

Comparison of ligation versus ligation with stripping of long Saphenous vein in varicose veins of lower limb

N L Eshwar Prasad *¹, N Balraj ²

¹Associate Professor, Department of General Surgery, Osmania Medical college and Hospital, Hyderabad, Telangana, India

²Assistant Professor, Department of General Surgery, Government Medical college and Hospital, Nizamabad, Telangana, India

ABSTRACT

Aim: To compare the incident of complications after ligation versus ligation with stripping of long saphenous vein in the treatment of primary varicose veins of lower limb. **Materials and methods:** The prospective randomized study is based on analysis of 80 cases of primary varicose veins of long saphenous vein or without perforator in competence from the period of 1 year in department of general surgery, Patients are divided into Group-L 40 patients for simple ligation and group-LS 40 patients for ligation with stripping of long saphenous vein. **Results:** Similar significant difference with respect to the surgical time, amount of bleeding and duration of hospital stays was observed in Group-LS as compared to group-L ($P < 0.01$). Hematoma and wound infection is not significant in group-L compared to group -LS. Limb edema is significant in group-LS compared to group -L. In the group that underwent ligation alone, thigh perforators were present in 62.5% cases whereas in the group that underwent ligation combined with stripping thigh perforators were present in 57.5 % of cases which is significant. After surgery residual long saphenous vein reflux was present in 37.5% cases in the group in which ligation alone was done and residual thigh perforators were identified in 33.3% of cases which is significant, whereas in the group which underwent ligation combined with stripping of the thigh segment of long saphenous vein residual reflux was present in 21.4% cases and no residual thigh perforators were identified which is significant. **Conclusion:** Ligation with stripping for patients with varicosities of the lower extremity with a shorter surgical time, fewer bleeding, duration of hospital stays and residual perforator.

Keywords: Long saphenous vein, Thigh perforators, Primary varicose.

Introduction

Varicose veins have an overall prevalence of between 20 and 60%, and approximately 25% of the adult population have at least one varicose vein[1].The condition is most often associated with great saphenous vein (GSV) reflux. Treatment of varicose veins is considered appropriate by the majority of vascular surgeons if the veins are symptomatic [2].Common symptoms attributable to varicose veins include poor cosmesis (cosmetic appearance), ache and itching. Less common problems include haemorrhage (bleeding) and thrombophlebitis (inflammation of the vein wall with associated blood clot)[3].For many years, ligation of

the saphenofemoral junction (SFJ), stripping of the great saphenous vein (GSV) and multiple avulsions is considered to be the standard treatment for varicose veins[4]. Until recently, standard treatment has been surgery, with high ligation and stripping to knee level,. Such treatment efficiently reduces symptoms, improves quality of life (QoL), and reduces the rate of reoperation. However, the operation may occasionally be associated with significant postoperative morbidity, including bleeding, groin infection, and saphenous nerve damage. Major complications are rare. Conventional surgery is most often performed in hospital and using general or regional anaesthesia, which may increase costs. To compare the effectiveness of tendelenberg operation and tendelenberg operation combined with stripping of the thigh segment of long saphenous vein in the treatment of primary varicose veins of lower limb and compare

*Correspondence

Dr. N L Eshwar Prasad

Assistant Professor, Department of General Surgery, Osmania Medical college and Hospital, Hyderabad, India

Email: nleshwarprasad@gmail.com

the incident of complications after ligation versus ligation with stripping of long saphenous vein.

Material and methods

The prospective randomized study is based on analysis of 80 cases of primary varicose veins of long saphenous vein or without perforator in competence that got treated by either simple ligation or ligation with stripping of long saphenous vein from the period of July 2014 to Dec 2015 'at Osmania General hospital, upgraded department of general surgery.

Inclusion Criteria

Patient with primary varicose veins of long saphenous vein with incompetent sapheno femoral Junction with or without thigh perforator and with or without below knee perforators.

Exclusion Criteria

Patients with secondary varicose veins, short saphenous vein varicosities, long saphenous vein varicosities without sapheno femoral incompetent.

Patients are divided into Group-L for simple ligation and group-LS for ligation with stripping of long saphenous vein . All patients were admitted were investigated preoperatively by routine biochemical

testing, Doppler duplex ultra sound, after taking a thorough clinical history and performing a thorough clinical assessment. Patients were operated in elective theatres with aseptic precaution under spinal/epidural/general anesthesia. No local anesthesia was used patients were treated in post operative ward for the 1st postoperative day and general wards on 2nd postoperative day. All patients were applied elastocrepe bandage immediately after surgery and the bondage was removed after 48 hours for wound inspection a reapplied. Patients were encouraged ambulation only after 48 hours and we instructed the contract the leg dorsiflex the foot against the railing of the bed. All stripping were done from groin to just below knee level only all below knee perforators and varicosities were treated in the same way in both groups by perforator ligation and multiple phlebectomies. All patients were thoroughly assessed for complications and we discharged after suture removal with instructions to attend surgical OPD 1 month and 3 month after surgery. After a minimum of 3 months of follow up with mean of 5,6 months the patients were assessed both clinically and some graphically and the results were tabulated.

