

CONTROVERSES ET ACTUALITÉS EN CHIRURGIE VASCULAIRE  
CONTROVERSIES & UPDATES IN VASCULAR SURGERY

**JANUARY 19-21 2017**

MARRIOTT RIVE GAUCHE & CONFERENCE CENTER

PARIS, FRANCE



# ENDOLASER FOAM ABLATION

*(ELAF)*

*Dr. C. Boné*



## Disclosure

Speaker name:

Carlos Boné.

- I have the following potential conflicts of interest to report:
  - Consulting
  - Employment in industry
  - Shareholder in a healthcare company
  - Owner of a healthcare company
  - Other(s)
- I do not have any potential conflict of interest



# MINIMALLY INVASIVE TECHNIQUES

- *ENDOVENOUS LASER ABLATION*
- *RADIOFREQUENCY ABLATION*
- *ULTRASOUND-GUIDED FOAM SCLEROTHERAPY*



# LIMITATIONS

- *NAVIGATION*
- *ANESTHESIA*
- *DIAMETER/SIZE*
- *INFLAMMATORY REACTION*
- *PIGMENTATIONS*
- *RECANALIZATION*



# ENDOLASER FOAM ABLATION

- *USE THE PROPERTIES OF THE FOAM AGENTS*
- *SYNERGIC ACTION OF ENDOVENOUS LÁSER*
- *WITHOUT ANESTHESIA*



# INDICATIONS

- *TRONCULAR VEINS*
- *WITHOUT SIZE LIMITATIONS*



# PROCEDURE

- *FOAM AT LOW CONCENTRATION / VOLUME*
- *ENDOVENOUS LASER AT LOW FLUENCE*
- *WITHOUT ANESTHESIA*
- *OUTPATIENT TREATMENT*



# MECHANISM OF ACTION

- **POLIDOCANOL FOAM** - *VEIN SPAM-SHRINKAGE*  
- *ENDOTELIAL DAMAGE*
  
- **ENERGY TRANSFERENCE** - *POLIDOCANOL FOAM*  
- *VEIN ENDOTELIUM*  
- *BLOOD*

Smarandache, A ; Trelles, M. & Pascu, MI (2010 ).Measurement of the modifications of Polidocanol absorption spectra after exposure to INR laser radiation. J Optoelectronics Advanced Materials, Vol.12,N°9, pp 1942-1945, (2010 ) ISSN 1454-4164





# MATERIAL AND METHOD

- *263 Patients*
- *237 Greater saphenous veins (7 bilateral)*
- *26 Short Saphenous veins (4 bilateral )*
- *Age  $\frac{1}{2}$  47 years (74-29)*
- *Reflux more 1 seg.*
- *Diameter  $\frac{1}{2}$  13.5 mm (24-7)*



