Original Research Article

A comparative study of open surgery with venous stripping and radiofrequency ablation (RFA) of varicose veins

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Abstract

Background: This study compared open surgery with venous stripping and radiofrequency ablation (RFA) of varicose veins.**Materials & Methods:** This study was conducted on 68 patients which were divided into 2 groups of 34 each. Group I patients underwent open surgery with venous strippingand group II patients underwent radiofrequency ablation (RFA). **Results:** There were 20 males and 14 females in group I and 18 males and 16 females in group II. The mean duration of surgery in group I was 55.4 minutes and in group II was 16.2 minutes. Hospital stay was 4.6 days in group I and 1.2 days in group II. The difference was significant (P< 0.05). Common complications were bleeding seen 8 in group I and 1 in group II, hematoma seen 5 in group I and 1 in group II and inflammation seen 32 in group I and 2 in group II. The difference was significant (P< 0.05).**Conclusion:** Authors found that conservative management with radiofrequency ablation (RFA) found to be better as compared to open surgery with venous stripping.

Key words: Radiofrequency ablation, Venous stripping, Varicose vein

Introduction

Varicose veins and their related manifestations and intricacies comprise the most widely recognized constant vascular problem prompting careful treatment. The term varicosity is commonly applied to prolonged, expanded, broadened and convoluted veins which have lost their flexibility and are friable. They may happen anyplace in the body yet are most regularly found in the lower appendages[1]. Despite the fact that not a deadly sickness the dismalness brought about by this ailment is more. The treatment alternative ought to be individualized dependent on their overall condition and symptomatology of the patient[2]. In venous framework correspondence between the shallow and profound venous framework is accomplished through perforators. Successful venous drainage is kept up due to the unidirectional progression of blood, by methods for valves.

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Any pathology making these valves not work appropriately may prompt arrangement of varicose veins[3]. A typical discernment among everybody of Mauritius is that as long as the varicose veins don't offer ascent to any noteworthy indications, there is no requirement for treatment. The restorative motivation to get treatment for varicose veins is nearly nonexistent[4]. Moreover, individuals actually like to decide on moderate administration to careful administration. As the malady advances there is requirement for intrusive strategies, which incorporate sclerotherapy, medical procedures like Trendelenburg's technique, SPJ ligation, GSV stripping, perforator ligation, cut separation and sub facial endoscopic perforator medical procedure. Endovenous warm removal procedures are giving an extraordinary option in contrast to medical procedure as they accomplish comparable outcomes with least affron[5].This study compared open surgery with venous stripping and radiofrequency ablation (RFA) of varicose veins.

Materials & Methods

This prospective study was conducted on 68 patients in the department of general surgery on both genders.

Ethical clearance was taken from institutional ethical committee. All were informed regarding the study and written consent was obtained. General information such as name, age, gender etc was recorded. Patients were divided into 2 groups of 34 each. Group I patients underwent open surgery with venous strippingand group II patients underwent radiofrequency ablation (RFA). Parameters such as bleeding, hematoma, blood requirement, postoperative inflammation and hospital stay were compared. All patients were followed up for 1 year. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

Table 1:Distribution of patients

Groups	Group I (34)	Group II 34)
Method	Open surgery with venous stripping	Radiofrequency ablation (RA)
Male: Female	20:14	18:16

Table I shows that there were 20 males and 14 females in group I and 18 males and 16 females in group II.

Table 2:Comparison of parameters

Groups	Group I (34)	Group II (34)	P value
Duration of surgery (minutes)	55.4	16.2	0.01
Blood requirement	1	0	0.02
Hospital stay (Days)	4.6	1.2	0.05

Table 2, Fig 1 shows that mean duration of surgery in group I was 55.4 minutes and in group II was 16.2 minutes. Hospital stay was 4.6 days in group I and 1.2 days in group II. The difference was significant (P< 0.05).

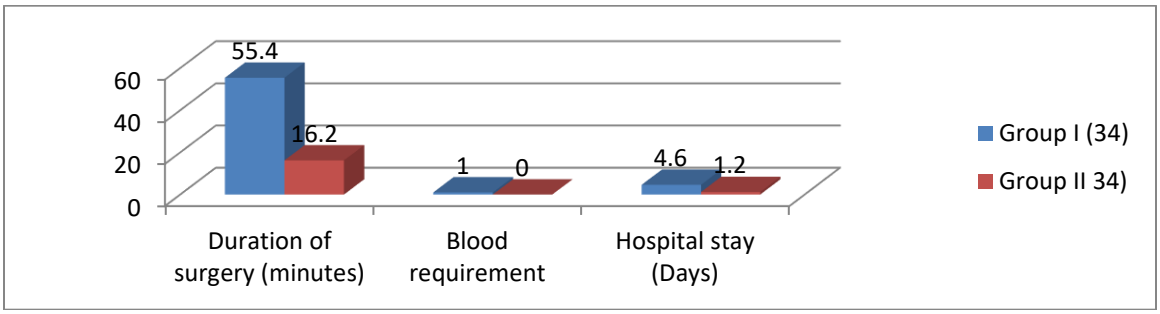

Fig 1:Comparison of parameters

Table 3:Complications

Complications	Group I	Group II	P value
Bleeding	8	1	0.02
Hematoma	5	1	0.05
Inflammation	32	2	0.001

Table 3, graph 2 shows that common complications were bleeding seen 8 in group I and 1 in group II, hematoma seen 5 in group I and 1 in group II and inflammation seen 32 in group I and 2 in group II. The difference was significant (P< 0.05).

