

## A STUDY ON CLINICAL SCENARIO AND MANAGEMENT OF VARICOSE VEINS

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### ABSTRACT

**Introduction:** The varicose veins is the most common vascular disorder of the lower extremities. It affects more than 5 % of adult population but in India incidence of varicose veins seems to be far less common because patients come for complications such as pain, oedema, pigmentation and ulceration leading to tip of Iceberg phenomenon. This study will help in finding epidemiology, mode of presentation and effect of surgery on venous ulcers and recurrence. Hence based on this aim of our research is to study the incidence of varicose veins according to age, sex and occupation, to study spectrum of clinical presentation in varicose veins, to study effect of surgery in healing of varicose ulcers if present and also to observe the recurrence upto 6 months **Material and Methods:** This prospective study involved 50 patients admitted to surgical ward in Government district headquarters hospital, Krishnagiri with varicose veins. The study period was 12 months inclusive of a 6 month follow up period. Patients were evaluated and followed up according to a protocol. **Observation and Results:** Most patients was between 41 to 50 yrs (26 %), males (74%), left side involvement in (70%) and farmer by occupation (40%) with pain as most common presenting symptom in (76%). Long saphenous system involvement in (94%). 6 patients out of 50 showed recurrence of varicose veins. 4 patient showed recurrence out of 21 venous ulcer patients. **Conclusion:** For varicose veins saphenofemoral junction ligation with stripping of vein with perforator ligation showed good outcome. Venous ulcers heal well after surgery with few recurrences.

**KEYWORDS:** Varicose veins, ulcer, recurrence, ligation.

### INTRODUCTION

“Varicosity is the penalty against gravity”. The term varicose is derived from the latin word meaning dilated, tortuous and elongated vein. Physiologically speaking varicose veins is the one which permits flow of blood through faulty valves.

Varicose veins are common. The prevalence has been variously reported from as little as 2% to over 20% in population studies.<sup>[1]</sup> This enormous variation results from the different populations studied, different definitions applied and the different assessment or examination techniques used. Western studies have shown that 20% population suffers from varicose vein and 1% has skin changes preceding to venous ulceration.<sup>[1]</sup> **The Edinburgh Venous study (EVS)**<sup>[2]</sup> published in 2004 examined over 1000 adults in UK, showed that 50.3% of men and 32.2% of women had a dilated tortuous trunk of the long and/or short saphenous vein and their first or second order tributaries.

The prevalence of webs or small reticular varicosities was even higher at over 80% for both males and females.

Although it was previously believed that varicose veins are more common in women, few other population studies confirm that varicose veins are at least as common in men. The prevalence of varicose veins rise with age in virtually all published studies the prevalence trunk varicosities in the EVS rose from 11.5% in the 18-24 year old group to 55.7% in those aged 55-64. Although there is considerable anecdotal evidence to suggest that varicose veins are less common in developing countries like ours, the absence of adequate epidemiological data leaves the question open. The search for more effective means of prevention and cure for this common condition continues and this study covers almost all aspects of varicose veins.

“It’s in the developed countries where attire reveals more than it conceals; patients turn up for treatment of cosmetic reasons. In our Indian scenario it’s the complications not the cosmetic reasons bring the patient to the doctor. That is the reason, why, though common, varicose veins remain as an ice-berg phenomenon.”

The varicose vein and their associated symptoms and

complications constitute the most common vascular disorder of the lower extremities. According to western countries it affects more than 5 % of adult population but in India incidence of varicose veins seems to be far less common because in India most of the patient never come for varicose veins as such, they come for complications of varicose veins such as pain, oedema, pigmentation and ulceration. That's the reason varicose veins in our India remains as tip of Iceberg phenomenon.

The varicose veins were recognized in the prehistory in the present century considerable knowledge has been gained concerning anatomy, pathophysiology and clinical management of varicose veins. As in the past attention is directed towards the mechanical effect of varicosity rather than basic causes. In the recent times attempts are made regarding the study of the etiological factors.

This study will throw light on epidemiology, mode of presentation, effect of surgery on venous ulcer and recurrence upto 6 months. Hence based on this aim of our research is to study the incidence of varicose veins according to age, sex and occupation, to study spectrum of clinical presentation in varicose veins, to study effect of surgery in healing of varicose ulcers if present and also to observe the recurrence upto 6 months

#### MATERIALS AND METHODS

The present study was conducted at Government district Headquarters hospital, Krishnagiri in surgical ward during June 2019 to June 2020. During this period 50 number of cases of varicose veins were studied. The study data is collected as per the proforma prepared for study of varicose veins. The clinical finding with coexisting medical illness was recorded in detail. The routine investigations and pre-operative marking of perforators with Doppler scan were done. The pre-operative treatment, operative findings and post-operative outcome are documented. The details of cases of varicose veins were drawn as a master chart with record of only relevant and positive findings. All varicose veins cases involving large and short saphenous vein were include in the study. Whereas varicose veins due to deep vein thrombosis and recurrent varicose veins were excluded from the study.