# MATERIAL AND METHOD

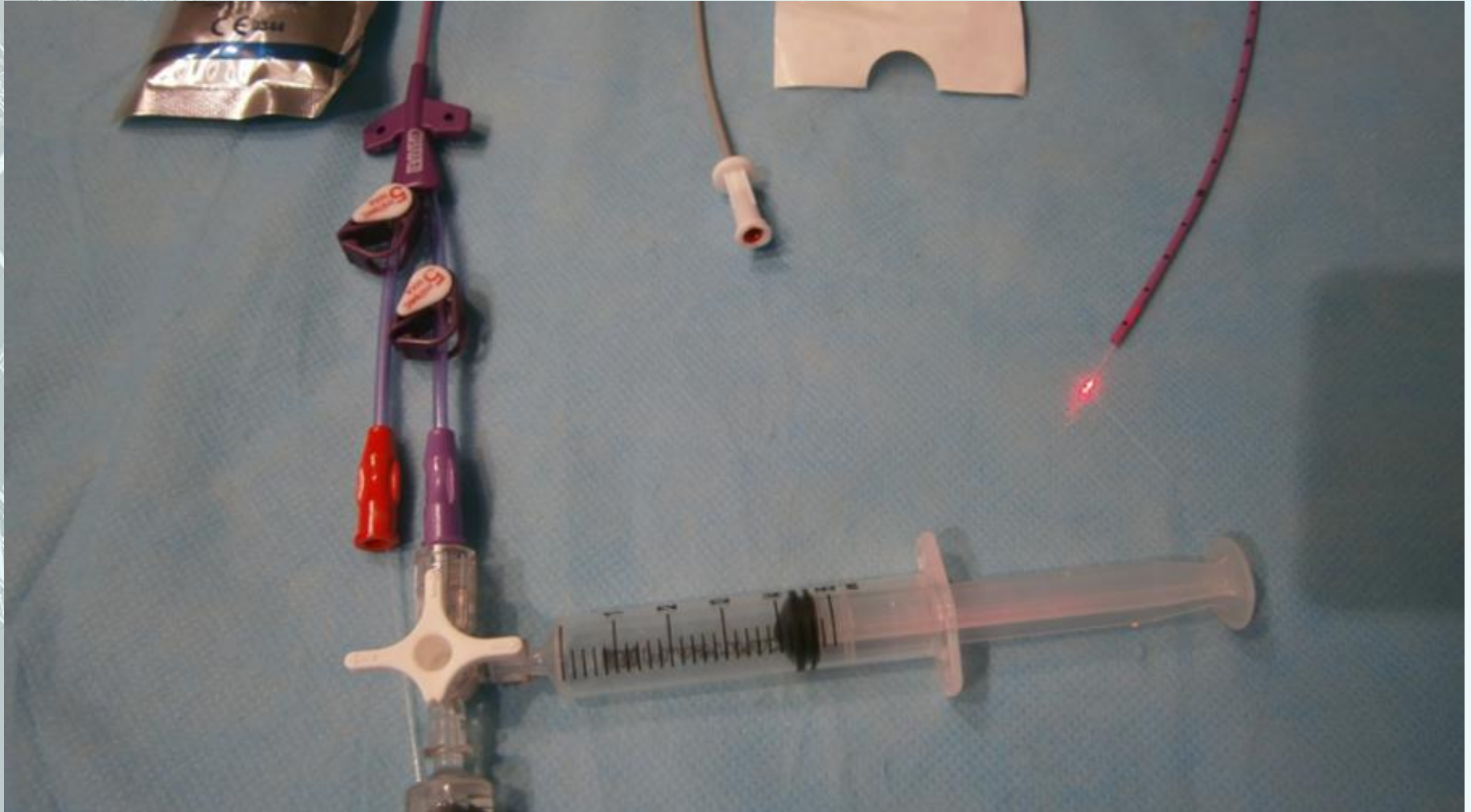
- *Polidocanol 0,75 -1- 1.5 % 4 cc / 3cc air (6-8 cc FOAM 1%)*
- *Láser 980, 1470 nm ( 1.5 w / 3 sec ) ( 300-400 joules )*
- *Continous mode and/ or double pulse 0.4 wats/5 sec.*
- *Optical fiber 400- 600 micras*
- *Catheter double lumen 5F-6F ( Bard Acces Systems )*
- *Catheter simple 5.0 F ( Cook Check-Flo Performer Introducer set )*
- *New optical fiber (specifically Synergic Vein Treatment ) PCT/ES2013/070728 (Pat.pendent).*

