

# A study on varicose veins cases attending to Government General Hospital, Anantapur

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## ABSTRACT

**Background:** Varicose veins are dilated, elongated, and torturous veins usually seen over the lower extremities of the body. They are usually asymptomatic in most of the subjects but may present with complications like edema, pain ulceration or sometimes even systemic complications. surgical management is the available choice when conservative management is failed. Relatively new surgeries like Radio Frequency ablation, Endovenous Laser ablation therapy are gaining importance over conventional surgeries like stripping. **Aims:** Current prospective study was undertaken to study epidemiological factors and also an attempt is made to compare between available modalities of treatment. **Results:** The results indicated that in our center incidence of varicose veins are common in male persons in their middle age who are in occupations that require long term standing. RFA and EVLA are novel surgical techniques for managing varicose veins that reduces hospital stay and promote earlier rehabilitation. Early detection and proper initiation of conservative management will reduce the requirement of surgery.

**Key words:** Endovenous laser ablation therapy, radiofrequency ablation, varicose veins

## INTRODUCTION

Varicose veins are defined as dilated, elongated, and tortuous veins. The word "varicose" is derived from the Latin word "varix," which means twisted. Synonyms include varices and varicosities. The adoption of erect posture by human beings greatly influenced the development of venous diseases of the lower limbs. Impairment of return of venous blood to the heart against gravity as a result of the erect position results in the development of chronic venous insufficiency.<sup>[1]</sup> Varicose veins constitute a progressive disease that becomes steadily worse. During most of instances, varicose veins remain asymptomatic. However, during its course, the disease might produce complications, which usually compels the patient to seek medical care.

In the Indian subcontinent, the incidence of varicose veins is estimated to be present in 23% of adults, of which 6% present with advanced chronic venous disease (CVD), including skin changes and healed or active venous ulcers. Varicose veins have long been considered a cosmetic problem that not only affected psychological well-being but also were not the source of disability. Varicosities are frequently known to cause discomfort, pain, loss of working days, disability, and deterioration of health-related quality of life.<sup>[2]</sup> In severe cases, CVD may also lead to loss of limb or loss of life.<sup>[3]</sup>

Evaluation of varicose veins has greatly progressed in the past two decades with the widespread availability of duplex ultrasonography. The treatment of varicose veins has also undergone dramatic changes with the introduction of percutaneous endovenous ablation techniques, including

endovenous laser ablation therapy (EVLA), radiofrequency ablation (RFA), and liquid or foam sclerotherapy. Open surgical treatment with stripping of the varicose veins, with the associated pain, potential for wound complications, and loss of working days, has been largely replaced by percutaneous out patient department-based procedures that can be performed under local or tumescent anesthesia with similar early and midterm results but with less discomfort to the patient, improved quality of life, and earlier return to work.

Varicose veins are due to primary venous disease. The most frequent cause is likely an intrinsic morphologic or biochemical abnormality in the vein wall, although the etiology can also be multifactorial. It is proposed that the origin of venous reflux in patients with primary varicose veins can be local or multifocal structural weakness of the vein wall and that this can occur together or independently of proximal saphenous vein valvular incompetence.<sup>[4]</sup> Varicosities can also develop because of secondary causes, such as previous deep vein thrombosis (DVT), deep vein valvular reflux (incompetence), deep venous obstruction, superficial thrombophlebitis, perforator incompetence, or arteriovenous fistula. Varicose veins may also be congenital and present as a venous malformation. Varicosities are manifestations of CVD. CVD includes various medical conditions of long duration, all involving morphologic and functional abnormalities of the venous system manifested by symptoms or signs (or both). In the aforementioned context, the current study is carried out to study of the varicose veins of lower limb in relation to demographic factors such as age, sex, occupation, clinical features, and severity grade of varicose veins of lower limbs. An attempt is made to study the different

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modalities of treatment available as for treatment of lower limb varicosities.