All the cases were given TT injection and xylocaine test dose before surgery. The parts and spine were prepared. On table, thorough preparation of the part was done with iodine scrub and spirit after giving anaesthesia and surgical procedure done.

Routine follow up was done during the immediate post-operative period and every day till discharge. Attention was paid to note the development of any complications. Treatment was administered from time to time according to the needs of patients. Most of patients who underwent surgery received IV fluids for a day, antibiotics and analgesics.

After removal of sutures and improvement of general condition, the patients were discharged from the hospital with an advice regarding diet, rest, type of work to done, drugs to be taken and to prevent long standing, and usage of elastic crepe bandage, etc and with a further advice to come to check up once in 7 days for 2 weeks and further once in a month. The general condition and examination of operated limb were carried out to find out the healing of wounds, any presence of tenderness and recurrence.

#### RESULTS

In our study fifty patients with primary varicose veins who were treated in Surgical ward in Government headquarters hospital, Krishnagiri were included.

In our study the age of the patients ranged from 20 to 65 years, the commonest age group was 41-50 years followed by 31- 40 years. The mean age of our study group is:  $42.14 \pm 13.58$ . Out of 50 patients, 37 were male and 13 were female. The male: female ratio was 2.84:1.

Most of patients belong to agriculture background (40%) and long standing occupation (14%) like shopkeeper, masons, bar tenders, and traffic police etc

In our study among 50 patients left limb was more affected in around 35 cases (70%) with 95% CI- (56.25 – 80.90) than right limb 15 cases (30%) with 95% CI – (19.10 -43.75).

Our patents presented with varied symptoms, out of which Pain was most common 38 (82%) patients followed by dilated veins 36 (72%) patients. Few patients had venous ulcer (n=21) and edema (n=10). Most of patients presented with more than one symptoms.

Coming to venous system involved long saphenous system is the most common venous system affected by varicosity (90%) with CI – (78.24 –95.69). SFJ Incompetence is seen in (88%) patients with CI – (76.20-94.38).

Perforator incompetence was present in 44 patients and few had more than one venous system involved.

**Table 1: Venous System Involved.**

| System involved | No. Of patients | Percentage | 95% CI       |
|-----------------|-----------------|------------|--------------|
| LSV             | 45              | 90.0       | 78.24-95.69  |
| SSV             | 2               | 4.0        | 1.86 – 14.13 |
| SFJI            | 44              | 88.0       | 76.20-94.38  |
| SPJI            | 5               | 10.0       | 4.35-21.36   |

|    |    |      |             |
|----|----|------|-------------|
| PI | 44 | 88.0 | 76.20-94.38 |
|----|----|------|-------------|

Coming to treatment ligation was the common treatment procedure performed on various venous systems and

most commonly procedure was performed on sapheno femoral junction and perforators was next site followed.

**Table 2: Treatment.**

| PROCEDURE DONE | NO. OF PATIENTS- 50 | PERCENTAGE |
|----------------|---------------------|------------|
| SFJL+S+PL      | 28                  | 56.0       |
| SFJL+PL        | 7                   | 14.0       |
| SFJL           | 6                   | 12.0       |
| SFJL+SPJL+S+PL | 3                   | 6.0        |
| PL             | 4                   | 8.0        |
| SPJL+PL        | 2                   | 4.0        |

Very few cases in our study has complications and hematoma was most commonly seen in four patients followed by wound infection in two patients and

bleeding in one patient. As a whole seven patients developed complications.

**Table 3: Complications.**

| COMPLICATIONS   | NO. OF CASES | PERCENTAGE |
|-----------------|--------------|------------|
| Bleeding        | 01           | 02 %       |
| Haematoma       | 04           | 08 %       |
| Wound infection | 02           | 04 %       |

The mean hospital stay days was  $4.31 \pm 1.75$ , mostly its required a stay of less than 5 days in most of the patients, 43 patients had hospital stay less than 5 days, whereas 7 patients had hospital stay days more than five days.

50 years it was three among 37 patients. This was also statistically associated with  $P=0.039$ . Incidence of recurrence of ulcer is not statistically associated with type of surgery patients underwent with a p value of 0.612.

In our study 6 patients had recurrence of varicose veins, We correlated the patients who had recurrence with their age and most of recurrences were in age group above 50, three among thirteen had recurrence, while in less than

Next we also analyzed the ulcer recurrence in our study in correlation with surgical procedure, In this study we found ulcer recurrence in 4(20%) patients out of 21 patients initially presented with venous ulcer.

