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Original Article

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Management of Saphenofemoral Junction (SFJ) Incompetence in Varicose Veins: Simple High Ligation with and Without Stripping

Dr Prajwal Shastry[1]; Dr Aravind Naik[2]; Dr Kaushal Shetty[1]; Dr Siddarth Hegde[1]; Dr Shazia Shaik[1]

[1] Post Graduate, Department of General Surgery, Srinivas Institute of Medical Sciences and Research Centre

[2] Professor, Professor, Department of General Surgery, Srinivas Institute of Medical Sciences and Research Centre

ABSTRACT

Background: The proper procedure of high saphenofemoral ligation, which requires methodically finding, ligating, and dividing all of the Long Saphenous Veins's tributaries as they join the Femoral Vein in the groin, has received a lot of attention. The current study compares the results of varicose vein surgery i.e. simple high ligation of Sepheno-femoral Junction (SFJ) with and without striping.

Objectives:

1. To evaluate the distribution (age, sex, occupational), precipitating factors and complications of varicose veins of lower limbs.
2. To assess and compare postoperative outcome of Sepheno-femoral Junction(SFJ) Incompetence in Varicose Veins by doing Simple High Ligation With and Without Stripping.

Materials And Methods: 50 patients with varicose veins who visited the Srinivas Institute of Medical Sciences and Research Centre Surgery OPD or were admitted to the surgery wards at SIMSRC between June, 2022 and Feb, 2023 were included in the study, after meeting the inclusion and exclusion criteria. In all patients, a sphenofemoral ligation (SFJ) was performed. There were two groups formed. 25 of the cases were treated by SFJ ligation and long saphenous vein stripping up to the knee joint. SFJ ligation without stripping was used in 25 other cases. Patients were followed up on for 6 months after surgery to look for short-term post-operative outcomes.

Results and Observations: Most of the patients belonged to age group 41-50 years (42%) and 70% were males. 42% had cosmetic disfigurement, 24% had swelling, 20% had aching, and 14 % had ulcer. 76% had LSV & SSV, 16% had LSV, 8% had SSV. Bruising was evident in 4% of patients in the group without stripping and 8% in the group with stripping. Hematoma in the thigh was detected in just 2 (8% of) subjects without stripping, but in 12% of patients with stripping. There was no sensory nerve injury in the group that did not undergo stripping. 4% of patients in the stripping group had sensory nerve damage. On the first day of surgery, 2(8%) of the 25 patients with stripping experienced painful ambulation, while 5(20%) of the patients without stripping experienced painful ambulation. In 96% of patients with stripping and 92% of patients without stripping, the post-operative hospital stay was fewer than 7 days. The mean hospital stay of patients who had stripping was shorter than that of patients who did not have stripping, although $p>0.05$. At the three-month follow-up, it was discovered that 100% of the subjects who had stripping returned to their normal activities, whereas 92% of the patients who had not stripped returned to their normal activities, $p>0.05$. No recurrence was observed in the patients of any group

Conclusion: There are various treatment options for varicose veins. In this study, the optimal treatment is a saphenofemoral junction flush ligation with tributary ligation and stripping of the long saphenous vein up to the knee joint. It is a simple, successful, and permanent therapy procedure.

Key Words: *Varicose, long saphenous vein, Communicating or perforating vein, Stripping*

***Corresponding Author**
Dr Prajwal Shastry
Post Graduate, Department of General Surgery, Srinivas Institute of Medical Sciences and Research Centre

INTRODUCTION

Over 80% of varicose veins are caused by incompetence of the long saphenous system, and most surgeons must choose between a simple high ligation of the SFJ followed by avulsion of the varicosities or the same treatment followed by extra LSV stripping. Since the nineteenth century, when it was discovered that removing the LSV effectively removed the vein's tributaries from the defective trunk, it has been acknowledged as a beneficial technique. However, this required surgical exposure of the entire vein (at the time), which resulted in a high rate of wound morbidity.

Keller, a San Francisco army surgeon, described a revolutionary technique in 1905 in which a ligature was passed up the length of the vein on a wire, fastened to the vein's top, and then drawn downward[1]. This enabled what is now known as the inversion technique to be used to remove the vein. Keller, on the other hand, dealt with the tributaries by cutting into them and splitting them with ligatures, rather than merely avulsing them during the stripping phase.

