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Original Research Article

Management and outcome of lower limb varicose veins: a hospital based follow up study

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ABSTRACT

Background: Disorders of veins which are chronic in nature and very common are the varicose veins. Surgery is required at any one stage of the disease. There have been considerable advances that took place in the diagnostics of the varicose veins, but the treatment outcomes may not be good in many cases. To study the management and outcome of lower limbs varicose veins.
Methods: This was a hospital based follow up study. Patients who presented with varicose veins signs and symptoms were included. During the study period it was possible to include 40 patients who were willing to get included in the present study. Various presentations, complications and treatments were noted and finally followed up for minimum of 3 months.
Results: Most commonly affected age group was 36-45 years. Males were four times more affected than females. Most commonly affected limb was left side in 48%. Long saphenous system was involved in 55%. The predominant symptom was dilated and tortuous veins (32%) followed by pain (25%). 65 incompetent perforators identified by clinical examination and 130 by Doppler with above ankle being the commonest incompetent perforator. With the mean follow up of six months, no serious complications were noted. It was found that the sensitivity of the clinical examination was 82% when doppler scan was taken as gold standard. On follow up no one developed deep vein thrombosis. Incompetence recurrence rate at SFJ was 8% and at SPJ was 18%.
Conclusions: We conclude that surgery is the first line of management and if done accurately, complications are minimal.

Keywords: Doppler, Stripping, Varicose vein

INTRODUCTION

For describing the lower limbs varicose veins it has been said that the superficial vein loses its valve efficiency and gets thickened, tortuous and dilated in standing position.[1] The human lower limbs adapted themselves to carry out the task by adopting various mechanisms which included division of the column of blood to segments by valves, constant muscular activity especially of the calf muscle to `pump' the blood in the direction of heart, Intra-thoracic negative pressure to 'suck' the blood up, the capillary pressure which 'pushes' the blood forwards and the pressure grade in the blood vessel.[2]

Thus failure of any of these mechanisms may cause venous hypertension which may be the beginning of the onset of varicosity. Varicosity of lower limb develops in a very slow process, asymptomatic and probably harmless and only when the complications of varicosity like pain, edema, ulcer, skin changes and thrombosis occur, and then the patients present themselves for the relief.[3]

Varicosity of lower limb develops in a very slow process, asymptomatic and probably harmless and only when the complications of varicosity like pain, edema, ulcer, skin changes and thrombosis occur, and then the patients present themselves for the relief. Commonly this problem is tackled either by a conservative approach or by surgical interference, both of which have their limitations.[4]

Present study objective was to compare between the conservative and surgical management of lower limb varicose veins and study the outcome.

METHODS

Present study was carried out at SVS Medical College and Hospital. It was carried out from November 2014 to November 2016. During the study period, it was possible to include 40 eligible cases. After the management each patient was followed for three months.

Inclusion criteria

- Clinically diagnosed patients with lower limb varicose veins even with complications of varicose veins
- Patients with cosmetic concern.

Exclusion criteria

- Patients not willing to be part of the present study were excluded from the present study even though they were having varicose veins but they were managed as per the regular protocol (only thing is that their data was not included in the present study)
- Patients of varicose veins but with other severe co-morbidities.

Patients clinical examination

Detailed history was obtained and thorough clinical examination was done as per the study questionnaire. Standing position was adopted for clinical examination of the varicose veins under good lighting conditions and the patient was asked to expose both the lower limbs for proper exposure and examination. Rectal and abdominal examination was carried out. “Fegan’s test” was done. “Morrissey's cough impulse test” was done. “Schwartz test” was carried out. “Multiple tourniquet tests” was also carried out. “Modified Perthe's test” was done. “Brodie trendelenburg I and II” was also carried out. All these test results were recorded as per the study questionnaire.

10MHz probe was used for color doppler ultrasonography. This was done while we adopted the standing position for the patient. Long as well as short saphenous veins system was examined with this technique.