# CATHETER DOUBLE LUMEN

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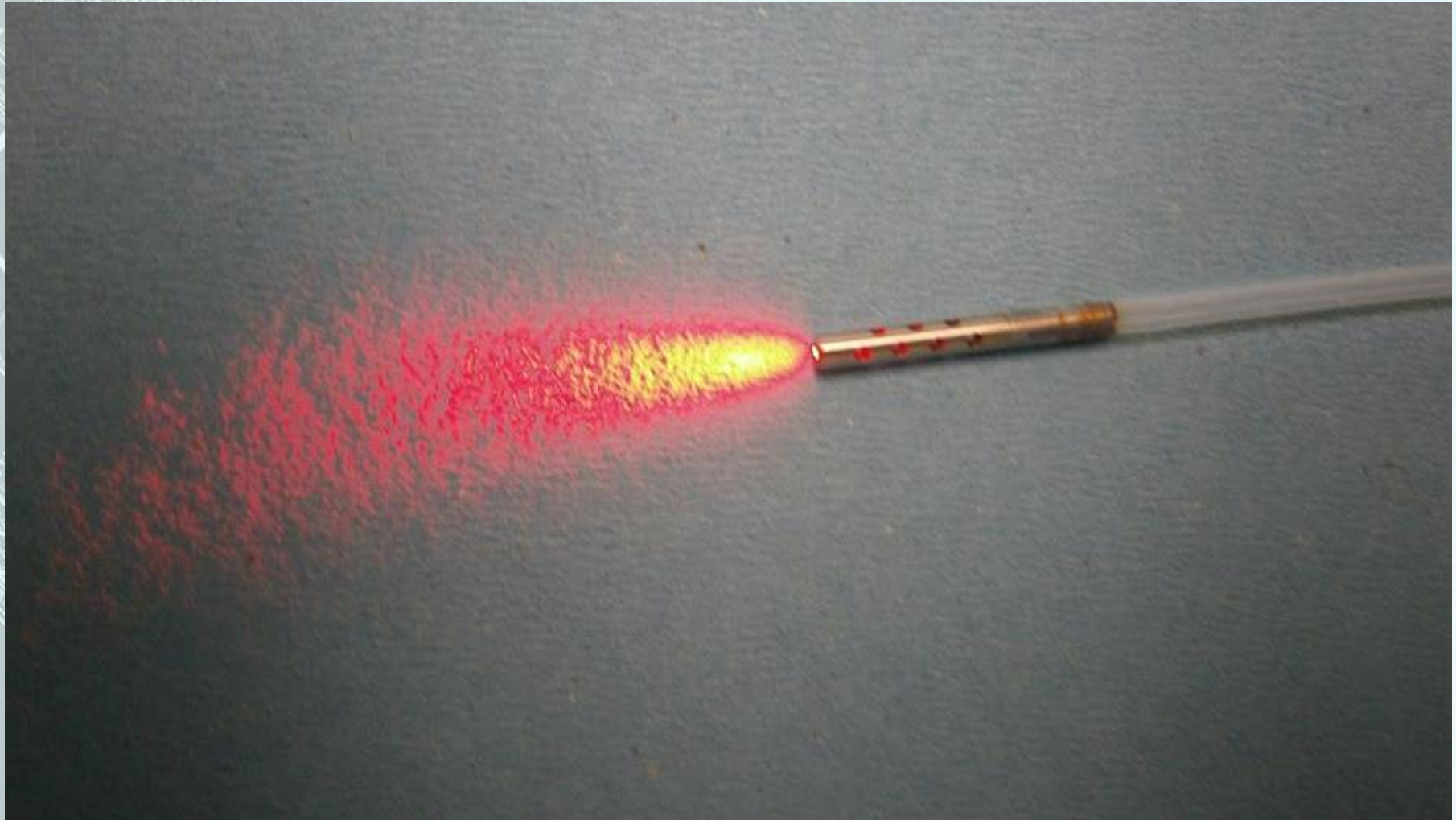
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# OPTICAL FIBER ELAF