The next year, Mayo Clinic in Rochester recorded 185 varicose vein procedures, many of which involved subcutaneous excision of the LSV with a purpose-built "ring vein-enucleator." [2]. This enabled segments of the LSV to be retrieved without the tributaries being surgically divided—they were simply cut off, much like we do today. This procedure had the problem of removing only a few inches of LSV at a time, necessitating multiple incisions. This strategy gained popularity during the next two decades. However, due to instrumentation constraints that complicated the procedure and a relatively high morbidity, the treatment fell out of favour with the development of sclerotherapy. Following World War II, the pendulum swung back, as practitioners learned the high recurrence rate associated with injection treatment and as modern technologies enabled easier and less traumatic stripping.

What are some of the benefits of stripping? The rationale is self-evident. Incompetent valves along the LSV, as we understand it, allow blood to reflux down the vein and into its tributaries, conveying high pressure into the smaller branches, which become varicose as a result. Much emphasis has been placed on the proper method of high saphenofemoral ligation, which involves meticulously locating, ligating, and splitting all of the LSV's tributaries as they join the femoral vein in the groin. Overlooking any of them has always been considered surgical dogma, since it allows for ongoing reflux into the residual branch and the subsequent formation of recurrent varicose veins. Thus, it appears nonsensical to exclude tributaries that connect the vein distal to the groin outside of the operating zone.

This is unavoidably what occurs when the SFJ is ligated alone; only through stripping can these tributaries be avulsed from the LSV and so removed from the source of venous incompetence. Simple SFJ ligation means that saphenous incompetence is a process that begins at the SFJ and propagates downward, a condition sometimes attributed to gravity as a result of man's upright posture. Abu-Own et al. revealed that lengthy saphenous incompetence occurs in up to one-third of cases when a competent SFJ is present[3]. This is conclusive proof, albeit circumstantial, that varicose veins are caused by an inherent weakness in the soft tissue matrices that comprise the venous wall, not by gravitational stress. In such instances, simple high ligation is necessarily bound to failure. These theoretical arguments may be secondary to the practical question of whether stripping the LSV produces better outcomes than not stripping it. The long-term success of varicose vein surgery is frequently quantified by the rate of recurrence. This relatively unambiguous-sounding term is, of course, not as straightforward as it appears.

Numerous researches have been conducted in an attempt to resolve these concerns. Munn et al. treated 100 patients with bilateral SFJ incompetence in a New Zealand trial[4]. The LSV was stripped from groin to ankle on one leg at random; the high SFJ was ligated and several phlebectomies were performed on both legs. To ensure the patient was unaware which leg had been stripped, a mock incision was made at the ankle on the unstripped leg. (One may imagine that the majority of patients, based on subcutaneous thigh bruising, would have a reasonable understanding which side was stripped.) Between 2.5 and 3.5years later, a follow-up was conducted. This was done subjectively by the patient and objectively by an independent observer to determine which leg had the better outcome. Independent observers determined that twenty of the stripped limbs had a "better" outcome (as determined by the existence of recurring or recurrent varicosities), compared to six of the unstripped limbs. There was no noticeable difference in the remaining cases. This was a statistically significant difference. However, the patients' perceptions were significantly different—a small (statistically insignificant) majority felt that the outcome was superior in the unstripped limb. This was due to the high prevalence of paraesthesia in the legs following vein stripping. This report illustrates a critical point in the stripping debate—the trade-off between decreased recurrence rates and a higher rate of postoperative morbidity.

Numerous studies have indicated that patients who have the LSV removed had fewer recurrences than those who have the SFJ just high ligated. Sarin et al. examined 89 limbs from 69 patients suffering from LSV incompetence[5]. SFJ ligation with or without stripping was examined in ten legs using photoplethysmography, Duplex scanning, clinical examination, and patient satisfaction. The term of follow-up was 18 months. At the final evaluation, significant differences in favour of the stripped group were observed in all four measures. Contrary to the previous article, the stripped group had a higher patient satisfaction level; this is likely due to the LSV being stripped just to the knee, minimising the danger of saphenous nerve injury. At 18 months, an astounding 83 percent of the unstripped group experienced recurrent varices. This is significantly greater than in the majority of previous studies, which often have a longer follow-up period, and shows that some of these veins were residual rather than actually recurrent.

