

Original Research Article

A CLINICAL STUDY OF VENOUS ULCERSNaveen Kumar Lomte¹, Jadhav Parthasarathi², Manoj Kumar D³¹Assistant Professor, Department of General Surgery, Government Medical College, Kamareddy, Telangana, India.²Associate Professor, Department of General Surgery, General Surgery, Government Medical College, Kamareddy, Telangana, India.³Assistant Professor, Department of General Surgery, General Surgery, Government Medical College, Kamareddy, Telangana, India.

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ABSTRACT

Background: Venous ulcers are the most common type of chronic lower limb ulcers, accounting for nearly 70–80% of leg ulcer cases. They result primarily from chronic venous insufficiency due to venous hypertension, leading to skin changes, edema, and ulceration. Venous ulcers are associated with prolonged healing time, frequent recurrence, reduced quality of life, and considerable healthcare costs. Early diagnosis, appropriate wound care, compression therapy, and correction of underlying venous pathology are essential for successful management. The Objective is to evaluate the clinical profile, risk factors, presentation, management strategies, and treatment outcomes of patients with venous ulcers.

Materials and Methods: This study was a prospective hospital based study conducted in Government General Hospital, Kamareddy. Data was collected through a prescribed proforma from the patients admitted in Department of General surgery, Government Medical College, Kamareddy with clinical diagnosis of venous leg ulcers during the period December 2024 to November 2025. All the cases which satisfy the inclusion criteria will be included in the study. Informed consent will be taken and the history, clinical, imaging and laboratory parameters will be recorded in predesigned data sheet.

Results: In the present study, it is also found equally common among young adults in my study. Male: Female incidence is 15:1. Females here are more homebound and they can relax more in between their working hours, thereby reducing the risk of varicosity and its complications. Varicosity is the most common etiology for venous leg ulcer. DVT as a cause of venous ulcer as per my study is only 4%. Manual labourers are predisposed to venous ulceration. The common associations of ulcer are varicosity (100%), hyper pigmentation (68%) followed by edema and pain, especially on prolonged standing which is relieved by keeping legs elevated. Incidence of venous ulcer was almost same on both sides. Healing rates are promising in cases treated surgically, etiology of ulcers, age group of patients doesn't significantly interfere in healing of ulcers. In the follow up period of three months to one and half years there was no incidence of recurrence.

Conclusion: Venous ulcers remain a significant cause of chronic lower limb morbidity. Comprehensive clinical assessment, early diagnosis of venous insufficiency, meticulous wound care, effective compression therapy, and appropriate surgical management when indicated contribute to improved healing and lower recurrence rates. Patient education regarding limb elevation, compression compliance, lifestyle modification, and regular follow-up plays a vital role in achieving favorable long-term outcomes.

Keywords: Venous Ulcer, Chronic Venous Insufficiency, Compression Therapy, Wound Healing, Varicose Veins, Lower Limb Ulcer.

INTRODUCTION

Venous ulcers are not a new problem; they are well known to have plagued humankind since ancient times. The first written description of treatment of probable venous ulcers was found in the Papyrus of Eber originating from Egypt around 1550 BC. In the Milan Cathedral in Italy, four big paintings show miracles Performed by Saint Carlo for patients with leg ulcers in the beginning of the 17th century.^[1]

"The chronic venous leg ulcer is defined as an ulcer distal to the knee, caused mainly by venous dysfunction, which does not heal within six weeks."^[2]

They occur as a late consequence of chronic ambulatory venous hypertension, which is caused by outflow obstruction and reflux due to superficial or deep venous incompetence.^[3]

Ever since its known its incidence had been increasing which comprises about 60%-70% of all ulcers in the lower leg.

The classical presentation of a venous leg ulcer is an irregularly shaped partial thickness wound with well-defined borders surrounded by erythematous or hyperpigmented indurated skin. Venous ulcers vary in size and location but are most common on the distal medial aspect just above the medial malleolus(Gaiter area).^[4,5]

The prevalence of non-healing leg ulcers varies in different published reports.^[6]

The point prevalence is likely to be in the region of 0.1-0.3%.^[6]

The prevalence increases dramatically with age. More than 1-3 % of the patients are over the age of 60 years.^[7]

Despite the high prevalence of venous ulcer, it is often neglected or managed inadequately and thus has a significant socioeconomic impact in terms of medical care, days off work and reduced quality of life.

As there are various treatment modalities available, it is essential to individualise the treatment for every patient, so as to ensure comprehensive care and effective wound closure.

A multidisciplinary approach with different medical specialists such as a dermatologist, vascular surgeon, plastic surgeons, and well trained nurses has demonstrated increased healing rates with decreased recurrences.^[8]

Though important advances have been made in the management of leg ulcers, India lags far behind the standards set by the European countries. Treatment is fragmented, poorly taught and inadequately researched. The average time taken to heal an ulcer is about six months and some persist for years. Good management depends on accurate diagnosis, simple and appropriate care of the wound and treatment of underlying cause.

