Original Article

Varicose Veins

Treatment and Incidence of Recurrence of Varicose Veins of Lower Limbs

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ABSTRACT

Objective: To study the presentation of varicose veins of lower limbs, treatment in our patients; and to see the causes of recurrent varicose veins at Islam Medical College, Sialkot, Pakistan.

Study Design: Observational and descriptive study.

Place and Duration of Study: This study was carried out at the Department of Surgery, Combined Military Hospital, Sialkot; from June 2007 to August 2010.Department of Surgery, & Islam Teaching Hospital, Sialkot from September 2010 to September 2013.

Materials and Methods: Adult patients referred by general practitioners with varicose veins of lower limb were included in the study. Data of sixty seven patients with varicose veins of lower limb was collected from June 2007 to September 2013. Patients were distributed in four groups depending upon the surgical procedures carried out. Full detailed history, examination, and investigations were done. Results of treatment were assessed by regular follow up. Data of only those patients was included who could complete follow up for at least 6 months.

Results: Out of 67 patients included in our study, 25 cases were having recurrence; 8(32%) was recurrent cases from pervious surgeries from somewhere else and 17(68%) cases were diagnosed with recurrence after surgery at our hospitals. So, the incidence of recurrence in our cases exclusive remained to be 29%.

Failure or recurrence in "Ligation" only was 38.5%, in ligation and reverse stripping was 30.7%, stab avulsions was 44.44% and in patients who underwent ligation, reverse stripping and stab avulsions was 12.5% after follow up of minimum 6 months. The patients are still on followup and the percentages are likely to increase with time as varicosities could be obvious.

The anomalous double great saphenous veins, neovascularisation or missed tributaries of great saphenous vein during surgery and deep venous thrombosis before and after surgery were the most observed finding of recurrence. The recurrence of varicose veins was more in leg only as compared to both leg and thigh.

Conclusion: Saphenofemoral ligation with below knee stripping and stab avulsions combined has the least frequency of recurrence, while Trendlenberg operation alone has the highest.

Key Words: Causes, Patterns, Recurrence, Varicose veins, stab avulsions and stripping

INTRODUCTION

Varicose veins are not only a cosmetic problem: they can lead to complications that result in lost time from work and lost wages. Treatment has improved with the use of minimally invasive techniques that reduce recovery time and complications, considering that the problem affects 10% to 20% of adult men and 25% to 33% of adult women[6].

Saphenofemoral junction was the most common site of reflux in the varicose veins. As colour duplex scan is non-invasive, repeatable, and readily accepted by the patients, it should be the investigation of choice for patients presenting with varicose veins.

Treatment is based on different indications: etiological, clinical and diagnostic. The treatments include: conservative therapy, sclerotherapy, phlebectomy, endovenous laser therapy, radiofrequency ablation, and surgery involving saphenous ligation and stripping[7].

Short-term advantages appeared to be associated with sclerotherapy and endovenous treatments, and long-term effectiveness was more evident after surgical intervention. Evidence suggests conservative therapy is less effective than sclerotherapy and surgery for the treatment of varicose veins. Ligation with stripping plus phlebectomy is generally regarded as the "gold standard" for treating primary long saphenous veins[8]. Surgery is a reasonably definitive therapy of primary varices, but secondary varices usually require rest, elevation and elastic support[9].

Sclerotherapy has been shown to be an effective and increasingly popular therapeutic strategy for the treatment of varicose veins. However, recent reports of serious side effects, including cerebrovascular accidents (CVA) and transient ischemic attacks (TIA), as well as speech and visual disturbances, have caused serious concern regarding its use[10]. Superficial venous insufficiency is a common problem associated with varicose veins. Endovenous laser ablation (EVLA) and concomitant ultrasound (US)-guided foam sclerotherapy are recent treatment methods alternative to surgery in the treatment of superficial venous insufficiency[11,12].

Varicose vein surgery is characterized by high recurrence rate of 60% after 5 years of follow-up observation, and this is a disappointing finding, both for

the patient and surgeon. A prospective study was conducted to evaluate and determine the effectiveness of different modalities of treatment of varicose veins of lower limb and to establish the cause of recurrence[13,14,15].

MATERIALS AND METHODS

After approval of hospital ethical committee, this prospective observational study was carried out in the Department of surgery, Islam Teaching Hospital, affiliated to Islam Medical College, Pasrur road, Sialkot. All the cases operated in Department of Surgery, Combined Military Hospital, Sialkot; from June 2007 to August 2010.Department of Surgery, & Islam Teaching Hospital, affiliated to Islam Medical College, Pasrur road, Sialkot, Pakistan: from September 2010 to September 2013 were included. In the study, sixty seven patients undergoing treatment for varied indications in general as well as regional anesthesia were serially included. The patient's age group was between 23-58 years and belonged to American Society of Anaesthesiologists' (ASA) physical status class 1-3 patients. All the patients were examined clinically and venous Doppler study was a must for checking and marking of incompetent perforators, incompetence of saphenofemoral junction and to rule out deep venous thrombosis.