Dwerryhouse et al. published a comparable study involving 78 patients (110 limbs) in 1999, but with a 5-year follow-up period[6]. This revealed a much lower rate of reoperation in patients having LSV stripping—6%, compared to 20% in those undergoing high SFJ ligation alone. When the upper half of the LSV was stripped to the knee, duplex scanning revealed a significantly lower incidence of residual reflux than when it was not. However, there was no significant difference in patient satisfaction between the two groups—90% of the stripped group was satisfied, compared to 77% of the unstripped group.

A subsequent investigation by Jones et al. reached similar outcomes[7]. As before, one hundred patients (133 limbs) were randomly assigned. After two years, 43% of those who had not undergone LSV stripping had recurrent varicose veins, compared to 25% of those who did – a statistically significant difference. Duplex scanning revealed that the most common cause of recurrence was neovascularization in the groin. The scientists found that by stripping the LSV, they eliminated the runoff that could flow into these new vessels. Again, satisfaction levels were roughly comparable between the two groups—91 percent in the stripped group and 87 percent in the unstripped group. All of these experts agree that stripping the long saphenous vein is superior than simple high saphenous vein ligation in the long term. This appears to be true in terms of objectively assessing recurrence rates and objectively measuring postoperative venous function, but does not appear to be reflected in patient satisfaction rates, which are generally similar regardless of the technique performed.

This led Woodyer and Dormandy to conclude the opposite—that removing the LSV was a surgical dogma-based operation that conferred no subjective improvement on the people treated[8]. A more recent investigation of Quality of Life (QoL) levels following LSV stripping revealed a statistically significant improvement in scores for both successful and unsuccessful LSV stripping[9]. Successful stripping patients experienced a larger improvement in QoL scores, owing mostly to the lower recurrence rate and less need for reintervention. The article is hampered by the fact that the unstripped group (which accounts for more than half of the overall number) was not chosen—stripping had been attempted but appeared to fail. Nonetheless, the data imply that removing the LSV has a real advantage for the patient.

The present study is conducted to compare the outcomes of varicose vein surgeryi.e. simple high ligation of Sepheno-femoral Junction (SFJ) with and without striping.

Objectives:

1. To evaluate the distribution (age, sex, occupational), precipitating factors and complications of varicose veins of lower limbs.
2. To assess and compare postoperative outcome of Sepheno-femoral Junction(SFJ) Incompetence in Varicose Veins by doing Simple High Ligation With and Without Stripping.

Materials and Methods

All patients visting Srinivas Institute of Medical Sciences and Research Centre Surgery OPD or admitted to the surgery wards at Srinivas Institute of Medical Sciences and Research Centre with varicose vein during the period of June, 2022 to Feb 2023 were taken into study, considering the inclusion and exclusion criteria. Study duration being 12 months, patients were followed up within that period and looked for short term post-operative outcome.

Inclusion Criteria

1. All patients with primary varicose vein, in SIMSRC, occurring in the lower limb are included in this study.
2. Age above 12 years.

Exclusion Criteria

1. Varicose veins occurring in other parts of the body except lower limb are excluded in this study.
2. Age of Patients less than 12 years.
3. Varicose vein co-existing with diabetes mellitus.
4. Secondary varicose vein (Deep vein thrombosis ,pregnancy, pelvic tumours, etc)
5. Recurrent varicose vein.
6. The patients with previous surgery over the limb that can cause chronic pain or venous insufficiency (fracture orif / external fixation graft for bypass surgery, lymph edema, etc.)

After explaining the procedure and getting informed consent from the patients, they were subjected to one of the two types of surgical treatment modality.

Group I

In one group 25 patients underwent Trendelenburg procedure by making a transverse incision of length 3cm just below the groin crease extending from femoral artery pulsation site towards medially. The incompetent perforators in the thigh and leg are ligated and divided subfascially by making small transverse incision across the path of the vein at the site of incompetent perforators marked preoperatively. Then the long saphenousvein is stripped from groin to just below the knee by passing stripper into the vein.