A limited number of studies have investigated in detail the clinical study and management of venous ulcer especially in rural set up. This study aims to

provide information on the management of venous leg ulcer in rural set up.

OBJECTIVES

1. To study the etiology of venous ulcers of lower limb.
2. To study the age and sex distribution of venous ulcers of lower limb.
3. To study the effect of occupation on the incidence of venous ulcers of lower limb.
4. To study the treatment modalities of venous ulcers and its outcome.

MATERIALS AND METHODS

Source of Data: Data was collected through a prescribed proforma from the patients admitted in Department of General Surgery, Government Medical College, Kamareddy with clinical diagnosis of venous leg ulcers during the period December 2024 to November 2025.

METHOD OF COLLECTION OF DATA

This study was a prospective hospital based study conducted in Govt Medical College, Kamareddy. All the cases which satisfy the inclusion criteria will be included in the study. Informed consent will be taken and the history, clinical, imaging and laboratory parameters will be recorded in predesigned data sheet.

Sample Size

50 cases of venous leg ulcers admitted to surgical department of Government General Hospital Kamareddy during the period from December 2024 to November 2025. Among 50 patients who had venous ulcerations, 50 patients were due to varicose veins and of them 2 patients had DVT. A detailed history including symptoms, duration of ulcer, mode of development, occupation, previous surgery was taken. The patients were examined in both standing and recumbent postures. The location, size, floor of the ulcer and secondary changes in the leg including pigmentation, mobility of ankle joint were noted. Legs were examined individually for varicosities. Saphenofemoral /Saphenopopliteal and perforator incompetences were made out by Trendelenburg, multiple tourniquet test and Schwartz test. Deep vein assessed by modified Perthe's test. Perforator incompetences were localized by palpating the deep fascia for defects. Arterial pulses of both feet examined to rule out arterial components. Abdominal and pelvic examination were done to rule out tumors, dilated suprapubic veins and ascitis. Doppler and Duplex imaging was used to rule out DVT and localize perforator incompetence in all cases.

Routine investigations of blood were done. Swab taken from the wound and antibiotics prescribed according to culture and sensitivity. Patients were treated with initial Hydrogen Peroxide and Povidone Iodide until wound became healthy and then normal saline dressing was done daily. Elastocrepe bandage was applied from the level of head of metatarsal up

to the knee. The limb was kept elevated by raising the foot end of the bed. 46 patients underwent surgery. The choice of surgery was determined by the extent of disease and patients general condition. The procedures done included Trendelenburg operation, complete stripping of long saphenous vein, sub-fascial ligation of perforators, under spinal anaesthesia. After performing the surgery, a layer of pad and cotton bandage was applied, over which elastocrepe bandage was also applied. The dressings were changed on the 3rd POD. Patient was allowed to walk after 12 hours. The sutures were removed after 10 days. They were advised to avoid prolonged

standing and to wear elastocrepe bandage for 6 months, and come for follow after 2-3 weeks.

Inclusion Criteria

All the patients admitted with clinical diagnosis of venous leg ulcers above 18 years admitted to surgical department of Government General hospital, Kamareddy.

Exclusion Criteria

Patients not willing to give consent for study, proven cases of arterial ulcers, traumatic ulcers. Diabetic ulcers, ulcers due to malignancy, neuropathic ulcers.

RESULTS

Table 1: Age distribution

Age Group (in years)	No of cases	Percentage
21-40yrs	30	60
41-60yrs	17	34
>60yrs	3	6

Table 2: Sex distribution

Sex	No of cases	Percentage
Male	47	94
Female	3	6

Table 3: Occupation

Occupation	No of cases	Percentage
Labourers	45	90
House wife	1	2
Police	4	8

Table 4: Laterality

Side	No of cases	Percentage
Left	23	46
Right	24	48
Bilateral	3	6

Table 5: Symptoms

Symptoms	No of cases	Percentage
Pain	27	54
Itching	30	60
Hyperpigmentation	34	68
Pedal oedema	3	6
Varicosity	47	94
Bleeding	1	2

Table 6: Culture Sensitivity from ulcer

Organism grown	No of cases	Percentage
Staph.aureus	16	32
Klebsiella	5	10
E.coli	7	14
Pseudomonas	4	8
Mixed	4	8
No growth	14	28

Of the 50 venous ulcer discharge 's culture sensitivity, E. COLI were found in 14% and

Staphylococcus aureus had 32% each, no growth in 28% of cases.