# SYNERGIC VEIN FIBER

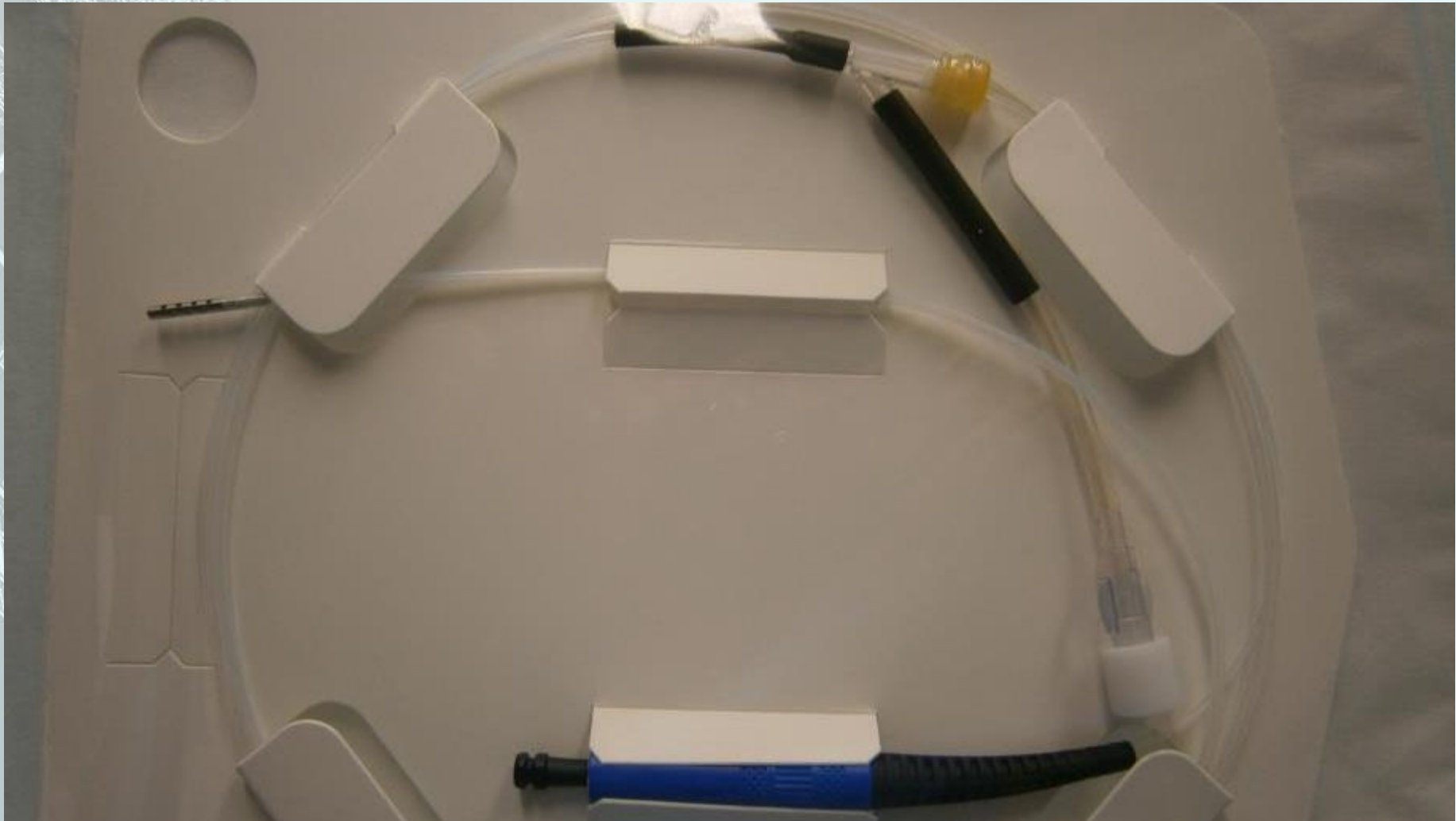
*PCT ES/2013/070728*

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# LAFOS

(Laser assisted foam sclerotherapy)

- **HOLMIUM LASER 2140 nm** - *LOW PENETRATION*  
- *VAPORIZATION*
- **FIRST LASER** - *LOW FLUENCE*
- **AFTER FOAM** (2-3%)