Group II

In the other group 25 patients underwent Trendelenburg procedure is done by making a transverse incision of length 3cm just below the groin crease extending from the site femoral artery pulsation medially. The incompetent perforators in the leg are ligated and divided subfascially by making small transverse incision across the path of the vein at the site of incompetent perforators marked preoperatively. In both groups the wounds closed with good hemostasis, limb elevated and elastocrepe bandage applied.

All the patients were followed in the postoperative period and for a period of next six months.
The details of all the patients and their investigations, procedure undergone, follow up were recorded in separate proforma for individual patients.

Results and Observations

50 patients were taken up for the study. Saphenofemoral ligation (SFJ) was done in all the cases. Two groups were made. 25 of the cases were managed with SFJ ligation and stripping up to the knee joint. Whereas 25 other cases were managed with SFJ ligation without stripping. The results are tabulated with graphs as:

Table 1: Etiology of Varicose Veins

		N	%
Age in years	12-20	0	0%
	21-30	2	4%
	31-40	13	26%
	41-50	21	42%
	51-60	14	28%
Sex	Female	15	30%
	Male	35	70%
Side of the Limb Involved	Bilateral	4	8%
	Left	33	66%
	Right	13	26%
Signs & Symptoms	Aching	10	20%
	Cosmetic Disfigurement	21	42%
	Swelling	12	24%
	Ulcer	7	14%
Venous System Involved	LSV	8	16%
	LSV & SSV	38	76%
	SSV	4	8%
Perforators Involved	Hunterian Canal Perforator	18	20%
	DODD	15	16%
	BYOD	16	18%
	COCKETT	32	35%
	Ankle Perforator	10	11%

It was observed that most of the patients belonged to age group 41-50 years (42%), followed be 51-60 years (28%). The least proportion of patients belonged to age group 21-30 years (4%). Out of 50 patients 26% were of ager group 31-40 years. There were no subjects between the age of 12-20 years. The mean age of the study population was 40.0±11.0 years.

Out of 50 patients, 30% were female and 70% were males.
Out of 50 patients, 42% had cosmetic disfigurement, 24% had swelling, 20% had aching, and 14 % had ulcer.
Out of 50 patients, 76% had LSV & SSV, 16% had LSV, 8% had SSV.
Out of 50 patients, HUNTERIAN CANAL PERFORATOR was observed in 20% patients, DODD in 16%, BYOD in 18%, COCKETT in 35%, Ankle perforator in 11% patients.

Investigations:

Most of the cases were taken up for surgery based on Duplex Ultrasonography. In a few cases plain doppler was done. Other investigations are done as per proforma. Only Duplex Ultrasound was performed in 94% patients out of 50 patients. Duplex USG along with other investigations was performed in 6% patient.

TABLE 2: INVESTIGATIONS PERFORMED

INVESTIGATIONS	N	%
DUPLEX ULTRASOUND	47	94%
DUPLEX USG & OTHERS	3	6%
Grand Total	50	100%

Management:

As already mentioned earlier, the study mainly focuses on the surgical management of varicose veins, i.e. saphenofemoral junction ligation (SFJ) with and without stripping. The SFJ is ligated and along with it all the 3 tributaries namely, Superficial Circumflex Iliac, Superficial Epigastric, Superficial External Pudendal veins are ligated too. 25 of the cases were managed with SFJ ligation and stripping upto knee joint. Whereas 25 other cases were managed with SFJ ligation without stripping. Post operatively the patients are followed up for 1 year of which maximum cases were followed up for a period of 6 months. The inference drawn in the post operative period are tabulated as follows:

Table 3: Observations During Management

		Stripping		Without stripping		Total		P
		N	%	N	%	N	%	
Bruising	ABSENT	23	92%	24	96%	47	94%	0.5512
	PRESENT	2	8%	1	4%	3	6%	
Hematoma In Thigh	HAEMATOMA	3	12%	2	8%	5	16%	..
	NO	22	88%	23	92%	45	84%	
Deep Vein Thrombosis	ABSENT	25	100%	25	100%	50	100%	..
	PRESENT	0	0%	0	0%	0	0%	
Sensory Nerve Injury	ABSENT	25	100%	24	96%	49	98%	0.3125
	PRESENT	0	0%	1	4%	1	2%	
Ambulation On First Day	COMFORTABLE	23	92%	20	80%	43	86%	0.7361
	PAINFUL	2	8%	5	20%	7	14%	
Post Operative Hospital Stay	<7 DAYS	24	96%	23	92%	47	94%	0.551
	>7 DAYS	1	4%	2	8%	3	6%	
Healing Good/Delayed	DELAYED (>7DAYS)	1	4%	3	12%	4	8%	0.6212
	GOOD (<7DAYS)	24	96%	22	88%	46	92%	
Post Operative Infection	ABSENT	25	100%	24	96%	49	98%	0.312
	PRESENT	0	0%	1	4%	1	2%	
Pain Relief After 2 Month	NOT RELIEVED	1	4%	6	24%	7	14%	0.103
	RELIEVED	24	96%	19	76%	43	86%	
Return To Normal Activities	<3 MONTHS	0	0%	2	8%	2	4%	0.148
	WITHIN 3 MONTHS	25	100%	23	92%	48	96%	
Recurrence	ABSENT	25	100%	25	100%	50	100%	..
	PRESENT	0	0%	0	0%	0	0%	

Out of 50 patients, bruising was present in only 6%. In the group with without stripping, bruising was present in 4% patients and 8% in the group with stripping.

Hematoma in thigh was observed in only 2(8%) subject without stripping whereas hematoma in thigh was observed in 12% patients with stripping.

Deep Vein Thrombosis was not present in any of the patients in both groups of stripping and without stripping. This may be due to short period of follow up.

Sensory Nerve injury was present in only 2% patients out of 50. In the group with stripping, no sensory nerve injury was observed. In the group without stripping, 4% patients presented sensory nerve injury. The sensory nerve injury is probable due to the injury of the saphenous and sural nerve.

Out of 25 patients 2(8%) patients had painful ambulation, in the group with stripping, while 5(20%) patients without stripping had painful ambulation on the first day of surgery. No Significant association was observed between presence of pain on the first day of ambulation and type of treatment as $p>0.05$. Though ambulation was done on Day 1, the patients were not allowed to move from bed and were only mobilized on the bed itself.

At 48 hours after surgery, the mean Visual Analog Score for Pain was observed to be significantly less in the group with stripping compared to the group without stripping, as $P<0.05$.

Post operative hospital stay was less then 7 days in 96% of the patients with stripping and 92% of the patients without stripping. No significant association was observed post operative hospital stay and type of treatment as $p>0.05$.

The mean hospital stay of the patients with stripping was less than those without stripping, however the difference was not statistically significant as p>0.05.

Out of 25 patients, only 1(4%) subject with stripping had delayed healing (>7 Days), while 12% patients had delayed healing (>7 Days) in the group without stripping. No Significant association was observed between presence of duration of healing and type of treatment as p>0.05.

Post operative infection as is not present in any of the 25 subject with stripping, while post operative infection was as present in 1(4%) subject without stripping. No significant association was observed between post operative infection and type of treatment as p>0.05.

At 2 month follow-wup, it was observed that, in the subject with stripping, 96% were releved of pain, while in the group without stripping, 76% were relieved of pain. No significant association was observed between relief of pain at 2 months follow-up and type of treatment as p>0.05.

At 3 month follow-up, it was observe that 100% subject with stripping returned to their normal activities, while 92% of the patients without stripping returned to normal activities. No significant corelation was observed between ability to return to normal activities at 3 months and type of treatment as p>0.05.

No recurrence was observed in the patients of any group. This may be because the study was for a period of 1 year and most of the patients were followed-up for a period of 6 months.

DISCUSSION

The age range in our study is from 23 to 55 years. Malhotra et al[10] included 677 patients from both North and South India in their study, with an age range of 18-65 years. West Wright et al.[11] studied 1338 patients in England ranging in age from 20 to 75 years. Pavan Prasad BK and Prem Kumar[12] discovered that the most usually affected cases (12 (24%)) were between the ages of 31 and 40. Dr Devid Hazarika and Dr Dhirendra Nath Choudhury (2018) discovered in their study that the most usually afflicted age group was 21 to 40 years[13].