Ligation of saphenofemoral junction mostly "flush ligation" and a few high ligation in obese patients was carried in patients who had proven incompetent SFJ but had not much prominent varicosities in legs and thighs. Thirteen patients under went this treatment.

Ligation of SFJ and reverse stripping of the great saphenous vein and stab avulsions combined was the most commonly performed procedure i.e. 32 patients. These patients had proven incompetent SFJ along with prominent varicosities in the legs and thigh as well.

The patients were distributed in four groups. In group – I, "Ligation" thirteen were operated and only the saphenofemoral junction was ligated. In group – II, "ligation and reverse stipping" thirteen patients were included, the saphenofemoral junction was ligated as well as reverse stripping of great saphenous vein was performed. In group – III, "stab avulsion" of prominent varicose veins was carried and nine patients were included. In group – IV, the patients with definite saphenofemoral junction incompetence and prominent varicose veins as well as incompetent perforators were treated by saphenofemoral junction ligation, reverse stripping and stab avulsions; in this group thirty two patients were included. The standard preoperative assessment was done in all the patients. The regional and general anaesthesia was also done under standard protocols. The surgical aseptic technique including antibiotic prophylaxis remained same for all the patients. The post-operative course was similar; all the patients were admitted for at least 3 days and dressings changed on 3rd post-operative day before being discharged from the hospital. The follow-up in outpatient was done on 8-10th day including assessment for removal of stitches. Minimum follow-up of 6 months was made mandatory for inclusion in the study and complications were recorded. In recurrent varicose veins, Doppler studies and venography were conducted to establish the cause of recurrence. Patients with cardiovascular diseases and ASA-IV were excluded from the study. Patients with recurrent varicose veins operated elsewhere and not clear about the method of treatment already done were also not included.

Data was compared and analyzed by SPSS version 17. Mean ± S.D was calculated for quantitative variables, age etc. Frequencies and percentages were presented for qualitative variables e.g. gender and other variables used in the study.

RESULTS

Patients having varicose veins of the lower limb were included serially presenting to surgical outpatients department. Patients with cardiovascular diseases and ASA-IV were excluded from the study. Generally, the patients were between 30 to 45 years age group with a range of 23 - 58 years (median of 34.45 years). Table I show the overall data of all the cases. The overall data shows the co morbid conditions as well as the surgical procedures carried out.

Table No.I: General data all cases. n=67

Age	23-58 (34.45)
Sex	M : F 39:28 (58.2:41.8%)
Smoking	21 (31.3%)
Obesity	19 (28.4%)
Blood transfusion	2 (3%)
Anaemia	11 (16.4%)
Diabetes	18 (26.9%)
Hepatitis B status	13 (19.4%)
Hepatitis C status	16 (23.9%)

Table No.2: Presentation of varicose veins of lower limb

Cosmetic concerns	14 (20.8%)
Aches and pains	31 (46.3%)
Discolouration of skin	8 (11.9%)
Leg ulcers	4 (6%)
Recurrent varicose veins after previous surgery	8 (12%)
Haemorrhage	1 (1.5%)
Phlebitis	0 (0%)
Eczema	1 (1.5%)
Calcification	0 (0%)
Periostitis	0 (0%)

Patients presentations were not much different and usual complaints of pain and discomfort and cosmetic reasons and discolouration of skin around ankles especially in ladies were the leading presenting reasons. Recurrent varicose veins after previous surgery and nonhealing ulcers were the commonest complaints. Haemorrhage from the varicosities and eczema was also encountered. Table II show its detail.

Table No.3: Complications (n=67)

Bleeding	2 (3%)
Wound infection	3 (6%)
Reccurence	17 (25.37%)
Seroma formation	3 (4.5%)
Deep venous thrombosis	1 (1.5%)
Reoperation	9 (13.43%)
Mortality	0 (%)

Table No.4: Outcome of treatment

Procedure	no	satisfactory	Failure/ recurrence
Group I – Ligation	13 (19.4%)	8(61.5%)	5(38.4%)
Group II – ligation and reverse stripping	13 (19.4%)	9(69.2%)	4(30.7%)
Group III- stab avulsions	9 (13.4%)	5(55.55%)	4(44.44%)
Group IV- ligation, reverse stripping and stab avulsions	32 (47.7%)	28(87.5%)	4(12.5%)
Total	67 (100%)	50(74.6%)	17(25.37%)