# ELAF

(Endolaser foam ablation)

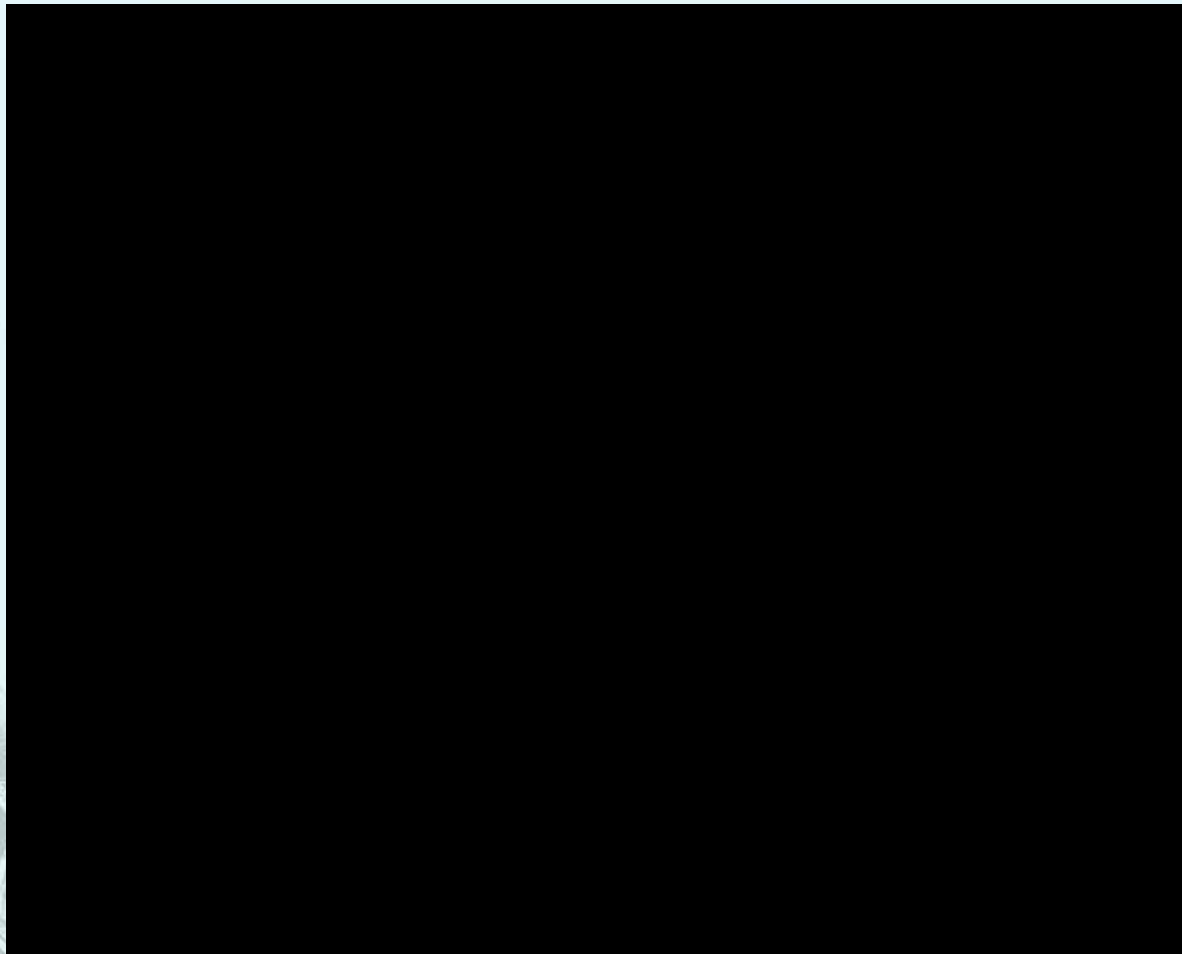
- **DIODE LÁSER** : 980-1470 nm – HEATING (*FOAM-BLOOD*)
- **SYNERGYC ACTION FOAM and LÁSER** (*SAME TIME*)
- **OCLUSION** 99%

