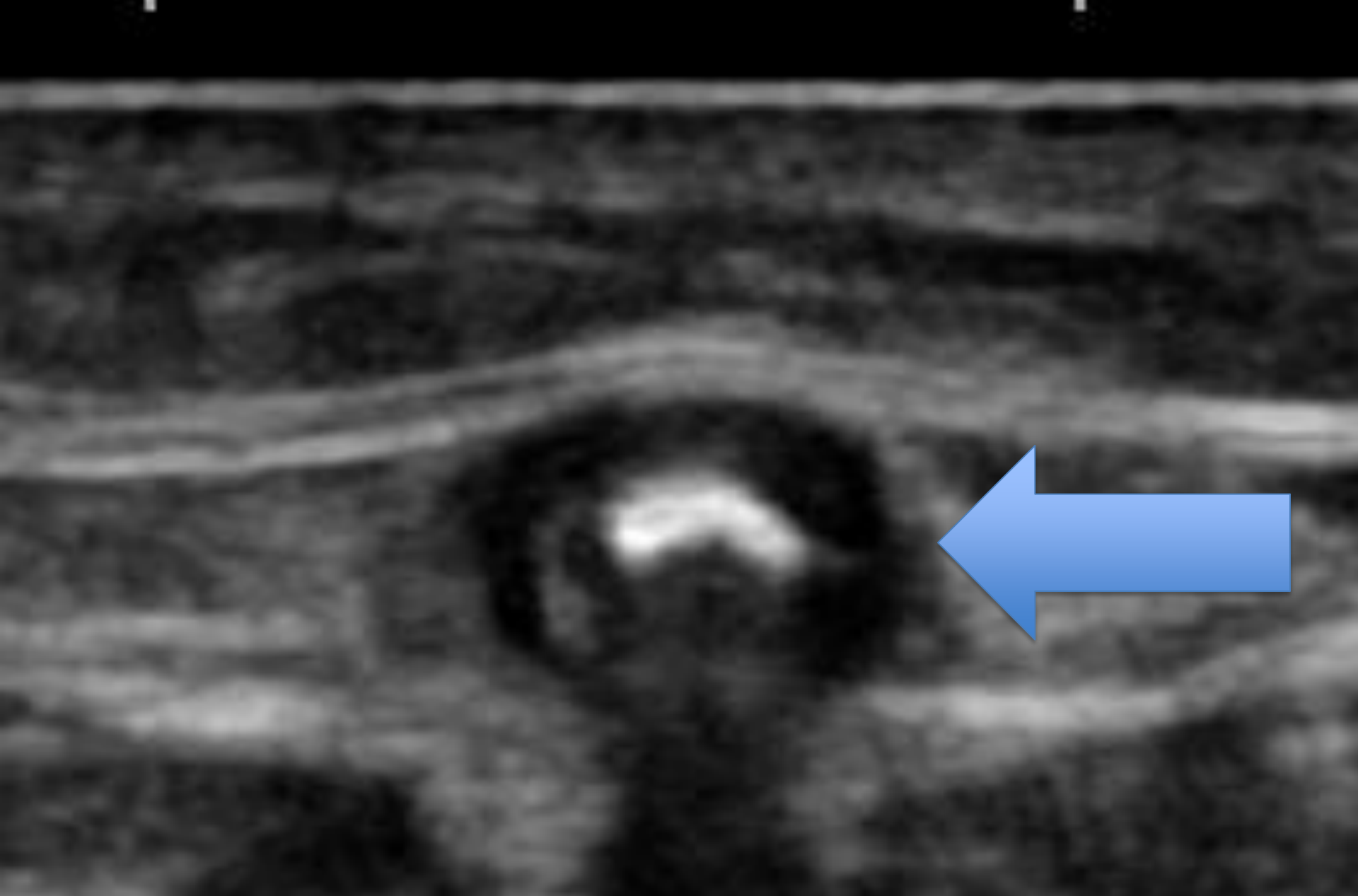
IN  
L

IM:21

L65

GB:11 ED:75

HdTHI-R



Courtesy of dr JL Gillet



# WHY I USE LAFOS

- **LESS EXPENSIVE IN COMPARISON TO SURGERY OR THERMAL ABLATION**
  - OFFICE SETTING
  - NO ANESTHESIA
  - FASTER PROCEDURE
- **MAKE SCLEROTHERAPY MORE TECHNOLOGICAL**
- **VEIN SHRINKAGE RESULTS IN LESSER FOAM VOLUME**

# WHY I USE LAFOS

- **MEDIA PRE-TREATMENT COULD POSSIBLY RESULT IN BETTER LATE OUTCOME**
- **VEIN SHRINKAGE PERMITS LARGER VEIN TREATMENT (> 2 cm)**

# WHY I USE LAFOS

- **NO POST-TREATMENT PAIN**
- **IMMEDIATE RETURN TO FAMILY ACTIVITIES**
- **FAST RETURN TO WORK**



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# Sclerotherapy

**Lingue ufficiali**  
(Italiano - English - Español)  
Official languages - Idiomas oficiales



**Traduzione simultanea**  
Simultaneous translation  
Traducción simultánea