## MATERIALS AND METHODS

The current non-customized comparative unicenter study conducted at the Department of General Surgery, Government General Hospital, Anantapuramu, from February 2014 to July 2016 and included 150 patients. Before the study, consent from all the subjects were taken and also clearance from the Institutional Ethics committee was obtained. All patients admitted with lower limb varicose veins in hospital, aged 18–70 years and those who fit into CEAP: Class 1 to Class 6 are included in the study. Patients who are aged below 18 and above 70 years, those who are managed in outpatient department, subjects know to have DVT, those who have allergic to sclerosants, and those who are severely ill and pregnancy are excluded from the current study. Patients who suffering from venous ulcers and venous malformations are also included in the exclusion criteria.

A thorough history was taken in all the patients. A detailed clinical examination was done. All the clinical tests were applied, then all patients were subjected to duplex USG to confirm the diagnosis. The routine investigations were done. The patients underwent treatment based on their clinical and investigational profile. The post-operative course was noted. Further, the patients were followed up. Final outcome evaluated all the information was taken down in the pro forma designed for the study.

Follow-up Duplex ultrasound scan was performed at 1wk and 1 month, 5 months post procedure to assess SFJ and GSV occlusion, neovascularization, recanalization. All scans were performed by the same investigator to avoid interobserver variability with 5 months to 1 year follow-up period. Clinical improvement was assessed by the Revised Venous Clinical Severity Score questionnaire.

Pain satisfaction assessment is done by various pain scales. Patient satisfaction was assessed at 12 weeks using a visual analog scale rating of 0 cm (completely dissatisfied) to 10cm (completely satisfied). Patient satisfaction with cosmetic outcome and with overall treatment was assessed separately. The overall treatment satisfaction was a composite assessment that included treatment deliveries, length of procedure, follow-up treatment, and recovery. It gave an indication of patient acceptability of the procedure. All the tabulated results are analyzed using appropriate statistical methods.

## OBSERVATIONS AND DISCUSSION

### Varicose Veins Age Group-based Distribution of Cases

It is observed in the current study that most of the subjects with varicose veins are in 4th decade of age amounting to a percentage of 32% followed by 5<sup>th</sup> decade and 3<sup>rd</sup> decade. The incidence of varicose veins is quite low below 20 years and above 60 years. This finding indicates that varicose veins are more common in the age group of 30–50 years. In our study, youngest was 18 years and oldest was 70 years. This shows that the disease can occur in younger and active phase of life and people who

are active. Similar findings were noticed in a study conducted by Burkitt.<sup>[5]</sup>

### Varicose Veins Sex-wise Distribution

It is evident from this study that males are comparatively more prone for lower limb varicosities than females. Although the Western studies<sup>[6,7]</sup> show the female preponderance, in our study, 76% involved are males only 24% of patient were females who sought their treatment for complications rather than cosmetic reason. Probably Indian women cover their body with saree, and hence, they are not much bothered about the appearance of dilated veins.

### Occupation and Varicose Veins

Varicose veins are apparently seen in people whose occupations demand them for prolonged standing for hours together and violent muscular efforts. The present study indicated that approximately 65% of the patients are affected by prolonged standing and muscular efforts for long duration in their daily routines. In the current study, agriculturists, housewives, and teachers dominated the list of occupants who suffered from varicose veins. Similar findings are presented in studies conducted by Beebe-Dimmer *et al.* and Evans *et al.*<sup>[8,9]</sup>

### Varicose Veins Presenting Complaints

Majority of the patients in the current study presented with complications such as edema, pigmentation, and ulcer. Only a chunk of 1.33% of patients presented with prominent veins. From western studies on similar subject, it is obvious that dominant number of subjects were managed prominent veins only rather than for their complications. This finding reiterates that cosmetic appearance was the most common presenting complaint in the western countries, whereas in India, complications of varicose veins are the presenting one as the people seek medical care late. Similar findings are noticed in other studies.<sup>[10]</sup>

### Varicose Veins-common Limb Involved

The right limb (30.66%) involvement is less commonly presented in comparison to left limb varicosities (47.33%). Similar findings are noticed in studies done by Dur *et al.*<sup>[7]</sup> However, exact cause for the left side preponderance is not only known but also it has been postulated that the left iliac veins join at an angle and are kept pressed by left colon, and the comparative longer course traversed by the left iliac veins.

