



Original Work

A comparative study of conservative and surgical management of varicose veins with emphasis on complication and recurrence rate according to the treatment undergone by the patient in Mauritius

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ABSTRACT: The aim of this study was to determine the correlation between different complications of varicose veins and its rate of recurrence with the treatment undergone by the patient in short term. This study was reported for the first time from Republic of Mauritius. Over a year, a total of 25 patients with primary varicose veins were included, irrespective of type of treatment they underwent, with special emphasis on complication and recurrence rate of their treatment. In this study 52% of subjects were less than 60 years of age and the majority of them were male. The presence of diabetes mellitus and the occupation of the patients had no significant impact on their post-treatment prognosis. Out of 25 patients, 13 were treated surgically while 12 were treated conservatively. Nine patients in total developed some kind of complication on the post-treatment part. No recurrence was seen in post-surgical patients. This study definitely proved that the surgical treatment provides symptomatic relief and significant improvement in quality of life in patients referred to secondary care with uncomplicated varicose veins.

KEY WORDS: *Varicose veins; Conservative and surgical management; Complication; Recurrence rate*

INTRODUCTION

Varicose veins and their associated symptoms and complications constitute the most common chronic vascular disorder leading to surgical treatment. The term varicosity is generally applied to elongated, dilated, enlarged and tortuous veins which have lost their elasticity and are friable^{1,2}. They may occur anywhere in the body but are most commonly seen in the lower limbs.

The anatomy of the lower extremity venous system is complex and highly variable. Primary varicose veins are associated with several changes in vein wall architecture that may precede the development of reflux giving rise to several weak wall hypotheses. The manifestations of chronic venous diseases result from a complex interaction of

anatomy and hemodynamic failure. A thorough understanding of the mechanism of hemodynamic failure and the underlying anatomy is essential in deciding treatment of the patient with chronic venous disease.

Various modalities of treatment are available for varicose veins³.

Commonly used modalities of treatment in Jawaharlal Nehru Hospital, Rose Belle, Mauritius include conservative and surgical management. A common perception among the general population of Mauritius is that as long as the varicose veins do not give rise to any significant symptoms, there is no need for treatment. The cosmetic reason to obtain treatment for varicose veins is almost non-existent. Moreover, people still prefer to opt for conservative management to surgical management. So the objective of the study was to compare the conservative and surgical treatment of varicose veins with respect to complications and recurrence rate observed during respective management.

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METHODOLOGY

This was a prospective, qualitative and longitudinal study conducted on patients diagnosed with varicose veins at Jawaharlal Nehru Hospital (JNH), Rose Belle, Mauritius.

This study included patients who visited the outpatient department as well as patients who were admitted in JNH and were diagnosed with varicose veins between the months of October 2012 and October 2013.

The study protocol was approved by the research committee and ethics committee of the institution. All the patients were randomly assigned to conservative or surgical management with due regard to maintenance of proper standards of patient care. The post-operative course of management was documented in detail. Special emphasis was given to the follow-up visit of the patients who were asked to be present for review every two weeks so as to be vigilant regarding the occurrence of complications.

Inclusion criteria

- All patients with varicose veins having: Enlarged veins, Spider veins.

Exclusion criteria

- Patients with varicose veins as well as peripheral vascular disease (PVD).
- Patients having ulcerations in lower limbs due to varicose veins.
- Patients having thrombophlebitis.
- Patients already having deep vein thrombosis (DVT).
- Patients with bleeding disorder.
- Patients with widespread malignancy.
- Patients with uncontrolled diabetes mellitus.

Sampling method / Statistical Analysis

The data collected was analyzed using descriptive statistical principles (like mean, proportions and percentages) with SPSS 19 Package and Chi square test.

RESULT

Twenty five (25) patients with primary varicose veins who were treated at JNH, Rose Belle, Mauritius between the months of October 2012 and October 2013 were included in this study.

The age group of the patients ranged from 38 to 87 years. The commonest age group was from 50-69 years of age showing the maximum incidence. Out of 25 patients in the study, 9 patients were female while 16 were male.

The occupation of the patient and the presence of diabetes mellitus had no significant impact on the

outcome of the study. The number of patients in each group (conservative and surgical) is close to even, precluding any chance of treatment group bias in the results (**Table 1**).

