Thigh Saphenectomy is Not a Necessary Adjunct to High Ligation and Stab Avulsion Phlebectomy for Varicose Veins - Jinnah Hospital Experience

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Venous ulcerations result from isolated superficial venous incompetence in upto 60% of cases. The principle behind the treatment of venous ulceration is to reduce venous hypertension and new therapeutic modalities have resulted in a paradigm shift in the approach to the management of varicose veins. High ligation of long saphenous vein with or without stab avulsion phlebectomy has become a commonly performed procedure for varicose veins. However, the need for concomitant stripping of thigh saphenous vein remains controversial. In the present study 26 patients with duplex scan – confirmed varicose veins underwent various surgical procedures: 21(80.7%) had high ligation and phlebectomy, 4(15.3%) had high tie, phlebectomy and thigh saphenectomy while 1(3.9%) had high tie alone. Leg ulcers in 10(38.4%) patients were dressed with a simple non – adherent dressing. Median age was 37 years and most common presenting feature was leg pain encountered in 19(73%) patients. All venous ulcers followed up in outpatient clinic healed at a median of ten weeks while two (7.9%) cases developed debilitating saphenous phlebitis in the immediate post operative period. This study concludes that thigh saphenectomy is only required when patients are severely symptomatic of advanced stasis changes.
Key words: Varicose veins, Thigh saphenectomy, Venous ulcers.

Venous reflux is the primary cause of chronic venous ulceration [1] whereas venous outflow obstruction is a factor in 5–12 percent of cases[2,3,4]. The role of surgical correction of saphenous vein reflux as a therapeutic manoeuvre in the treatment of venous ulceration has undergone tremendous modifications [5]. The search of definite therapy for chronic venous ulcers lead Linton[6], in 1938 to report on direct ligation of incompetent perforating veins. However, this direct approach has significant complication rates owing to poor healing of incisions made in areas of diseased skin[7]. Controversy still exists as to whether the thigh saphenous vein should be stripped concomitant with high ligation and stab avulsion phlebectomy[8]. Proponents of thigh saphenectomy contend that there will be fewer recurrences and improved hemodynamic and cosmetic results if thigh saphenectomy is added to high ligation and phlebectomy[9,10,11,12]. The hemodynamic changes with venous reflux demonstrable by duplex ultrasound scan suggest that saphenous vein stripping is unnecessary to achieve ulcer healing and improved venous function if deep veins are normal[13]. There is no detrimental hemodynamic effect of leaving a refluxing long saphenous vein remnant behind. However, in younger patients with venous ulcerations and isolated saphenous reflux, high tie and stripping under general anaesthesia is the preferred option[14]. Another improved understanding of the calf muscle pump, vein valve function, vein perforators and pathophysiological flow has led to various emerging means of treating patients with chronic venous hypertension[15].

This prospective study is an attempt to define an approach that will allow sparing the saphenous vein except in cases where we predict that adding thigh saphenectomy may help improve hemodynamics or obviate painful saphenous thrombophlebitis. Present study also suggests that in patient with venous ulcerations and superficial vein incompetence, superficial venous surgery can produce ulcer healing in the majority of patients without the need for perforator surgery, postoperative compression bandage or skin grafting.

Materials and Methods

The prospective study population comprised 26 patients with varicose veins admitted through surgical outpatients of Jinnah Hospital, Lahore over a period of two years from May98 to May2000. Parameters considered were age, sex, leg pain or discomfort, venous claudication, edema, active venous ulceration, history of venous ulceration and cosmesis. Key points in history included previous deep vein thrombosis, venous surgery, hypercoagulable state, severity of pain and venous claudication. Clinically, the extent of edema, pigmentation, lipodermatosclerosis and salient features of any active ulcers were recorded. In addition to the clinical evaluation, preoperative confirmation of saphenofemoral reflux (retrograde flow lasting > 1 second) and the extent of venous disease was performed with duplex ultrasonography. Special attention was given to delineate whether the saphenous itself contained any visible or duplex evident varicosities. Patient with deep vein insufficiency or saphenopopliteal incompetence were excluded from this study. 16 surgical procedures were performed under local anaesthesia, 6 under general anaesthesia and 4 under spinal anaesthesia. During high ligation, long saphenous vein was flush ligated at saphenofemoral junction and all tributaries were scrupulously ligated and divided. Stab avulsion phlebectomy was performed carefully so as not to encroach on the main saphenous channel. Thigh

saphenectomy was added in patients with visible and/or duplex scan– confirmed varicosities of thigh saphenous itself or severely symptomatic cases. Phlebectomy stab wounds were approximated with steri-strips and thigh-high tubigrip was applied for a week. Ulcers were dressed with a simple non-adherent dressing. The short saphenous vein was never stripped and no leg had any perforator surgery performed. Healing of ulcer was determined by inspection and deemed to be completed if full re-epithelization had occurred. All patients were reviewed in outpatient clinic 6 weeks after discharge and every 8 weeks thereafter until complete ulcer healing had taken place.