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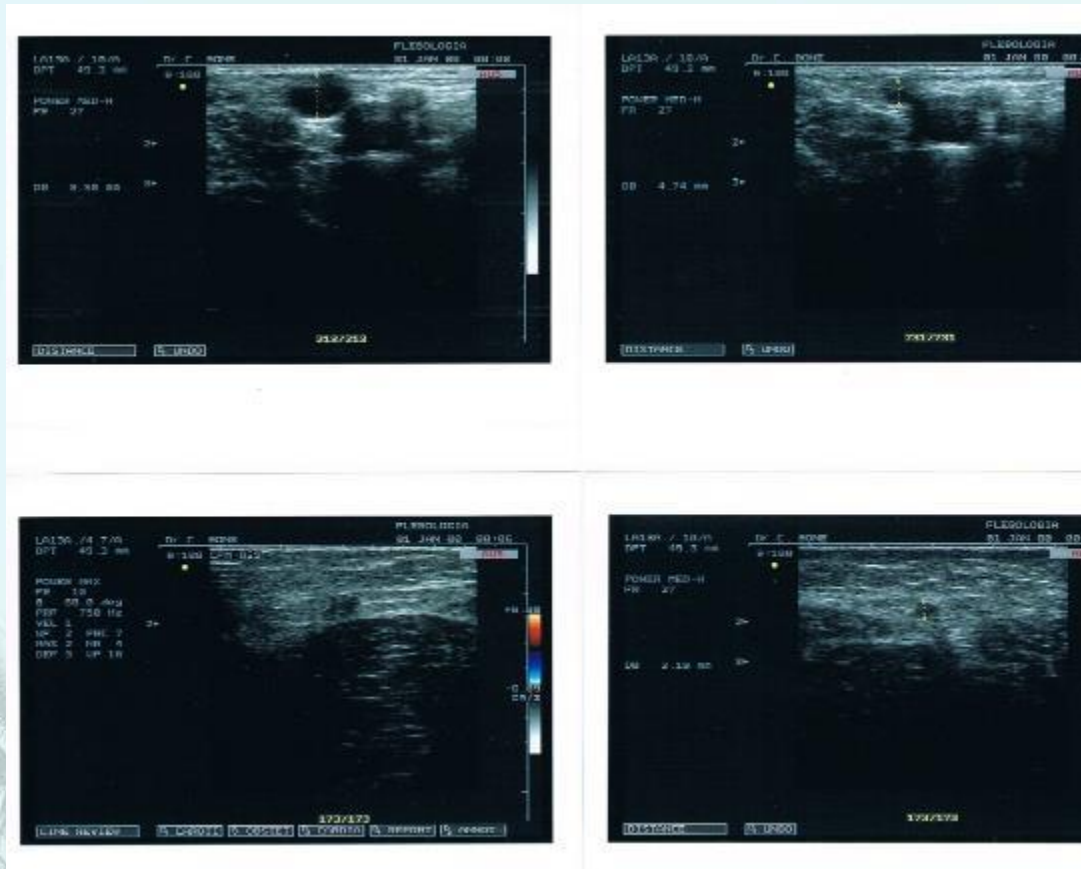
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# ULTRASOUND





# CONCLUSIONS

- *NEW SYNERGIC PROCEDURE LASER AND FOAM*
- *LOW THERMAL AND CHEMICAL CONCENTRATION*
- *WITHOUT ANESTHESIA*
- *ABLATION/FIBROSIS*
- *OUTPATIENT- ONLY OFFICE REQUIRED*
- *WE NEED MORE PHYSICO-CHEMICAL STUDIES*
- *TURNING POINT NEXT DECADE*

*Dr. C. Boné*