Thirty percent of the 50 patients were female, whereas seventy percent were male. The male to female ratio in our study was determined to be 7:3. In Switzerland, Widmer[14] recorded a ratio of 1:1. In Pavan Prasad BK and Prem Kumar's [12] study, 39 of the 50 cases (78 percent) were male, with just 11 female patients (22 percent), for a roughly 4:1 ratio.

The majority of the patients were found to have varicose veins on their left legs (66 percent). Out of 50 patients, 26% had varicose veins on their right leg and 8% had varicose veins on both legs. A. H. M. Dur, A. J. C. Mackaay, and colleagues [14] discovered that 51.45 percent of participants had varicose veins in their left legs. Ravikumar B. L et al. [16] discovered that the left lower limb was involved in 35 (70%) of the cases and the right lower limb was implicated in 15 (30%) of the cases.

Out of 50 patients, 42 percent suffered cosmetic deformity, 24% had swelling, 20% had hurting, and 14% had ulcer. This finding is consistent with other research conducted by Campbell et al[17], in which cosmetic symptoms were found to be 90% of the time.

HUNTERIAN CANAL PERFORATOR was observed in 20% of the 50 patients, DODD in 16%, BYOD in 18%, COCKETT in 35%, and Ankle perforator in 11%. S. Sahu et al. [18] found that 54 of 63 instances had saphenofemoral junction (SFJ) incompetence and 11 had saphenopopliteal junction (SPJ) incompetence in their study. Perforator involvement was found to be 88 percent in the Ravikumar B. L et al. [16] study, compared to 68 percent in the Labropoulos N et al. [19] study. Above knee perforators were more typically implicated (97.05%) than below knee perforators (11.7 percent). In their study, Dr Devid Hazarika and Dr Dhirendra Nath Choudhury [16] discovered that perforator involvement occurred above the knee 9(13.43 percent) of the time, below the knee 41(61.19 percent) of the time, and around the ankles 17(25.37 percent) of the time.

Duplex ultrasonography, which combines Doppler and conventional ultrasound, provides a more accurate assessment than Doppler alone in assessing the anatomy and physiology of the lower extremity venous system. The major non-invasive approach of diagnosing chronic venous insufficiency is Doppler/Duplex scanning, which has an overall accuracy of 88 percent, according to a research by Masuda et al. [20]. In the current investigation, Duplex Ultrasound identified reflux in 47 (94 percent) of 50 individuals. This finding is consistent with Pavan Prasad BK and Prem Kumar[12] who demonstrated that duplex scanning had an overall accuracy of 94%. The current study is also consistent with the findings of Dr Devid Hazarika and Dr Dhirendra Nath Choudhury[13], who discovered reflux in the SFJ in 47 (70.14 percent) of the cases.

Only 6% of the 50 individuals tested positive for bruising. Bruising was found in 4% of patients in the non-

stripping group and 8% in the stripping group. Hematomas in the thigh were found in just 2 (8%) of the subjects who did not have stripping, but hematomas in the thigh were found in 13% of the patients who had stripping. Nisar A et al.[21] discovered that hematoma formation occurred in 24 percent of patients. The increased incidence of hematoma formation in the thigh in stripping patients was attributable to tissue damage during venous stripping. Natraj et al[22] observed haematoma in 28 percent of participants with stripping and 4 percent of subjects without stripping, which is consistent with the current study.

Deep Vein Thrombosis was not found in any of the patients in either the stripping or non-stripping groups in this investigation. This could be owing to the brief length of follow-up. Munn et al [4] found no DVT in their analysis of 57 patients.

Sensory nerve damage was found in just 2% of 50 cases. There was no sensory nerve damage in the stripping group. In the non-stripping group, 4% of patients had sensory nerve damage. Our findings contradicted those of Munn et al [4], who found that paraesthesia was substantially more common in stripped limbs, with 19 limbs stripped compared to 8 unstripped (P0.025). These difficulties were discovered to prejudice patients away from believing that stripping was preferable to non-stripping and toward believing that the results were equivalent (P0.025).