**Table 4: Ulcer recurrence after surgery.**

| SURGICAL PROCEDURE | No. of patients with ulcer | Ulcer Recurrence |
|--------------------|----------------------------|------------------|
| SFJL +S+PL         | 16                         | 02               |
| SFJL + PL          | 01                         | 01               |
| PL                 | 02                         | 01               |
| SFJL+S+SPJL+PL     | 02                         | 00               |

## DISCUSSION

In our study a total number of 50 patients with primary varicose veins were admitted, investigated, operated and followed up. The results were analyzed and compared with other similar studies. In our study the age range is from 20 yrs to 69 yrs. Malhotra et al.<sup>[3]</sup> in their study comprising 677 patients from both North and South India had an age range of 18-65 years. In the West Wright et al.<sup>[4]</sup> in their study of 1338 patients in England had an age range of 20-75 years.

In our study male to female ratio was found to be 3:1. Widmer,<sup>[5]</sup> in Switzerland recorded a ratio of 1:1. Callam et al.<sup>[6]</sup> in England and Leipzig et al.<sup>[7]</sup> recorded a ratio of 1:2. The decreased occurrence of disease in females at

our set up may be due to the fact that our middle class and lower class women are not much worried about the cosmetic appearance.

In our study most patients were farmers (40%) followed by shopkeepers (20%), bar tenders(6%) and manual labourers (6%) who involved in long standing work hours.

In our study, left lower limb was involved in 35(70%) cases and right lower limb was involved in 15(30%) cases. This results were similar to study done by Dur and Mackaay et al.<sup>[8]</sup>

In the present study, the commonest symptom in 38 (76%) cases was pain. 36 (72%) cases had complaints of

dilated veins in the affected limb and 10(20%) cases had limb edema, venous ulcer was present in 21(42%) of cases. This finding is bit different with other studies done by W.B. Campbell et al,<sup>[9]</sup> with cosmetic symptoms being 90% and aching pain 57% because in our country patient come to hospital for some symptom rather than cosmetic appearance.

In our study perforator involvement is 88% as compare to Labropoulos N et al,<sup>[10]</sup> in which they found it 68 %.

In this study, long saphenous vein was involved in 90% of cases (45 patients), the short saphenous vein in 4% (2 patients) and both long and short in 6% (3cases). Delbe and Mocquet,<sup>[11]</sup> in their study had found varicosity of long saphenous vein in 98% and only 2% in short saphenous vein. Incompetent perforator was noted in 44 (88%) cases in our study.

Out of 50 cases, saphenofemoral junction ligation including the ligation of anatomically constant tributaries at its termination with stripping of long saphenous vein by Mayos stripper and ligation of incompetent perforator was done in 28cases. Sapheno-popliteal flush ligation was done in 5 cases, SFJ and SPJ ligation with stripping of LSV in 3 cases, only SFJ ligation done in 6 cases. SSV was not stripped to avoid nerve injury. Flush ligation of SFJ and incompetent perforator ligation was done in 7 cases. Only incompetent perforator ligation was done in 4cases.

In our study around 6 patients had recurrence which is around 12 %, among which recurrence seen after only SFJ ligation without stripping is 50% which is slightly more than Sarin et al,<sup>[12]</sup> that is 45% in Indian population while recurrence is 0% with SFJ ligation with stripping as compare to Sarin et al,<sup>[12]</sup> who had 18 % recurrence. this difference could be because of long follow up in their study as compare to ours that is 6 months to 1 year.

Similarly, the recurrence after SFJ ligation and perforators ligation without stripping we found less recurrence 7.1% as compare to 18.5% of Sarin et al.<sup>[12]</sup>

Next we also analyzed the ulcer recurrence in our study in correlation with surgical procedure, In this study we found ulcer recurrence in 4(20%) patients out of 21 patients presented with venous ulcer. This was also similar to previous studies done by Sarin et al.<sup>[12]</sup>

In our study, we encountered 07 cases of complication, the commonest being hematoma in 04 cases. There was no incidence of deep vein thrombosis. Literature shows the incidence to be very low at 0.01%.

## CONCLUSION

Varicosity of the lower limb is a common clinical entity. The number of cases reporting to the hospital is much less than the real incidence; because in the absence of symptoms due to varicose veins patients do not seek

treatment in our country. A definite relationship exists between the occupation and the incidence of varicose veins as most of our patient belongs to workers standing for longer duration. Venous ulcer heal well after surgery. Surgery is a quality modality for varicose veins patients with ulcer with low recurrence rate. Complications are negligible if cases are meticulously selected and operated. The present procedures enable the patient to lead almost normal life after surgery with few recoverable morbidities. There is need of general health education and awareness about varicose veins in society in order to achieve timely treatment, good outcome and decrease morbidity.

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