The important things noted were

- Saphenofemoral junction incompetence
- Saphenopopliteal junction incompetence
- Perforator incompetence
- Deep venous system
- Detection of abnormal perforators and veins.

Operative procedures

The following operative procedures were undertaken depending upon clinical and Doppler findings.

- “High, flush ligation of saphenofemoral junction with or without stripping of long saphenous vein”
- “High, flush ligation of saphenopopliteal junction without stripping of short saphenous vein”
- Incompetent perforator vein subfascial ligation.

After dressing the wound, graded pressure bandage was applied with the help of Elastic crepe bandage.

Wound were reviewed on day five and assessed about wound healing and looked for any complications.

Follow-up

All patients were discharged around 7-10 days after surgery with elastic crepe bandage and some of the patients who had complications had to stay back. They were all followed up at 15 days, 1, 3 and 6 months. Healing of varicose ulcers, recurrence of varicosity, and symptomatic relief were observed on follow up.

Statistical analysis

The data was analyzed using proportions.

RESULTS

Table 1: Distribution of study subjects as per demographic and clinical characteristics.

Demographic and clinical characteristics		Number	%
Age (years)	16-25	2	5
	26-35	9	22.5
	36-45	14	35
	46-55	7	17.5
	56-65	6	15
	> 65	3	7.5
Sex	Male	31	77.5
	Female	9	22.5
Side affected	Right	11	27.5
	Left	19	48.5
	Bilateral	10	25
Family history of varicose veins		6	15
Occupational exposure present		11	27.5

Table 1 shows distribution of study subjects as per demographic and clinical characteristics. The age of the patients ranged from 0 to 75. Commonest age group affected was between 36-45 years. Out of 40 patients 9 were female and 31 were male. Most commonly affected limb was left limb, (in pts 19.48%), when compared to right (in 11 pts 27%). Both the limbs were involved in 10 patients (25%). In 6 patients (15%) there was positive family history of presence of varicose veins and in 11 patients (28%) occupational influence was seen.

Table 2: Distribution of study subjects as per various symptoms and venous system involved.

Parameters		Number	%
Symptoms	Dilated veins	13	32.5
	Pain in the legs	10	25
	Venous ulcer	6	15
	Darkening of skin (ankle)	4	10
	Itching	2	5
	Chronic swelling of limbs	2	5
	Bleeding from trauma	1	2.5
	Tender swellings (superficial phlebitis)	2	5
Venous system	Long Saphenous system	22	55
	Short Saphenous system	8	20
	Both systems	10	25

Table 2 shows distribution of study subjects as per various symptoms and venous system involved. Patients presented with various symptoms of varicose veins like dilated veins in 32.5% of the cases, pain in the legs in 25% of the cases, venous ulcer in 15% of the cases, darkening of the skin at ankle in 10% of the cases, itching in 5% of the cases, chronic swelling of the limbs in 5% of the cases, bleeding from trauma in 2.5% of the cases. In 55% of the cases it was found that the long saphenous system was affected compared to short saphenous system in only 20% of the cases and in about one fourth of the cases, both the systems were affected.

Table 3: Distribution study subjects as per perforator incompetence and compression therapy.

Parameters		Number	%
Perforator incompetence	Thigh	5	12.5
	Below knee	19	47.5
	Above ankle	34	85
	Unnamed	6	15
Compression therapy	Symptomatic relief	8	56
	Signs of ulcer healing at 3 weeks	5	36
	Ulcer healing after surgery	12	85
	Ulcer recurrence	2	12

Table 3 shows distribution study subjects as per perforator incompetence and compression therapy. There were totally 64 Incompetent perforators present and commonest were above ankle perforator, which was present in 34 out of 40 pts (85%). 8 of our patients (56%) showed symptomatic relief with conservative treatment. In 5 pts (36%) ulcer showed signs of healing with compression for 3 weeks. 2 pts (12%) had ulcer recurrence.

Table 4: Distribution study subjects as per treatment given and complications.

