

Vein Stripping Versus No Stripping in Varicose Vein Disease

MUHAMMAD AFZAL¹, MUHAMMAD UMAIR SAMEE², DILEEP KUMAR³, NISAR AHMED⁴, SHAHID HUSSAIN MIRANI⁵

¹Assistant Professor, Department of Surgery, CMH Kharian Medical College, Kharian

²Associate Professor, Department of Surgery, Central Park Medical College, Lahore

³Associate Professor, Department of General Surgery, Ward-2, JPMC/Jinnah Sindh Medical University, Karachi

⁴Associate Professor, Department of Orthopaedic, CMH Kharian Medical College Kharian

⁵Associate Professor, Department of Surgery Unit-2, GMMMC Teaching Hospital, Sukkur

Correspondence to Dr. Muhammad Afzal, E-mail: chowhan67@gmail.com Cell: 0300-8731013

ABSTRACT

Aim: To comparative analysis of vein stripping versus no stripping in varicose vein disease.

Study design: Comparative study

Place and duration of study: Department of Surgery, CMH Kharian Medical College, Kharian from 01-01-2019 to 31-12-2021.

Methodology: Eighty cases of varicose vein which were having sapheno-femoral valve incompetence as well as perforators-incompetence were enrolled. The age of the cases was between 16 and 70 year. Electrocardiography (ECG), as well as venous Doppler of the affected limb was accomplished. Each group comprised 40 cases. Group A and Group B were constituted in accordance to difference in the operating procedure where vein stripping was done in Group A and without vein stripping was conducted in Group B.

Results: The mean age of the patients was 42.3±4.5 years. There was higher number of females than males in this study. In the present study there were higher cases of hematoma observed in group A than in Group B with a percentage difference of 27.7% to 4.4% which was statistically significant. Ambulation comfort was observed higher in cases with ligation then having venous stripping. Pain relief of the patients post 2 months of the surgery was analyzed as higher in the Group A such as venous stripping group in comparison with the without venous stripping group (Group B).

Conclusion: The technology of ligation where no vein stripping is conducted is more efficient and reliable then vein stripping methods in terms of pain, hematoma reduction, and trauma reduction with augmenting ambulation comfort.

Keywords: Varicose, Mortality, Peroneal vein, Tibia, Femor

INTRODUCTION

Varicose veins disease is known as one of the oldest diseases of mankind. Varicose veins are twisted and enlarged veins and any vein can become varicose if it is close to skin. It is considered as progressive disease as it gets worse with each passing day. Mortality rate related with this disease is rare but it results into various morbidities.¹ Available treatment options are endogenous therapies and traditional surgical methods. However, it is suggested that, treatment should be given to the patients based on the symptomatology and overall patient' condition².

Most of the deep leg veins are originated from deep plantar venous arch. One of the three main deep leg veins is peroneal veins, posterior tibia and anterior tibia. Peroneal vein and posterior tibial vein join together to form on along tibioperoneal trunk. Whereas, all the three deep vein join together to form popliteal vein in knee that passes anteriorly and upwards and when it reach the distal end of the thigh, it then termed as superficial femoral vein³⁻⁵. Upon reaching there it joined to femoral vein and become external iliac vein. When person is tending in erect posture, blood is naturally pool downwards due to the force of gravity. It has to push towards heart against the force of gravity. This movement and flow of blood is done through muscles of limbs that works as peripheral heart and prevent retrograde blood flow⁵⁻⁸.

Veins have valves inside them which helps for the in the blood flow to the correct site and direction. Vein stripping is a surgical technique which is employed to remove tie off large vein of leg which helps in varicose vein. Vein stripping is called "tying off" varicose veins⁹⁻¹¹. This comparative study is design for the evaluation of treatment outcome after vein stripping vs no stripping in varicose vein disease.