### Venous System Involved and Site of Incompetence

76.5% of the subjects of the current study presented with long saphenous venous system involvement, while 4.9% of patients presented with short saphenous segment involvement. The probable reason for this might be the length of long saphenous vein is more, the short saphenous vein runs in fascial tunnel from above the lateral malleolus to the popliteal fossa. The communicating veins are mostly indirect in short saphenous system, while direct communicating veins predominate in the long saphenous system. Majority of the subjects in the study presented with saphenofemoral and perforator incompetence. However, a small group including 12% of patients presented with isolated perforator incompetence.

## Duplex Ultrasonography

All the subjects included in the current study underwent duplex ultrasonography as a part of routine pre-operative investigation. Duplex ultrasonography was made as a mandatory protocol as it paves way for improved surgical outcome and decreases the recurrence rates. Similar postulations were made by other authors in their studies conducted elsewhere.<sup>[11-13]</sup>

## Varicose Veins Management

60% of the total involved limbs underwent foam sclerotherapy for perforators of all endovenous procedures done for main superficial veins. As for as main trunks are considered, EVLA was carried out for 27.1% of cases, RFA was carried out for 30.5% of cases, while flush ligation along with stripping is done for 31.1% of limbs. The effectiveness of the mentioned procedures is in concurrence with the finding presented by other authors.<sup>[14-16]</sup>

## Varicose Veins Post-operative Complications

Only minor complications were encountered postoperatively during the current study which was managed conservatively. Four cases presented with wound infection. The study conducted by Haggmuller<sup>[17]</sup> showed the incidence of some major complications none of which occurred in the present study group. Three limbs in the current study reported back with recurrence who underwent endovenous procedures due to recanalization and they later underwent foam sclera therapy. This shows the importance of duplex scan for accurate diagnosis of their incompetency to prevent recurrence.

## CONCLUSION

Varicose veins are quite prevalent in active phase of life with male sex preponderance. They are common in people who are in occupations that demand prolonged standing and violent muscular effort. Majority of the patients had long saphenous incompetency, and the complications are more when both valvular and perforator systems are involved. Further, it can be stated that Duplex Ultrasonography is the investigation of choice as to diagnosis and prevention of recurrence. Accurate pre-operative evaluation and ligation/ablation of site of incompetency are key to success. Majority of patients simply require reassurance rather than surgery. Meticulous diagnosis with early conservative management such as prescription of compression stocking will prevent unnecessary, delayed referral at a later stage. Minimally invasive treatment options such as injection sclerotherapy and endovenous modalities should suffice for better management outcomes. It is to be mentioned that RFA ablation is associated with less pronounced post-procedural pain syndrome when compared with EVLA. It is observed in this study that the occlusion rates of main trunks and recanalization rate of the target vein are not significantly different by in follow-up among endovenous procedures. EVLA and RFA offers for an excellent alternative to conventional surgery in the treatment of symptomatic varicosities due to an incompetent great saphenous vein with saphenofemoral Junction. In the delivery of modern-day surgical services, the trend is shifting toward less invasive interventions is undisputable. It can be further emphasized that the less invasive interventions would lead to a reduction in complications, length of hospital stay, and cost factor over the

The delivery of varicose vein services has towed the same line as the rest of surgery. As it is well-known fact that not every patient or every varicose vein will be suitable for endovenous ablation, but surgery would still play an important role in the management of varicose veins. The growth in the use of foam sclerotherapy means that there is yet another effective tool for management of saphenous vein.

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