Table No.5: Recurrent cases

	no	Accessory great saphenous veins	Missed tributaries in high ligation of SFJ	Post operative Deep venous thrombosis
Recurrent varicose veins after previous surgery (n= 8)	8 (32%)	5 (62.5%)	2(25%)	1(12.5%)
Reccurence in our patients(n=59)	17 (68%)	12 (70.58%)	4(23.5%)	1(5.8%)
Total	25	17 (68%)	6(24%)	2(8%)

Overall out of 67 patients included in our study, 25 cases were having recurrence; 8(32%) was recurrent cases from previos surgeries from somewhere else and 17(68%) cases were diagnosed with recurrence after surgery at our hospitals. So, the incidence of recurrence in our cases exclusive remained to be 29%.

Failure or recurrence in "Ligation" only was 38.5%, in ligation and reverse stripping was 30.7%, stab avulsios was 44.44% and in patients who underwent ligation, reverse stripping and stab avulsions was 12.5% after follow up of minimum 6 months. The patients are still on follow up and the percentages are likely to increase with time as varicosities could be obvious.

DISCUSSION

In patients who presented with recurrent varicose veins and unsatisfied with the previous surgeries; Doppler study of the veins were carried. Six of them showed accessory great saphenous veins which then stripped off. Rest the patients were managed by stab avulsions.

Maximum indication of surgery came out to be aches and pains explained by the patients. Most of them claimed to be cured while 3 patients still are on the follow up for no improvement.

Four patients with leg ulcers presented with long history of treatment from general practitioners and skin specialists. These had Ulceration i.e. Marjolin's ulcer. All these patients were having ulcers on medial aspect of legs just above the medial malleoli. These patients having associated varicose veins were investigated and after correction of varicose veins had excellent healing in three to four weeks time.

The patients presenting with pigmentation of legs i.e. 8 and one with proven infection i.e eczema ; presented due to cosmetic concerns . These were all female patients and had history of treatment from different physicians. They were all cured of their symptoms after the treatment of underlying varicose veins.

Overall recurrence was encountered in seventeen of our cases i.e. 29% which is comparable to the study of Gad MA[16] having a recurrence rate of 32.6% after saphenofemoral disconnection i.e. Trendelnberg operation, 23.9% had recurrence after Saphenofemoral disconnection, with stripping below knee , 30.4% had recurrence after saphenofemoral disconnection with stripping above knee and13.1% had recurrence after Sapheno-popliteal disconnection with stripping. This rate is likely to increase as the time passes and more follow up is done.

In the study by Corrales NE [17], there was evidence of duplication of the LSV (long saphenous vein) in 50 (49 per cent) of the 103 saphenograms; we encountered duplication of great saphenous vein in 17 i.e. 68% of cases in which recurrence was found. On follow up duplex scan and venography showed presence of accessory great saphenous vein in 12 and residual tributaries in 4 patients while deep venous thrombosis encountered in one patient. Nine patients with recurrence have to be re-operated to achieve cure; while

8 patients with recurrence after completing a follow up of 9 - 12 months were offered surgery but they opted further treatment elsewhere. The cases who had presented with recurrence after surgery from other hospitals; were investigated and revealed presence of accessory great saphenous veins in 5 patients, 2 had missed tributaries of great saphenous vein and 1 had deep venous thrombosis.

We encountered haemorrhage in two patients and on follow up it was revealed that one had smaller arteriovenous malformation associated with the perforators in the leg. The second patient in which haemorrhage was encountered had history of hepatitis and inspite of normal liver profile including prothrombin time, the bleeding was profuse and required transfusion of fresh blood as well as fresh frozen plasma.

Wound infection at the site of groin surgical site was noticed in 2 patients in ladies with more than average weight i.e obesity; one patient who was emaciated and chronic smoker had superficial infection at the site of stab avulsions.

Seroma formation occurred in 3 patients and was managed conservatively. We had no case of postoperative deep venous thrombosis or mortality. Two cases of recurrence after saphenofemoral junction ligation were investigated and postoperative Doppler study showed that one who had high ligation had a duplication of great saphenous vein and had to be re-operated. One patient with recurrence and had reverse stripping and prominent residual tributaries and was redone.

CONCLUSION

The indications for surgery in varicose veins of lower limb are in evolution. The recurrence after surgery is due to missed tributaries and presence of accessory great saphenous which can be missed during high ligation and reverse stipping respectively. It is very important to use a duplex scan before the treatment and venography especially in recurrent cases to establish the cause. Recurrence is encountered even in patients undergoing ligation, reverse stripping and stab avulsions as combined surgery.

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