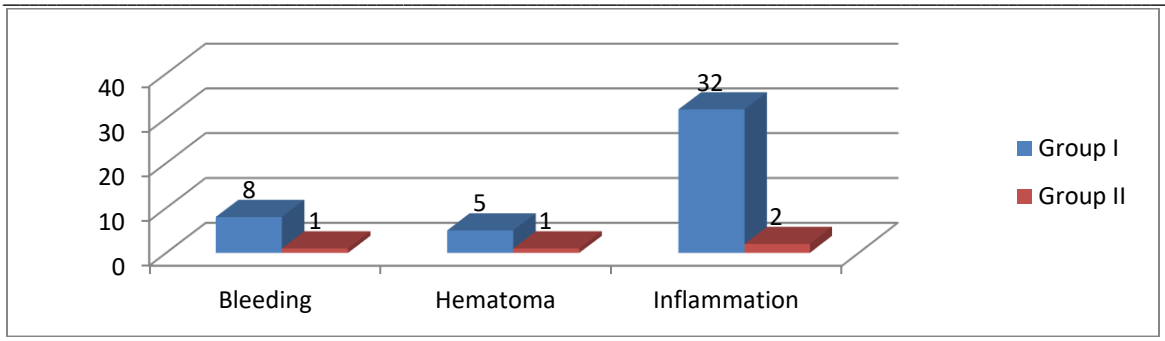

Fig 2:Complications

Discussion

There is no universally accepted definition for varicose veins. In Latin varix refers to enlarged vein, artery or lymphatics[6]. In routine usage the word varix is used to mention vein and varicosity refers to a vein that is enlarged in diameter and tortuous. Varicose veins are superficial veins of the lower limb that has lost its valvular function and as a result of resulting venous hypertension becomes dilated, thickened and tortuous[7]. There are hardly any confirmations supporting the inherited idea of the infection. The kids with the two guardians being influenced with varicose veins have two overlap possibility of getting the ailment. The occurrence of varicose veins increments with increment in age. Plainly females are more inclined for varicosities than males.8 When the profound vein is impeded the blood is occupied into the shallow framework causing reformist dilatation, protracting and harm to the valves bringing about varicosity. Different elements which add to varicosities are drawn out standing, tallness, race, occupation, gut propensities, stomach mass packing upon the veins, innate shortcoming of vessel divider and inborn nonappearance of valves[9].This study compared open surgery with venous stripping and radiofrequency ablation (RFA) of varicose veins.In this study there were 68 patients divided into 2 groups of 34 each. Group I patients underwent open surgery with venous stripping and group II patients underwent radiofrequency ablation (RFA). RFA device has bipolar RFA probe in which both the electrodes are in same probe with an insulator between the electrodes and radiofrequency generator unit. In bipolar RFA catheter-based approach, generator delivers energy to the vein wall creating conductive heating that contracts the vein wall causing shortening of collagen fibrils, destruction of endothelium and venous lumen shrinkage fibrotically shrinking the vein[10].Brittenden et al undertook study in which patients were divided into 2 groups: group I included those who underwent open surgical to treatment with venous stripping[11]. Group II (n=104) included those who subjected to radiofrequency ablation (RFA). Majority of our patients belongs to age group 20-40 years with mean age of 35 years in both groups. Male has dominance over female with male to female ratio 4:1. Author noticed significant complication in group I than group II, such as bleeding (20:1), hematoma (5:0), inflammation (60:1) and blood requirement (1:0). In group II, we noticed early mobilization of patient (1day v/s 3 days), discharge from hospital (1day v/s 5 days) and resuming duties (5 days v/s 2 weeks).We found that mean duration of surgery in group I was 55.4 minutes and in group II was 16.2 minutes. Hospital stay was 4.6 days in group I and 1.2 days in group II. The common complications were bleeding seen 8 in group I and 1 in group II, hematoma seen 5 in group I and 1 in group II and inflammation seen 32 in group I and 2 in group II. Michaels et al concluded that patients of uncomplicated varicose veins undergoing surgical management had a definitely better prognosis than patients undergoing conservative treatment[12].

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.The shortcoming of the study is small sample size and short follow up.

Conclusion

Authors found that conservative management with radiofrequency ablation (RFA) found to be better as compared to open surgery with venous stripping.

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