Results

Table 1: Clinical data in two groups

	Sex ratio (male/female)	Age	History of disease
Group L	25/15	53.83 ± 16.28	15.23 ± 7.01
Group LS	28/12	52.76 ± 14.84	14.05 ± 7.91
P value		P > 0.05	P > 0.05

Table 2: Surgical time and the amount of bleeding of single limb, duration of hospital stays in two groups

	Surgical time (min)	Amount of bleeding (ml)	Duration of hospital stays (days)
Group L	87.45 ± 12.45	56.80 ± 17.14	11.33 ± 4.45
Group LS	61.87 ± 7.02	44.71 ± 6.08	7.55 ± 3.06
P value	P < 0.01	P < 0.05	P < 0.05

Similar significant difference with respect to the surgical time, amount of bleeding and duration of hospital stays was observed in Group-LS as compared to group-L (P < 0.01)

Table 3: Management Results

Operation	Before surgery		After surgery	
	SFJ reflux LSV reflux	Thigh perforators	Residual LSV reflux	Residual perforators
Ligation	40	25	6(21.4%)	4(33.3%)
Ligation + Stripping	40	22	4(19.1%)	0

In the group that underwent ligation alone, thigh perforators were present in 62.5% cases whereas in the group that underwent ligation combined with stripping thigh perforators were present in 57.5 % of cases which is significant. After surgery residual long saphenous vein reflux was present in 37.5% cases in the group in which ligation alone was done and residual thigh perforators were identified in 33.3% of cases which is significant ,whereas in the group which underwent ligation combined with stripping of the thigh segment of long saphenous vein residual reflux was present in 21.4% cases and no residual thigh perforators were identified which is significant.

Table 4: Post Operative Complications

Complications	LSV ligation	Ligation+Stripping	P- Value
Hematoma	3(10.7%)	2(9.5%)	>0.05
Wound infection	3(10.7%)	2(9.5%)	>0.05
Bleeding	NIL	NIL	NIL
Nerve palsy	NIL	NIL	NIL
Limb Edema	NIL	1(4.56%)	<0.05

Hematoma and wound infection is not significant in group-L compared to group -LS .

Limb edema is significant in group-LS compared to group -L.

Discussion

Recurrence after varicose vein surgery is common in the range of 20-40%. Such massive rates of recurrence have been attributed to various factors. The present study is intended to assess the efficacy of stripping of the long saphenous vein in the prevention of recurrent varicosities after surgery for primary varicose veins involving the long saphenous vein. Out of 80 patients studied maximum number of patients are in the 40 – 50 year age group and 93.4% of cases are in the 20-50 year age group. The right limb was involved in 27 cases and left limb in 53 cases. This is because the left iliac vein joins the right iliac vein at right angles and being pressed constantly by loaded colon and the right and left common iliac arteries crossing over the left common iliac vein. Out of the 80 limbs involved 40 cases were managed by ligation of the sapheno femoral junction alone and 40 cases were managed by ligation combined with stripping of the long saphenous vein from groin to just below knee level. In the group that underwent ligation alone, thigh perforators were present in 62.5% cases whereas in the group that underwent ligation combined with stripping thigh perforators were present in 57.5 % of cases. After surgery residual long saphenous vein reflux was present in 37.5% cases in the group in which ligation alone was done and residual thigh perforators were identified in 33.3% of cases whereas in the group which underwent ligation combined with stripping of the thigh segment of long saphenous vein residual reflux was present in 21.4% cases and no residual thigh perforators were identified. The benefit of stripping the long saphenous vein from groin to upper calf probably derives from disconnection of mid-thigh

communicating veins. Zi-Yuan Zhao *et al*[5] showed that for patients with primary varicose veins foam sclerotherapy combined with high ligation and great saphenous vein stripping was less tissue trauma, blood loss, and duration of hospital stays and resulted in a better overall outcome compared to conventional surgery . Complications are inherent to any invasive technique and may occur following both surgical treatment and foam sclerotherapy. The complications observed in our patients treated surgically were similar to those reported in the published literature, but no severe complication occurred in the two groups. Suture dehiscence affected almost half of our patients in the surgery group, a finding that can be explained by the strictness adopted in the present analysis for the assessment of complications, especially those related with the healing of incisions [6] A previous study [7]has identified post-sclerotherapy thrombophlebitis and consequent hyperpigmentation as the most frequent complication associated with foam sclerotherapy. In an earlier publication, 20 cases of chemical thrombophlebitis were diagnosed, of which 15 required aspiration drainage ⁸; the remaining five cases improved spontaneously in 30 days, forming a fibrous cord. Present study post operative complications compared the incidence of hematoma and wound infection were the same in both the groups. There was no recorded case of intra operative bleeding or saphenous nerve palsy in both the groups. one case of limb edema was recorded in the group in whom the long saphenous vein was stripped. This was not due to deep vein thrombosis as ruled out by duplex ultra sound and was managed conservatively by crepe

bandage and limb elevation. The hospital stay of patients in the group in whom the long saphenous vein was stripped was 8.5 days mean, while that of patients in the ligation alone group was 7.0 days mean. A follow-up period of 3 months was selected because it has been showed that limbs without reflux in the residual part of long saphenous vein 3 months after surgery are more likely to be free from clinical recurrence at 21 months. The present study demonstrates that the results of surgery for primary varicose veins 3 months after surgery in the distribution of long saphenous vein are improved by addition of long saphenous vein stripping from groin to just below knee level to the standard operations of saphenofemoral ligation and multiple avulsions.

Conclusions

The incidence of residual long saphenous vein reflux is less after ligation and stripping of long saphenous vein compared to Ligation of Saphenofemoral junction alone. The incidence of residual perforator in the thigh is less after ligation and stripping of long saphenous vein compared to ligation Saphenofemoral junction alone. The incidence of Nerve palsy, bleeding and hematoma is not more in the ligation and stripping group compared to ligation alone group when the Long saphenous vein is stripped from groin to just below knee. There is a slight increase in the mean hospital stay in the group in ligation alone. Ligation with stripping for patients with varicosities of the lower extremity with a shorter surgical time, fewer bleeding, duration of hospital stays and residual perforator .

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Conflict of Interest: None

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