Results

This study group had 20 male and 6 female patients with a median age of (range 19–55) 37 years. Leg pain was the commonest presenting feature found in 19(73%) patients followed by edema in 13(50%) cases (table I).

Table I Clinical features of varicose veins n =26

Clinical Features	n=	%age
Leg Pain	19	73.0
Edema	13	50.0
Venous Claudication	11	42.3
Venous Ulceration	10	38.4
Pigmentation	5	19.2
Lipodermatosclerosis	1	3.8

Various surgical procedures employed for varicose veins and associated affections are summarized in table II.

Table II Surgical procedures employed for varicose veins.n = 26

Surgical Procedure	n =	%age
High ligation and phlebectomy	21	80.7
High ligation, phlebectomy and thigh saphenectomy	4	15..3
High ligation alone	1	3.9

Two (7.6%) patients had debilitating saphenous phlebitis which was painful and prolonged the recuperation from the procedure. Complications of varicose vein surgery encountered in this study are shown in table III.

Table III Complications of varicose vein surgery. n = 26

Complications	n =	%age
Saphenous thrombo-Phlebitis	2	7.6
Groin wound infection	2	7.6
Iatrogenic femoral vein Injury	1	3.8
Secondary hemorrhage from Phlebectomy wound	1	3.8

All patients, except those who developed saphenous phlebitis were fully ambulant and returned to normal function within 5-7 days of treatment. 2 out of 10 patients with leg ulcers were lost in follow-up. All the remaining 8 leg ulcers began to heal with 4 weeks of surgery and all healed completely at a median of ten weeks. Despite attention to meticulous dissection and ligation, one patient who underwent saphenofemoral disconnection and phlebectomy showed evidence of persistent saphenofemoral reflux. Repeat duplex scan failed to confirm that we had even ligated the saphenous vein at all. Recurrent varicosities have not developed in that patient with ongoing reflux as he is being closely followed-up in outpatient clinic.

Discussion

Although the role of superficial venous surgery in patients with venous ulceration and a combination of superficial and deep venous reflux is controversial[16,17,18], there is a developing consensus that superficial vein surgery is important in legs with superficial vein reflux and normal deep veins[19-21]. Davies et al have concluded that outcome in terms of patient satisfaction following varicose veins surgery is not guaranteed despite the fact that it is perceived as a relatively straightforward procedure[22]. Foregoing in view, all patients with chronic venous disease ideally should undergo an initial duplex scan of the venous system to minimize the recurrent rate[23]. Present study accords with this and other[24] publications as all 26 patients had preoperative duplex ultrasonography for venous disease evaluation. Duplex scan can assess individual vein valve and has advantage over descending venography which underestimates reflux[25,26]. This study reveals leg pain as the most common (73%) presenting feature of venous hypertension, which is in agreement with other[27] studies, which have reflected that 79 percent of patients had the same complaint. As outlined in table II, 21 (80.7%) legs underwent high ligation with phlebectomy and in 4(15.3%) legs additional thigh saphenectomy was performed. Of the later four patients, two had duplex – evident varicose saphenous veins of thigh and other two cases had severely symptomatic venous disease in younger age group. Munn et al[28] have reported that saphenectomy may be associated with saphenous neuropathy, poor cosmetic results and longer convalescence after surgery. The need for deeper anaesthesia and prolongation of operation time may also increase the cost of the procedure. Proponents of thigh saphenectomy suggest that recurrence will be more common unless thigh saphenous is removed. They also propose that ligated saphenous vein often thrombose essentially nullifying the main reason for leaving it in place as a potential arterial conduit[8]. In the present study saphenectomy was confined to knee level to avoid inadvertent saphenous nerve damage. Holme et al[29] and others[30] have also shown that limiting saphenectomy to thigh will seldom result in injury to nerve. Hammarsten et al[31] have documented a recurrence rate of 12% at 52 months for high ligation and phlebectomy in comparison with 11% for full stripping after the same time period. The concept of minimally invasive approach to the treatment of chronic venous disease is emerging as a reliable technique of ablating incompetent veins while avoiding the morbidity of a direct approach[7]. This involves Subfacial Endoscopic

Perforator Surgery (SEPS) by approaching the veins from a remote site using shearing instrumen[32]. Bergan[33] has also reaffirmed the doubly deleterious impact of venous perforators in the pathological state thus further augmenting the need of SEPS. When superficial reflux is present, their normal function serves to overload and stretch the deep veins ; when their check valve fails, they are frequently associated with the severe cutaneous changes of chronic venous insufficiency. Present study has examined the efficacy of saphenofemoral disconnection with phlebectomy and thigh saphenectomy being added in certain specific conditions. The data presented here is drawn from a small number of patients ; the durability and effect on ulcer recurrence rates need further evaluation.

To conclude, high ligation and phlebotomy is a safe and effective procedure for the eradication of varicose veins usually attended by gratifying results. Our experience with thigh saphenectomy is too limited to document its place in varicose vein surgery and this aspect needs further substantiation. However, this study suggests that thigh saphenectomy is only required when visible duplex scan-confirmed varices of the thigh saphenous itself or in patients who are severely symptomatic of advanced venous stasis changes.

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