Table 1. Age and Gender in 2 groups.

Study	Surgical	Conservative	P value (0.05)
Mean age	55.3 years	62.3 years	Not significant
Gender ratio (M:F)	8:4	8:5	Not significant

Out of 25 patients, 12 were treated surgically while 13 were treated conservatively. Nine patients in total developed some kind of complication in post treatment part. The commonest complications observed in these nine patients were haematoma and lipodermatosclerosis in three patients each. A single case of ulcer formation, recurrence of varicosity and wound infection were observed in each (**Table 2**).

Out of the nine patients who had developed some complications, four patients had undergone surgical management, while five patients had undergone conservative management (**Table 2**).

Table-2. Complication noted and according to treatment

Complications	No. of cases	Percentage	Surgical	Conservative
Hematoma	3	12	3	-
Ulcer formation	1	4	-	1
Delayed healing	0	0	-	-
Lipodermatosclerosis	3	12	-	3
Recurrence of varicosity	1	4	-	1
Wound infection	1	4	1	-

DISCUSSION

In our study, a total of 25 patients were included irrespective of the type of management they underwent, and these patients were diligently followed up for a period of two months.

The youngest patient in this study was 38 years and the oldest was 87 years. In previous studies^{4,5}, the age ranges were from the teens to the aged group. The major difference was seen in the minimum age of the patient, which in the present study was higher (**Table 3**).

In the present study the ratio of M: F was 4:3 that is for every 4 males, 3 females were affected by varicose veins. This is high compared to previous Western studies of Widmer⁶ with a ratio of 1:1 and that of Callum⁷ with a ratio of 1:2. The disparity between these studies can be explained by the fact that the majority of women from the geographic region presented in the study come from middle income or lower income classes and as such were

also less prone to look for treatment for cosmetic reasons.

Table – 3. Age range – Comparison

Study	Present study	Malhotra et al (4)	Wright et al (5)
Age range in years	38 – 87 years	18 – 65 years	20 – 75 years
Total no. of patients	25	677	1338

Comparison and analysis of the age and gender of patients in each of the two groups with the complication rates showed that there is no statistically significant finding (Table 1). The results were similar to those reported by Malhotra et al⁴.

Of the 25 patients, 12 patients underwent surgical management while 13 patients were candidates for conservative management, which were randomly chosen. No significant correlation was found between the type of management offered to the patient and the presence of complication (Table 4). However, 35.7% of patients offered conservative treatment options and 33.3% of patients offered surgical management showed the presence of complications.

Table – 4. Treatment group – Complication Cross tabulation

Treatment group	Complication		
	Yes	No	Total
Count	5	8	13
% within Conservative group	35.7%	64.3%	100%
% of Total	19.2%	34.6%	53.8%
Count	4	8	12
% within Surgery group	33.3%	66.7%	100%
% of Total	15.4%	30.8%	46.2%
Count	9	16	25
% within Treatment group	34.6%	65.4%	100%
% of Total	34.6%	65.4%	100%

Out of 12 patients who underwent surgical management, four patients developed complications among which three of the patients suffered from mild haematoma formation which were resolved with conservative management and no further involvement was necessary. One patient developed wound infection and needed further treatment with antibiotics and had delayed healing time. So 33% developed minor complications which were managed without any extra treatment. No major complications or recurrence of varicosity were seen. Studies of many others like Critchley G et al⁸ showed a rate of 17% for minor and 8% for major complications in post-surgical patients. While studies like Katsamouris et al⁹, showed 25% rate of recurrence of varicose veins post-surgically.

Comparing the above to our study, the recurrences were not seen in post-surgical patients. This was probably due to the fact that the follow-up period may not have been adequate to assess long term complications.

On the other hand, out of 13 patients who underwent various conservative management options, five developed complications. Out of these five patients, three (23%) developed lipodermatosclerosis but required no further intervention and were treated conservatively. One patient (~7%) developed skin changes and ulcer formation. The patient was treated conservatively with regular dressing which proved helpful. One patient (~7%) on the other hand developed an increase in the varicosity even after conservative management and was taken for a surgical intervention with removal of long saphenous vein on an emergency basis. There are no randomized clinical trials (RCT) showing that conservative treatment prevents the progression of venous disease but for the outcome of a trial conducted by S Shingler et al¹⁰ which showed less complications following conservative treatment, similar to the present study.