Parameters		Number	%
Treatment given	"SFJ flush ligation with stripping of LSV"	8	20
	"SFJ flush ligation with stripping of LSV with incompetent perforator ligation"	19	47.5
	"SFJ, SPJ ligation with stripping of LSV with incompetent perforator ligation"	8	20
	"SPJ ligation without stripping of SSV"	3	7.5
	Conservative management	2	5
Complications	Seroma	4	10
	Hematoma	1	2.5
	Infection	2	5
	Limb edema	2	5
	Delay healing	7	17.5

Table 4 shows distribution study subjects as per treatment given and complications. In 19 cases SFJ ligation with stripping of LSV with incompetent perforator ligation was done and in 3 pts only SPJ ligation was done. 16 patients developed complications post operatively. Delayed wound healing was commonest among all and was seen in 7 cases.

Table 5: Distribution study subjects as per recurrence and days of hospital stay.

Parameters		Number	%
Recurrence	Sapheno femoral (35 limbs)	3	7.5
	Sapheno popliteal (11 limbs)	2	5
Hospital stay	7-10 days	33	82
	10-15	12	30
	15-20	2	5

Table 5 shows distribution study subjects as per recurrence and days of hospital stay. Of 35 limbs that were operated for SFJ junction, 3 cases had recurrence and of 11 cases for SPJ 5 (18%) developed recurrence. Out of 40 patients, 33 patients were discharged at the end of 10 days. 2 pts (5%) had to stay for more than 15 days.

DISCUSSION

We noted that most commonly affected age group was 36-45 years. This may be due to the fact that long standing occupations usually starts at around 20-25 years of age and takes about 10-15 years for the varicose veins to develop. Similar findings were also reported by Campbell et al.[5]

We observed that males were four times more affected than the females. 78% of all the cases were male in comparison to only 22% of the female cases. This may be due to the fact that males tend to stand more than the females and are more likely to join standing occupation compared to the females. Bradbury A et al also found that males were more affected (39.7%) in comparison to the females cases (32.2%) but the difference was not very wide as in the present study.[6]

We found that out of all cases left side of the lower limb was seen affected in majority of the cases (48%) in comparison to only 11 cases where the right side of the lower limb was found to be affected. Similar findings were reported by Russel et al.[7]

Our findings correlated with the occupation i.e. varicosity was more in those who were employed in the standing occupations compared to those who were not. 15% of our cases gave a family history of varicose veins. Ahti et al also reported that the prevalence of varicose veins in those doing long hours of standing jobs were common.[8]

We found that 32% of the cases that we studied had dilated and tortuous veins. Only 25% of the cases in the present study complained of pain. But in a study by Campbell et al, it was found that the pain was present in more than the double cases i.e. 57% of the cases.[5]

Out of 14 patients, 5 patients showed signs of healing at the end of 3 weeks. All were taken for surgery following which in 12 pts (85%) ulcer healed. Ulcer recurred in 2 patients (12%). Barwell et al and also Michaels, Campbell et al showed similar findings.[5,9,10]

Post-operative complications were seen in 41% (16) of the cases. The most common was delayed wound healing 7 (18%). Seroma in 4 pts, Hematoma in 1 pt, which got cleared by itself in 2 weeks others were wound infection in 2 (5%). Similar findings were noted by Defty, et al.[11]

We observed that 5% of the cases had incompetence at SFJ and 26% of the cases had incompetence at SPJ. Similar findings were reported by van Rij et al. However, the time period for follow up was not sufficient and also number of cases included could be small to assess the true incidence of recurrence.[12]

CONCLUSION

Conservative treatment though relieves symptoms, it cannot be the definitive treatment and it has to be followed by some form of definitive treatment. Operative line of treatment is a primary procedure in the management of varicose veins of lower limbs. Reduced morbidity was associated with "LSV stripping up to knee and non stripping of SSV". Reduced complications are associated with good surgical skills. Long term follow up is required.

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