MATERIALS AND METHODS

This comparative study was conducted at Department of Surgery, CMH Kharian Medical College, Kharian from 1st January 2019 to 31st December 2021. A total of 80 cases of varicose vein having

Received on 13-09-2021

Accepted on 24-01-2023

sapheno-femoral valve incompetence as well as perforators-incompetence were enrolled. The age of the cases was between 16 and 70 years. All those patients having deep vein thrombosis, and were associated with short saphenous vein-varicosity, as well as with venous ulcer or any other skin variations, recurring varicosity were placed in exclusion criteria. The sample size was generated through WHO sample size calculator using 80% power of test, 95% confidence of interval and 5% margin of error. Each patient complete clinical history and radiological examination including chest x ray was performed. Electrocardiography (ECG), as well as venous Doppler of the affected limb was accomplished. All enrolled cases were gender and age matched. The procedure was completely explained to all participants and their consent was taken. Out of the total cases 40 cases were allotted in each group. Group A and Group B were constituted in accordance to difference in the operating procedure. In group A patients underwent trendelenburg procedure which was conducted through transverse incision with a 3cm length under the groin-crease, it extending from femoral artery-pulsation site to the medially region. The incompetent-perforators present in thigh were then ligated and underwent subfascial division through transverse minor incision across vein path. The long saphenous vein is then stripped from the groin underneath the knee which is bypassing the stripper and into the vein. While in Group B Trendelenburg technique was performed through transverse incision within a 3cm length under groin-crease which further extended from femoral site artery-pulsation medially. Incompetent perforators present in leg were then ligated and subfascial was divided through a small transverse-incision which was presented across vein path. Hemostasis leads to wound closure. Elevation of the limb as well as crepe bandage was kept applied. Patients were followed postoperatively and upto 2 months. Data was analyzed by using SPSS version 26.0. Chi square was used for analyzing result with a p-value <0.05 as significant.

RESULTS

The mean age of the patients was 42.3±4.5 years. There were more patients in the 41-70 years of age than 16-40 years group. There was higher number of females than males in this study.

There were 66.2% of the cases who were having left limb involvement than only 33.8% with right limb (Table 1).

In the present study there were higher cases of hematoma observed in group A than in Group B with a percentage difference of 27.5% to 5% which was statistically significant. However, there was no variance within the delayed wound healing cases with similar outcome. Ambulation comfort was observed higher in cases with ligation then having venous stripping. It was identified that the case of Group A, the tissue trauma, as well as hematoma development, bruising and pain was more in group A than group B (Table 2).

The follow-up result of pain relief of the patients post 2 months of the surgery was analyzed as higher in the Group A such as venous stripping group in comparison with the without venous stripping group (Group B). The p value was less than 0.05 (Fig. 1).

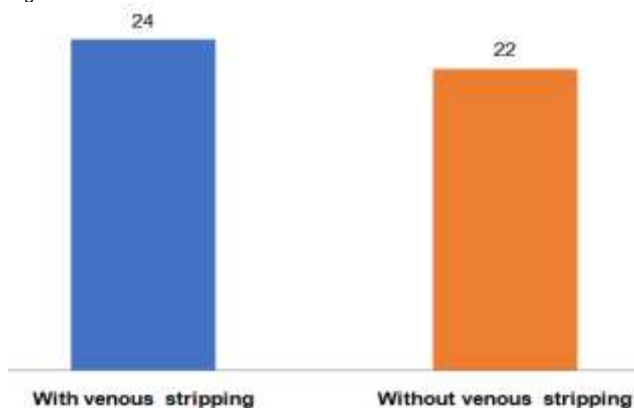
Table 1: Demographic and clinical distribution of cases (n=80)

Variable	No.	%
Age (years)		
16-40	33	41.2
41-70	47	58.7
Gender		
Males	31	38.7
Females	49	61.3
Limb involvement		
Left	53	66.2
Right	27	33.8

Table 2: Comparison in Group A and Group B clinical outcomes

Variable	With venous stripping (n=40)	Without venous stripping (n=40)	P value
Hematoma in thigh	11 (27.5%)	2 (5%)	<0.05
Delayed wound	2 (5%)	2 (5%)	1.2
Ambulation comfort (1 st post operative day walk)	27 (67.5%)	37 (92.5%)	0.041
Tissue trauma	32 (80%)	21 (52.5%)	0.052

Fig. 1: Pain relief at 2 months



DISCUSSION

Varicose veins are the oldest diseases of mankind due to one to various underlying reasons. It can be treated through different modalities including simple phlebectomy to minimally invasive methods. Varicose veins are simply termed as tortuous and elongated veins that can appear anywhere on the body where veins are close to the skin surface. Present study was designed for the comparison of two outcomes on the basis of with and without venous stripping in viscose surgery. Follow-up was taken upto 2 months' period for better result and outcome evaluation.

