

**COMPARATIVE STUDY BETWEEN GREAT  
SAPHENOUS VEIN STRIPPING AND MODIFIED  
HAEMODYNAMIC CORRECTION (CHIVA) AS A  
SURGICAL TREATMENT FOR VARICOSE VEINS  
RELATED TO GREAT SAPHENOUS VEIN  
SYSTEM**

*THESIS OF*

***Mahmoud Badawi Moawad***

(M.B.B.Ch, MSc. General Surgery)

A thesis submitted for partial fulfillment of The requirements for the doctorate  
degree In

**General Surgery**

DEPARTMENT OF SURGERY

FACULTY OF MEDECINE

FAYOUM UNIVERSITY

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## ABSTRACT

**Background:** The CHIVA (*Cure Conservatrice et de l'Hémodynamique insuffisance Véneuse en ambulatoire*) technique has appeared at the decade of eighties of the last century. It has been identified to be an attractive method for the treatment of lower limb varicosities, in spite of the little number of surgeons skilled at this procedure at its beginning. The CHIVA has been continuing to be more effective although the huge revolution of the more recent modalities for the treatment of varicosities. This relatively new procedure depends in its management of varicose veins on the reversion of the venous blood flow to its normal haemodynamic state at both deep and superficial systems via breaking all types of reflux at the escape points within the different compartments.

**Subjects and Methodology:** This study has been carried out at the general surgery department in Fayoum University Hospital (FUH) in the period from May 2015 to January 2017 and included 60 patients from those attended the outpatient departments of general surgery complaining from CDV or varicose veins were randomly arranged into 2 groups 30 cases group; group I (CHIVA) and group II (HLS). They were assessed according to the CEAP clinical classification and ultrasonic duplex scanning. CHIVA operation was performed under local anesthesia while the stripping under spinal or general anesthesia. Cases were reviewed regularly at the outpatient clinic for 12 months to assess recurrence rates and complications at both groups; data were recorded and statistically analyzed.

**Results:** The recurrence occurred at 5 of 30 and 0 of 30 at CHIVA and stripping respectively. Regarding the aesthetic satisfaction of the patient, the stripping was better; 27/30 in contrast to 21/30, while the investigator satisfaction was more or less equal; 22/30 for stripping and 23/30 for CHIVA. The wound infection was 1/30 in each group. Nerve damage,

bruises and superficial venous thrombosis were found to be 0 of 30, 8 of 30 and 0 of 30 in CHIVA group, while at the stripping group were 3 of 30, 16 of 30 and 1 of 30 respectively.

**Conclusions:** It is suggested for the CHIVA method to be more efficient if it was followed up on a longer time scale; at least 60-120 months. Proper surgical techniques in the form of using non-absorbable ligatures with removal of venous segments 1-4 cm as well could lead to more satisfying results. Additionally, the bigger sample size could add to the reliability of conclusions of such comparative studies.

**Key Words:** Varicose veins surgery, CHIVA, Venous stripping.

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### LIST OF ABBREVIATIONS

<b>AAGSV</b>	Anterior Accessory Great Saphenous Vein
<b>AASV</b>	Anterior Accessory Saphenous Vein
<b>AC</b>	Anatomical Compartment
<b>ASVAL</b>	Ambulatory Selective Varices Ablation under Local Anaesthesia
<b>CEAP</b>	Clinical, Etiological, Anatomic, and Pathological
<b>CFV</b>	Common Femoral Vein
<b>CFA</b>	Common Femoral Artery
<b>CHIVA</b>	Cure Conservatrice et de l'Hémodynamique insuffisance Véneuse en ambulatoire
<b>CIA</b>	Common Iliac Artery
<b>CIV</b>	Common Iliac Vein
<b>CVD</b>	Chronic Venous Disease
<b>CVI</b>	Chronic Venous Insufficiency
<b>CS</b>	Closed Shunt
<b>DFHSP</b>	Dynamic Fractionation of Hydrostatic Pressure
<b>DOI</b>	Digital Object Identifier
<b>DOS</b>	Derived Open Shunt or Open Derived Shunt (ODS)
<b>DUS</b>	Duplex Ultrasound
<b>DVT</b>	Deep Vein Thrombosis
<b>EIV</b>	External Iliac Vein
<b>EIA</b>	External Iliac Artery
<b>EVLT</b>	Endovenous Laser Ablation
<b>EVLT</b>	Endovenous Laser Therapy
<b>GSV</b>	Great Saphenous Vein
<b>HHD</b>	Hand-Held Doppler
<b>HLS</b>	High Ligation and Stripping
<b>HRQOL</b>	Health-Related Quality Of Life
<b>IIA</b>	Internal Iliac Artery
<b>IIV</b>	Internal Iliac Vein
<b>IPVs</b>	Incompetent Perforating Veins

**LSV** Long Saphenous Vein  
**OV** Obturator vein  
**OS** Open Shunt  
**PEP** Pelvic Escape Points  
**PRO** Patient-Reported Outcome  
**PV** Perforating Vein  
**QoL** Quality of Life  
**RCT** Randomized Controlled Studies  
**RFA** Radio Frequency Ablation  
**rVCSS** revised Venous Clinical Severity Score  
**SF** Shunt Flow  
**SFJ** Saphenofemoral Junction  
**SPJ** Saphenopopliteal Junction  
**SSV** Small Saphenous Veins  
**SVI** Superficial Venous Insufficiency  
**UGFS** Ultrasound-Guided Foam Sclerotherapy  
**UIP** Union of Phlebology  
**VCSS** Venous Clinical Severity Score  
**VMP** Valvulo-Muscular Pump  
**VSS** Venous Severity Scoring