So, analysis of the treatment undergone by the patient with emphasis on the complication and recurrence rate showed that the patients undergoing surgical treatment had better prognosis than the patients undergoing conservative line of treatment. This result was in complete agreement with the study of Michaels et al¹¹ which concluded that patients of uncomplicated varicose veins undergoing surgical management had a definitely better prognosis than patients undergoing conservative treatment.

Comparing the surgically and the conservatively managed patients of this study, the complications of the surgical line of treatment were minor in nature and did not require any additional treatment and did not involve much additional discomfort to the patient. Also the rate of complications was relatively low when compared to other post-surgical studies^{8,9,11,12}. While for the patients treated with conservative methods, the complications were all based on the progression of the disease and one patient also had to be taken for surgical management based on the rapid progression of the disease. The complication rates, if compared with other studies^{10,11,13,14} are about the same, as expected.

Based on the results of the present study it is apparent that the surgical line of treatment is better than conservative management.

Limitations of this study: The limitations of this study were that long-term follow-up to check for other complications and the types of the conservative as well as surgical management offered to the patients were not carried out.

CONCLUSION

It is concluded that varicosity of the lower limb is a fairly common entity. The number of cases reporting to the hospital is much lower than the real incidence because, in the absence of symptoms, patients with varicose veins do not seek medical treatment in Mauritius. The commonest age group of patients suffering from varicose veins was from 50-69 years of age. The majority of the patients were male. The low incidence of female patients can be attributed to the fact that most of the women belonged to lower / middle income class and as such did not pay attention to the cosmetic reasons to undergo treatment. The rate of complications / recurrence over a 2 month period was less in the surgical group than in the group managed by conservative therapy. Hence, surgical therapy is better than conservative management.

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REFERENCES

1. Scurr JH, Coleridge-Smith PD. Venous disorders. In: Russel RCG, Williams NS and Bulstrode CJK. (Ed), Bailey and Love's Short Practice of Surgery, 23rd ed. Hodder Arnold: London. 2000:235-55.
2. Timothy KL, Gregory LM. Schwartz's principles of surgery, 9th edition, McGraw Hill publisher. 2009:777-801.
3. Pak LK et al. Veins and lymphatics. In: Way LW, Doherty GM. (Ed), Lange's Current Surgical Diagnosis and Treatment, 11th ed. McGraw Hill: New Delhi. 2003:871-87.
4. Malhotra SL. An Epidemiological Study of Varicose veins in Indian railroad workers from the South and North of India, with Special reference to the Causation and Prevention of varicose veins. *International Journal of Epidemiology*. 1972;1:177-83.
5. Wright et al. The prevalence of venous disease in a west London population. In: Davy A, Stemmer R. (Ed), *Phlebology*. 1989:176-8.
6. Widmer LK. Peripheral venous disorders prevalence and socio-medical importance. Bern: Hans Huber. 1978:1-90.
7. Callum MJ. Epidemiology of varicose veins. *BJS*. 1994;81(2):167-73.
8. Critchley G et al. Complications of varicose vein surgery. *Ann Roy Col Surg*. 1997;79(2): 105-10.
9. Katsamouris AN, et al. Recurrent Varicose veins after surgery: A new appraisal of a common and complex problem in vascular surgery. *European journal of vascular and Endovascular surgery*. 2004;27(3):275-82.
10. Shingler S, et al. Compression stockings for the initial treatment of varicose veins in patients without venous ulceration. *Cochrane Database Syst Rev*. 2011 (11) CD008819 Epub.
11. Michaels JA, et al. Randomized clinical trial comparing surgery with conservative treatment for uncomplicated varicose veins. *BJS*. 2000; 175-81.
12. Nagaraj H, et al. Prospective clinical study of surgical management of varicose veins of lower limb and its complications. *International Journal of Research in Medical Sciences*. 2014;2(1):306-9.
13. William WH, Leonard KS. Management of varicose veins of the lower extremities. *Annals of Surgery*. 1941;114(6):1042-9.
14. Murad A, Sirunya S. Procedures in Cosmetic Dermatology Series: Treatment of Leg Veins. Elsevier Health Sciences; 2010:63-96.