In present study, males were more prone towards having these diseases as compared to the females. Most of the patients were in the age group of 40-70 years and their percentage from other study population was higher. Hematoma was commonly observed after venous stripping whereas its percentage was very less or almost to negligible in second study group. Similar results were reported by other studies. Healing of leg wounds was similar in both study groups. Wounds were also examined postoperatively for 2 months' period. Only 4% of the patient showed delay in wound healing due to which infection was noticed in the patients¹³⁻¹⁷.

On first day of walking after post-operative period, more than 50% of the patient who underwent stripping and approximately 80% of the patients from ligation group showed positive sign and comfortable ambulation. Hematoma formation, tissue trauma and pain were observed in higher number of patients who underwent venous stripping whereas its frequency was much less in second study group. No such comorbidity was observed in all study participants. A study reported elsewhere also had similar findings¹⁸⁻²¹.

CONCLUSION

The technology of ligation where no vein stripping is conducted is more efficient and reliable then vein stripping methods in terms of pain, hematoma reduction, and trauma reduction with augmenting ambulation comfort.

Conflict of interest: Nil

REFERENCES

- Cronenwett JL, Johnston KW. Rutherford's vascular surgery. 7th ed. Philadelphia: Saunders, 2014;831-901.
- Williams NS, Bulstrode CJK, O'Connell PR. Bailey & Love's short practice of surgery. 25th ed. London: Saunders, 2008;925-38.
- Fischer JE, Jones DB, Pomposelli FB, Upchurch GR. Fischer's Mastery of Surgery. 6th ed. Lippincott Williams and Wilkins. 2011;2414-35.
- Moore KL, Dalley AF, Agur AMR. Clinically oriented anatomy. 7th ed. Lippincott Williams and Wilkins. 2013;532-5.
- Liem TK, Moneta GL, Bruncardi FC. Schwartz's principles of surgery. 9th ed. McGraw-Hill, 2019;777-89.
- Zollinger RM, Ellison EC. Zollinger's atlas of surgical operations. 9th ed. McGraw-Hill, 2016;360-1.
- MacKenzie RK, Paisley A, Allan PA, Lee AJ, Ruckley CV, Bradbury AW. The effect of long saphenous vein stripping on quality of life. J Vascular Surg 2002;35(6):1197-203.
- Ombrellino M, Kabnick LS. Varicose vein surgery. Semin Intervent Radiol 2005;22(3):185-94.
- Winterborn RJ, Foy C, Earnshaw JJ. Causes of varicose vein recurrence: late results of a randomized controlled trail of stripping the long saphenous vein. J Vasc Surg 2004;40:634-9.
- Olivencia JA. Ambulatory phlebectomy turned 2400 years old. Dermatol Surg 2004;30:704-8.
- Kabnick L S. Should we consider a paradigm shift for the treatment of GSV and branch varicosities? San Diego: UIP World Congress Phlebology Chapter Meeting; 2003.
- Freischlag JA, Heller JA. Sabiston textbook of surgery. 18th ed. Philadelphia: Elsevier, 2002; 19.
- Cuschieri SA, Steele RJC, Moossa AR. Essential surgical practice. 4th ed. New York: Oxford University Press, 2001;879-923.
- Somen Das. A manual on clinical surgery. 8th ed. India: S Das Publication, 2008;100-8.
- Durkin MT, Turton EP, Scott DJ, Berridge DC. A prospective randomized trial of PIN versus conventional stripping in varicose vein surgery. Ann R Coll Surg Engl 1999;81(3):171-4.
- Sykes TC, Brookes P, Hickey NC. A prospective randomized trial of tourniquet in varicose vein surgery. Ann R Coll Surg Engl 2000;82(4):280-2.
- Pleass HC, Holdsworth JD. Audit of the introduction of hand-held Doppler and duplex ultrasound in the management of varicose veins. Ann R Coll Surg Engl 1996;78(6):494-6.
- Ryan TJ. Diseases of the skin: management of varicose ulcers and eczema. Br Med J 1974; 1(5900):192-4.
- Kent PJ, Weston MJ. Duplex scanning may be used selectively in patients with primary varicose veins. Ann R Coll Surg Engl 1998; 80(6):388-93.
- Xenos ES, Bietz G, Minion DJ, Abedi NN, Sorial EE, Karagiorgos N, Ender ED. Endoluminal thermal ablation versus stripping of the saphenous vein: Meta-analysis of recurrence of reflux. Int J Angiol 2009; 18(2):75-8.
- Balabusramaniam V. A comparative study on outcome of surgical management of varicose veins with and without venous stripping. Int Surg J 2021; 8(3):822-5.