Research Article

Management of Primary Uncomplicated Varicose Veins; Endovenous Laser Ablation with Sclerotherapy Versus Traditional Surgery; what's The Best?

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Abstract
Objectives: The aim of this work was to compare between EVLT with ambulatory phlebectomy, EVLT with injection sclerotherapy, and the standard surgical procedure. **Patients and methods:** Randomized prospective study of 60 patients suffered from primary uncomplicated varicose veins, carried out at Minia University Hospital. **Results:** The combination technique of EVLT and injection sclerotherapy appears to be a safe and an efficient treatment method for the treatment of the GSV and SSV achieving good short –term and long-term results.
Keywords: Varicose veins, EVLT, Injection sclerotherapy

Introduction
Varicose veins belong to the most frequent lifestyle diseases, as they affect up to 40% of industrialized countries' citizens in the age between 30 and 70 (Uruski et al., 2017). Etiology of the disease involves weakness of the vein wall and venous dilatation, elicited by abnormal venous wall remodeling. (Terézhalmy et al., 2013)

Currently there are two ways for varicose vein management: lifestyle modifications and medical procedures. Lifestyle-related recommendations include the avoidance of a prolonged standing and sitting, an intensification of physical exercise, a loosening of restrictive clothes, and losing weight by obese people. Medical methods include the use of venoactive drugs, compression treatment, sclerotherapy, phlebectomy, open venous surgery with ligation and stripping, endovenous ablation techniques and radiofrequency ablation therapy. (Rendon et al., 2002)

Materials and Methods
Randomized prospective study of 60 patients suffered from primary uncomplicated varicose veins, carried out at Minia University Hospital, and held among three groups that were randomly selected.

Group A included 20 patients (24 limbs) with primary uncomplicated varicose veins underwent surgical management.
Group B included 20 (24limbs) patients with primary uncomplicated varicose veins underwent endo-venous laser with ambulatory phlebotomy.

Group C included 20 patients (24limbs) underwent endo-venous laser with injection sclerotherapy management.

Patients who were included in this study were subjected to History taking, Physical examination, Investigations, Consent and patient advice, Operative procedure, and Post-operative follow up.

Results
The results in this study that varicose veins affected 80% unilateral lower limb in all groups and the common distribution of dilated veins was (GSV and dilated tributaries) in all groups.

37.5% of the patients in group (C) were complicated and only 25%, 12.5% of the patients in groups (A and B) respectively. The most common complication in groups (A and B) was superficial thrombo-phlebitis represent (8.3% and 12.5%) respectively

and in group (C) was hematoma 12.5%. 95.8%of patients in group A, 83.3% of patients in group B and 66.7% of patients in group C was satisfied according to time of hospital stay, time of recovery, post. Operative pain, wound scar, residual VV.

Discussion

A total of (60) patients and (72) limbs were included in the study between May 2017 to February 2018 which considered to be a small number was treated by 980 nm diode laser with injection or phlebectomy and HLS, the mean follow up period was 3 months, this was similar to other studies done by Kim et al., who studied 48 patients for 6 month duration, (Hyun et al., 2006) Oh Chang-Keun et al., who followed 12 patients for 3 months. (Oh CK et al., 2003)

Mean age in the patients who underwent EVLA and injection was 33.2±6.4 years, while the mean age in the study of Lee et al., was 59.1 years (Lee et al., 2016) . Patients who underwent EVLA and phlebectomy mean age was 34.9±9.7 years, While in the study of Fernández, Roizental & Carvallo about EVLA and phlebectomy was 52.8 (12.6) Years (Fernández et al., 2008).

Common complications with Group A (EVLA + injection sclerotherapy) were superficial thrombophlepitis (8.3%) followed by ecchymosis (4.1%). no cases of hyperpigmentation was reported in this group. Ecchymosis resolved within 2 weeks and superficial thrombophlepitis resolved within 1 month.

Although rare, EVLT with sclerothearpy was not free of significant complication. Mozes et al., reported 3 cases of thrombus extension into the common femoral vein following EVLT. All of the thrombus resolved in these cases by one month without adverse sequelae, in our study the follow up of patients was free from any thrombus in the deep venous system. (Mozes et al., 2005)

Fernández, Roizental, and Carvallo have evaluated the safety and clinical and anatomic effectiveness of endovenous laser therapy (EVLT) and microphlebectomy (1559 patients) and the complications were in the form of superficial phlebitis of associated tributary varicose veins was noted in 58 patients (2.9%) and resolved with compression therapy and non-steroidal anti- inflammatory medication in all cases (Fernández et al., 2008)

In this study, mean energy applied was 70 J/cm, this was comparable to amount of energy which was applied in the studies of Theivacumar et al (N.S.Theivacumar et al., 2008) Timperman et al., (Timperman, 2004) and Proebstle et al., (Proebstle TM, Moehler T and Herdemamm S; 2006) that reported 60-70 J/cm, 63.4 J/cm and 63 J/cm respectively.

In the MAGNA study, a significantly higher number of patients undergoing surgery suffered from wound infection requiring systemic antibiotics .The overall rate of complications was also higher with surgery, but this was not significant (p-value 0.64) (Biemans et al., 2013). While in this study was significant decrease in complication rate with EVLA (p-value 0.049*)

In this study 95%of patients in group A, 80% of patients in group B and 60% of patients in group C was satisfied according to time of hospital stay, time of recovery, post. Operative pain, wound scar, residual VV.

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