

Department of Vascular and Endovascular Surgery University of L'Aquila, Italy Head: Prof. Carlo Spartera



Indications for preferring endovenous laser treatment to traditional surgery: ten years experience of a single center



C. Spartera <u>M. Leopardi</u>

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Superficial chronic venous insufficiency (CVI)

Varicose veins

Severe socio-economic problem Wide representative population

common medical condition with prevalence rates as high 28% to 35% in adults



Treatment

Purpose

- Pathological refluxes
- Symptoms



- Long-term complications
- Disease-related quality of life (QOL)
- Aesthetics



Superficial chronic venous insufficiency Therapeutic options:

High ligation and stripping

BA.

- CHIVA
- Foam sclerotherapy
- Radiofrequency
- Steam treatment

Endovenous laser therapy



Laser therapy











Laser therapy IEWG inclusion criteria

Anatomical criteria:

Vein diameter in supine position = > 5mm < 18mm Vein distance from the skin > 4 mm Vein with tortuosity exceeding with J-tip No big collateral or perforating veins on saphenous course

Haemodinamic criteria:

Reflux > 1 sec with saphenofemoral junction valvular incompetence Competence of the first femoral vein valvula Absence of reflux junction vessels, especially from epigastric vein





Laser therapy



Duplex ultrasound mapping – our restrictions



Pre operatory

- Evaluation type of reflux
- Anatomical abnormalities and the presence of collateral branches
- Vascular calibers GSV < 15mm
- Distance from skin > 10mm

Intra operatory

- Tumescent anesthesia
- Percutaneous access
- Positioning control and the effect of fiber laser





Laser therapy Hb and H2O (target) Laser 980 nm

conduction of thermal energy

vein wall protein denaturising

coagulative necrosis

endovenous obliteration

functional exclusion of vein

Perrin M

Endovenous therapy for varicose veins of the lower extremities Ann. Chir. 2004 May;129(4):248-57











Cost Iow invasivity





OUR EXPERIENCE

Superficial chronic venous insufficiency treatment <u>first period</u> (September 2002 – February 2006) 643 surgical interventions





learning curve.....





OUR EXPERIENCE

Superficial chronic venous insufficiency treatment september 2002– june 2012 1533 surgical interventions







OUR EXPERIENCE

Superficial chronic venous insufficiency treatment Septemper 2002 – June 2012 1533 surgical interventions





Laser therapy

Endovenous laser treatment in the chronic venous insufficiency Our clinical experience

September 2002 - June 2012

1 Laser (2006-2009)

Less surgical scars

Less complications (haematoma, nerve injury)

Best aesthetic results

Tumescent anesthesia

Alternative to conventional surgery Restrictions



Retrospective analysis

Superficial chronic venous insufficiency treatment September 2002–June 2012 mean follow–up 18 months 684 Stripping - 639 Laser

C2-S, Ep, As2, Pr Bilateral (CEAP classification)*

50 Stripping

50 Laser

Clinical examination

Venous duplex doppler

*Glovizki P. Glovizki ML. Guidelines for the management of varicose veins. *Phlebology 2012;27 Suppl 1:2-9*



FOLLOW UP MEDIAN 18 months Laser (50 patients) CLINICAL RECURRENCES (16%) SOURCE OF RECURRENCE

SAPHENOFEMORAL JUNCTION 4 - SAME SITE

THIGH PERFORATOR

LOWER LEG PERFORATOR



CLINICAL RECURRENCE – FREE RATE 84%



FOLLOW UP MEDIAN 18 mont	hs	
Laser (50 patien	ts)	
DUPLEX RECURRE	NCES	(30%)
SOURCE OF RECURR	ENCE	
PARTIAL RECANALIZATION	10	(20%)
FULL RECANALIZATION	2	(3%)
INCOMPETENT GROIN TRIBUTARIES	3	(7%)
DUPLEX RECURRENCE – FREE RA	TE 70%	



FOLLOW UP **MEDIAN 18 months** Stripping (50 patients) **CLINICAL RECURRENCES** (22%) SOURCE OF RECURRENCE SAME SITE SAPHENOFEMORAL JUNCTION THIGH PERFORATOR DIFFERENT SITE LOWER LEG PERFORATOR 6 $\langle \rangle$

CLINICAL RECURRENCE – FREE RATE 78%



FOLLOW UP **MEDIAN 18 months** Stripping (50 patients) **DUPLEX RECURRENCES** (6%) SOURCE OF RECURRENCE 1 (2%) **NEOVASCULARIZATION** (4%) 2 **INCOMPETENT GROIN TRIBUTARIES**

DUPLEX RECURRENCE – FREE RATES 94%



Stripping vs Laser

Cost benefit for Laser still very convenient 30% of US recurrence with partial recanalization but only 16% with symptomatic recurrence: SYMPTOM REDUCTION

Great difference in duplex US between Stripping and Laser But very similar clinical results: Recurrence-free rates Stripping 78% and Laser 84%







1470 nm Diode Laser

In the last months we upgraded to a new machine

- Radial emitting fiber
- No guiding catheter
- Better maneuverability of laser probe

Better results both in clinical examination and duplex Doppler

• Complete GSV obliteration in all patients Significant decrease of ecchymosis along treated GSV





Laser is a fast and noninvasive technique with good results but depends on which therapeutic endpoint we choose: Eliminate reflux or better clinical symptom?

Can not be considered the gold standard treatment anatomical and hemodynamic restrictions no better mid term results compared to Stripping

Stripping is still considered the best technique to treat CVI But we strongly recommend Laser in Early stages of CVI to prevent the evolution of disease Young patients with aesthetic problems





Laser may place side by side conventional therapy But we need:

More clinical trials as is difficult to follow patients treated for CVI Development of new laser tools to widen anatomical and hemodynamic restrictions





