



Original Research Article

Study of Open Surgical Method and Radio Frequency Ablation of Varicose Vein Cases at Dhulikhel Hospital, a Tertiary Care Center of Rural Nepal

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ABSTRACT

Objective: To compare open surgical technique and radio frequency ablation for treatment of varicose vein.

Method: The cases subjected for stripping (Group A), junction/ perforator ligation without stripping (Group B), radiofrequency ablation (Group C) were compared in terms of time taken for pain free, ability to walk normally, hospital admission days, days taken to return to work, no of phlebectomy, presence of significant bruises. The collected data was analysed using SPSS version 13.0.

Results: There were total 102 cases of which 55 cases had undergone conventional open surgical method for varicose vein (stripping was performed in 31 cases and stripping was not performed in 24 cases) and remaining 47 cases had undergone radiofrequency ablation. Mean hospital admission in days were 3 in group A, 2.8 in group B and 1.8 in group C ($P < 0.01$). Regarding days taken for ability to walk normally, mean days were 5.88 in group A, 2.88 in group B, 1.1 in group C ($P < 0.01$). Regarding pain free status attained in days, it was 4.15 in group A, 2.36 in group B and 1.15 in group C ($P < 0.05$). Regarding days taken for return to work or other regular activities, it was 7.24, 5.45 and 3.12 days respectively ($P < 0.01$).

Conclusion: In comparison to stripping, radiofrequency ablation definitely has advantages in terms of hospital admission, lesser pain, earlier return to work, lesser bruise. These superiorities definitely warrant radiofrequency ablation as surgical treatment of choice for varicose vein.

Key words: Radio Frequency Ablation, Great Saphenous Vein, Varicose Vein, Stripping Surgery, Saphenofemoral junction

INTRODUCTION

Varicose veins, commonly seen in lower limb, are prominent dilated veins usually due to disease in the junction between superficial and deep venous system. This disease presents with unsightly appearance of vessels in limb, pain, itchiness, pigmentation and ulceration. Operative treatment of such condition significantly improves quality of life and

also demonstrably decreases the potential complications. ^[1,2] Although open surgical methods have long been used for treatment of varicose vein cases, currently minimal invasive approaches like radio frequency ablation have gained popularity.

Newer modalities of treatment for varicose vein such as radiofrequency ablation (RFA) have been made available in our country since 2013. Until some time

back, we had been doing conservative open surgeries involving one or more of saphenofemoral/popliteal junction ligation, segmental stripping, perforator ligation, multiple phlebectomy. We present the comparative outcome of stripping surgery for varicose vein and radio frequency ablation of varicose vein performed at Dhulikhel Hospital.

MATERIALS AND METHODS

All the cases posted for open surgeries for varicose vein at Dhulikhel Hospital during September 2012 – July 2013 were included in open surgical group. In open surgical group if both saphenofemoral junction ligation and stripping was done, they were categorized as group A. Stripping was done in case of diameter of Great Saphenous Vein (GSV) in mid thigh region more than 3mm and/or there is presence of incompetent perforators in thigh region. For other cases and for disease of short saphenous system, only junction ligation, perforator ligation and phlebectomy was done which ever were necessary. These cases were categorized into group B. Following availability of radiofrequency ablation for varicose vein from August 2013, such modality of treatment was started and all such cases from August 2013 – June 2014 were included in group C i.e. radio frequency ablation group unless they had contraindication of RFA. GSV diameter in thigh more than 10mm, presence of thrombus in GSV, patients suffering from arrhythmia and recurrent varicose vein were the contraindication of RFA. Radio frequency ablation was done using VNUS closure fast catheter (Covidien) with maximum temperature of 120C lasting for 20s. For junction and perforators, double RFA was done. After every treatment, 6.5 cm of catheter was withdrawn and one ablation length equaled 7cm.

These two groups were compared in terms of time taken for pain free status, ability to walk normally, hospital admission days, OT duration, no of phlebectomy, presence of significant bruises. For all cases, preoperative Doppler examination and marking of relevant structures were done. Saphenofemoral junction ligation was done in case of incompetent saphenofemoral junction. Saphenopopliteal junction was done in case of incompetence in saphenopopliteal junction. In case if incompetent perforator, perforator ligation was done by making incision directly over the perforator. For phlebectomy sites, sites with prominent vessels were chosen. If patients could walk unassisted for more than 20 meters, it was considered as ability to walk normally. Also, in patients on only oral analgesics, after waking if Visual Analogue Scale is less than 2, it was considered as pain free status. If the size of postoperative bruise (evaluated on day 1, and on subsequent follow ups) was more than 5*5cm² it was considered as significant bruise.

Statistical methods:

Statistical analysis was done in SPSS 13.0 software. Database management was done in Microsoft access.. Frequency analysis was performed for nominal variables. For scalar variables, descriptive analysis was performed with calculation of mean, range, standard deviation. ANOVA test was performed for comparing affect on surgical methods to scalar variables such as hospital admission days. The P value of less than 0.05 was considered significant.