On the first day of surgery, 2 (8%) of the 25 patients in the stripping group experienced painful ambulation, while 5 (20%) of the patients in the non-stripping group had painful ambulation. This finding was found to be diametrically opposed to Natraj et al. [22], who discovered that 32 percent of participants with stripping had painful ambulation on the first day, but only 8 percent of subjects without stripping had painful ambulation on the first day.

The mean Visual Analog Score for Pain was considerably lower in the group with stripping than in the group without stripping 48 hours after surgery, as P0.05. Munn et al [4] discovered that the group that received stripping experienced much more pain than the group that did not receive stripping.

In 96 percent of patients who had stripping and 92 percent of patients who did not have stripping, the post-operative hospital stay was fewer than 7 days. As $p>0.05$, there was no significant relationship between post-operative hospital stay and kind of treatment. This outcome was consistent with the findings of Natraj et al [22]. They also found no statistically significant difference in hospital stay duration between the two groups. Only one (4%) subject with stripping experienced delayed healing (>7 Days) out of 25 patients, whereas 12 percent of patients in the non-stripping group had delayed healing (>7 Days). As of p0.05, there was a significant correlation between the presence of healing length and the type of treatment. Natraj et al [22] discovered in his study that delayed healing was noted in 4% of patients in both groups (with and without stripping).

Post-operative infection was not present in any of the 25 subjects who had stripping, whereas it was present in 1 (14 percent) of the subjects who did not have stripping. As $p>0.05$, no significant relationship was found between post-operative infection and kind of treatment. Munn et al [4] discovered that 33% of the participants developed infections, and there was a substantial difference in infection rates between groups with and without stripping. Munn et al concluded that the group that received stripping was substantially more infected.

At the two-month follow-up, it was discovered that 96 percent of subjects with stripping were pain-free, but only 76 percent of those without stripping were pain-free. There was no significant correlation between pain relief and therapy type at the 2-month follow-up, as $p>0.05$. Natraj et al [22] also found no statistically significant changes in pain after two months of follow-up.

There was no recurrence in the patients. This could be because the trial lasted a year and the majority of the participants were followed up on for 6 months. One RCT discovered that there was no difference in the anatomical extent of the patients' varicose veins from baseline to 1 year after conservative therapy, but 70% of surgical (ligation with stripping) patients were reported to have no varicosities on clinical assessment at this time (p 0.05).

CONCLUSION:

It is found that varicose veins and their associated symptoms and complications constitute the most common chronic vascular disorders leading to surgical treatment. It is more common in middle-aged group. The patients were predominantly males. Patients presented with spectrum of symptoms and signs. The study revealed increased incidence of varicosity in the left lower limb as compared to the right lower limb. Long saphenous system is the most common venous system affected with above ankle (lower leg) perforator being the most common incompetent perforators. The outcome of cases of primary varicose vein depends on a thorough and complete clinical examination and duplex scan by an experienced radiologist.

Operative line of treatment is a primary procedure in the management of varicose veins of lower limb. Stripping of LSV upto knee joint associated with less morbidity. Though it is seen that there is increase complications like haematoma and bruising in the group with stripping in early period as compared to the group without stripping, there is

better long term outcome during follow-up in the group with stripping. Accurate assessment of the underlying anatomy reduces the risk of recurrent varicose veins. There was no recurrence in our study in both the groups. This is mainly due to short follow up period which on average was around 6 months. In this aspect too, corroborative literature and other similar studies state that saphenofemoral junction (SFJ) ligation with stripping upto knee joint has less recurrence than SFJ ligation alone.

Thus the present study concludes that the stripping of varicose veins upto knee joint along with flush ligation of SFJ is a better alternative to flush ligation of SFJ alone although further studies are welcomed in this aspect.

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Images:

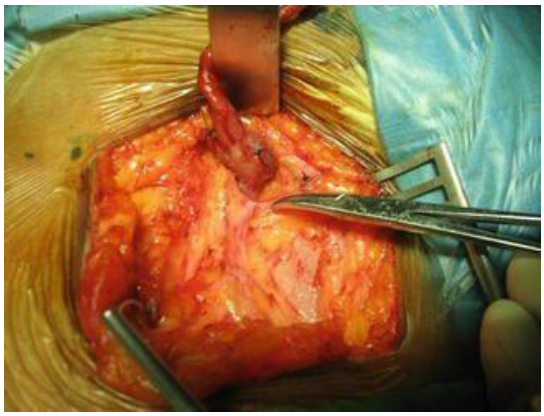

Figure 1: SFJ location. Note the position of the superficial external pudendal artery and the CFV

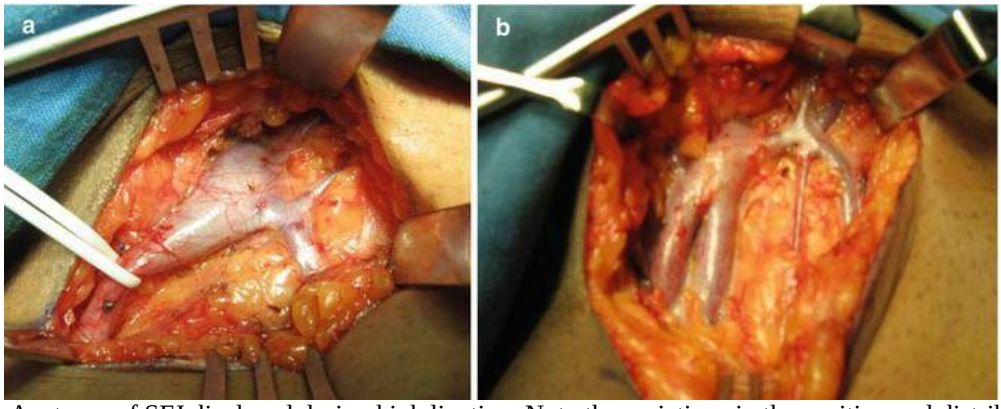

Figure 2: Anatomy of SFJ displayed during high ligation. Note the variations in the position and distribution of tributaries. (a) Distribution of tributaries are displayed. (b) Bifid GSV with a different pattern of tributaries

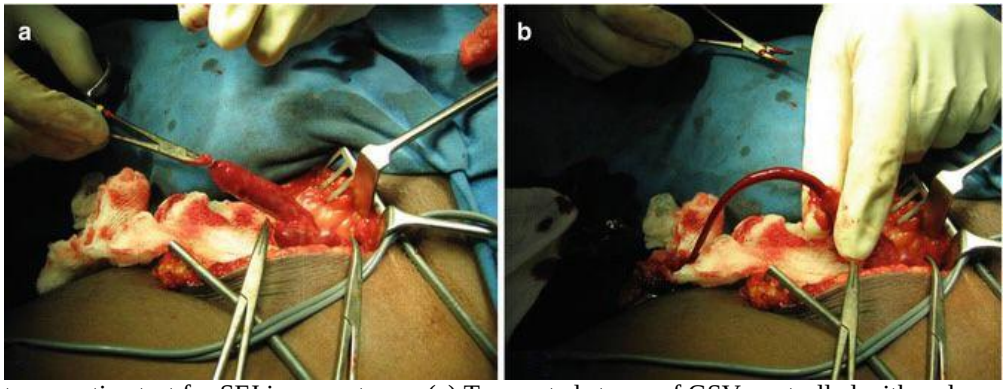

Figure 3: Intraoperative test for SFJ incompetence. (a) Transected stump of GSV controlled with a clamp. (b) Clamp released. Note the brisk bleed back

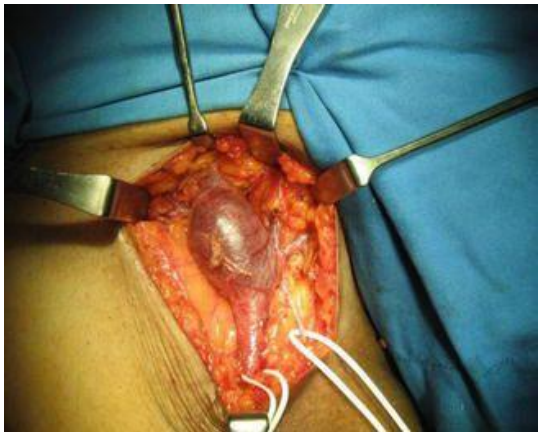

Figure 4: Saphena varix