RESULTS

There were total 102 cases of which 55 cases had undergone conventional open surgical method for varicose vein (stripping was performed in 31 cases and stripping was not performed in 24 cases) and remaining 47 cases had undergone radiofrequency

ablation. 55.41% of the patients were farmer, 17.57 were laborer, 9.46% were teacher, 8.11% were shopkeeper, 6.76% were house wife and 2.7% were military. 97.30% patients presented with prominent vein, 62.16% had pain, 48.65% had pigmentation, 27.03% had itchiness in the affected area and 6.76% patients had ulcers attributable to varicose vein.

Outcome measurements in three groups are shown in table 1.0. Mean hospital admission in days were 3 in group A, 2.8 in group B and 1.8 in group C (P<0.01). Regarding days taken for ability to walk normally, mean days were 5.88 in group A,

2.88 in group B, 1.1 in group C (P<0.01). Regarding pain free status attained in days, it was 4.15 in group A, 2.36 in group B and 1.15 in group C (P<0.05). Regarding days taken for return to work or other regular activities, it was 7.24, 5.45 and 3.12 days respectively (P<0.01). In group A mean no of phlebectomy required was 2.2, while that for group B and C were 2 and 1.7 respectively (not significant). Regarding presence of significant bruise, in group A it was present in 87.09% while that in group B was 29.16% and that in group C was 2.12% (P<0.01). None of the patient had recurrence during follow up.

Table 1.0 Table showing outcome measurement in three groups

	Group A (Stripping)	Group B (Junction / Perforator ligation)	Group C (Radiofrequency ablation)	P value (ANOVA)
Mean hospital admission days	3.0	2.8	1.8	<0.01
Days taked for ability to walk normally	5.88	2.88	1.1	<0.01
Pain free status attained days	4.15	2.36	1.15	<0.05
Days for return to work or other regular activities	7.24	5.45	3.12	<0.01
Mean no of phlebectomy	2.2	2	1.7	0.09
Presence of significant bruise (Percentage)	87.09	29.16	2.12	<0.01

DISCUSSION

Varicose vein is a major venous problem worldwide with incidence of about 5-30% in adult population. [3] Before the advent of minimal invasive treatments, open surgeries used to be treatment of varicose vein. In open surgery, dissection in the saphenofemoral junction via the inguinal incision with ligation of tributaries and flush ligation of great saphenous vein in combination with invaginated stripping of the great saphenous vein to just below knee region had been considered as good choice of open surgery for varicose vein. [4] In case of varicose vein due to only perforator incompetence, stripping is not required and even considered harmful by followers of CHIVA technique (Conservative Treatment

and Haemodynamics in Venous Insufficiency in Outpatient Departments). [5]

In our study, the common presenting symptoms are similar to what mentioned in review article by Michael Ombrellino et al. [6] In our study, total hospital admission days, pain free day attained and days in which patients were able to walk normally, days to return to work or regular activities were significantly lesser in patients who underwent RFA and in which stripping was not required compared to the group where stripping was performed. Of the three groups, these findings are best in RFA group. Studies comparing stripping vs endovenous treatment have shown this benefit of endovenous treatment. [7] Rass K. et al have revealed advantages concerning hemodynamics, recovery and cosmetic

outcome of endovenous treatment in comparison to stripping. [7]

CONCLUSION

Need of surgery for varicose vein without use of stripper might help in better patient comfort. Newer modalities of treatment like radiofrequency ablation for varicose vein definitely have such advantage. These superiorities definitely warrant radiofrequency ablation as surgical treatment of choice for varicose vein.

REFERENCES

1. Kurz X, Lamping DL, Kahn SR, et al. Do varicose veins affect quality of life? Results of an international population-based study. *J Vasc Surg.* 2001; 34:641–8.
2. Smith JJ, Garratt AM, Guest M, et al. Evaluating and improving health-related quality of life in patients with varicose veins. *J Vasc Surg.* 1999;30:710–9.
3. Hemmati H, Baghi I, Talaei Zadeh K, et al. Anatomical variations of the saphenofemoral junction in patients with varicose veins. *Acta Med Iran.* 2012;50(8):552-5.
4. Wigger P. Surgical therapy of primary varicose veins. *Schweiz Med Wochenschr.* 1998;128(45):1781-8.
5. Bellmunt-Montoya S, Escribano JM, Dilme J, Martinez-Zapata MJ. CHIVA method for the treatment of chronic venous insufficiency. *Cochrane Database Syst Rev.* 2013 Jul 3;7.
6. Michael Ombrellino, Lowell S. Kabnick. Varicose vein surgery. *Semin Intervent Radiol.* 2005; 22(3): 185–194.
7. Rass K, Frings N, Glowacki P, Hamsch C et al. Arch Dermatol. Comparable effectiveness of endovenous laser ablation and high ligation with stripping of the great saphenous vein: two-year results of a randomized clinical trial (RELACS study). *Archdermatol.* 2012 ;148(1):49-58.

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