Table 7: Venous system affected

Defect	No of cases	Percentage
Long Saphenous Varicosity	45	90
Saphenofemoral incompetence	38	76
Perforator incompetence	42	84
Small saphenous varicosity with SPI	3	6

Combined small & long saphenous varicosity	2	4
Bilateral disease	2	4
DVT (Perthe's Sign +)	2	4

Table 8: Treatment

Surgery	No of cases	Percentage
Trendelenberg operation	38	76
Short Saphenous Vein Ligation	3	6
Subfascial ligation of perforators	39	78
Conservative Treatment	4	8
Skin grafting	12	24

Table 9: Complication

Complications	No of cases	Percentage
Wound infection	8	16
Wound haematoma	2	4
Wound gaping	4	8

DISCUSSION

The incidence of venous leg ulcer and the etiological factors are studied from the patients admitted in Government General Hospital, Kamareddy and the data regarding the signs and symptoms, laboratory and radiological investigations are analysed from the fifty cases admitted to our hospital between December 2024 to November 2025.

Age Incidence

In our study maximum cases were in the middle age group (20-40yrs). Mean age of patients in our study was 40.7yrs, where as in Abbade et al,^[9] it was 57yrs, in another study by K K Sethia¹¹, mean age of patients with venous ulceration was 55.4yrs.

In the study by O.nelzen,^[10] 61% of all patients experienced their first ulcer episode before age of 65yrs. There is no statistical significance between age of patient and the healing of ulcers in the present study.

Sex Incidence

In our study the majority of cases were males contributing to 94%. Whereas studies by Abbade et al, 9 O Nelzen et al 10, K K Sethia et al,^[11] and SR Baker et al,^[12] showed female preponderance.

Laterality

In a study by Abbade et al,^[9] 58.3% of patients presented with an ulcer on left leg and 55.8% on right leg, 15% of these were bilateral ulcers and in another study by SR Baker et al,^[12] 56% of cases had ulcers on left leg, 44% on right leg, 15% of these were bilateral, similarly in a study by O Neizen et al,^[10] ulcers on left leg accounted for 44%, 35% on right leg, and 21% bilaterally. In our study 48% were in right leg and 46% were in left leg.

Symptoms

According to Abbade⁹ varicose veins noted in 86.6% of patients with venous ulcers, J Saarinen's,^[13] study showed that, in patients with venous ulcerations pain in 81%, edema in 86%, itching in 19% of cases noted. O Nelzen showed venous ulcers were painful in 31% of cases.^[10]

Organism cultured

In the present study most common organisms cultured from the venous ulcer discharge was Staph aureus accounting for 32%. Whereas according to Joseph gray et al, in venous leg ulcers the most common organism include staphylococcus aureus, pseudomonas aeruginosa and beta haemolytic streptococci, in another study by Randall et al,^[14] Staphylococcus aureus in 41.5%, E.coli in 6.9% cases.

Etiology

In a study by Abbade et al,^[9] in patients with venous ulcer, varicose veins were found in 86.6% cases, h/o DVT was reported in 10.8% of cases. In another study by S R. Baker et al,^[12] venous insufficiency noted in 57%, h/o DVT was present in 17% of cases, h/o previous venous surgery present in 30% of cases. Similarly, in a study by O Nelzen et al, venous insufficiency was noted in 100% of cases, 24% of cases had h/o previous venous surgery.^[10] In our study all cases had varicosity and 4% had DVT.

Venous System Involved

In the present study, on examination long saphenous varicosity noted in 90%, short saphenous varicosity in 6%, combined short and long system varicosity in 4%. These findings were similar to the study by J Saarinen et al, long saphenous involvement in 83% cases, short saphenous involvement in 2% cases, whereas in a study by Nicos labropoulos et al, long saphenous varicosity was seen in 61%, short saphenous varicosity in 9%, combined in 30% cases.

Treatment Aspect

In the present study, 8% of cases were managed conservatively and 92% were managed surgically, i.e Trendelenberg operation in 76%, subfascial ligation of perforators in 78%, SSV ligation in 6%. At the follow up at 3-6wks, 70% of cases had completely healed ulcers which included all cases which underwent skin grafting and 30% showed decrease in ulcer size. At 3 months follow up of surgically treated cases, showed 100% healing, whereas 3 of 4 cases conservatively managed showed healing.

Alfred obermayer et al,^[15] concluded in his study that, venous surgery is possible and indicated at any

stage, whether years of conservative therapy have failed or whether patients have an ulceration for only a few weeks. Ralph de Palma et al,^[16] concluded in his study that, non-operative treatment even in skilled hands, is associated with prolonged disability and recurrence, which can be improved significantly with operative intervention. According to the study by V. Jankunas et al,^[17] skin grafting positively influences quality of life by fastening the healing rate of ulcer, also reduce the total expenditure of ulcer treatment. F T Padberg et al,^[18]in his study concluded that, external compression technique retain a substantial role in the management of venous ulceration, but success is directly related to patients adherence/compliance to the treatment regimen. Healing of 93% was achieved by simple, straight forward regimen of daily cleaning and elastic compression in university of Oregon, and 92% healing at Wisconsin medical college.^[19]

According to M Guest et al,^[20] in the treatment of venous ulceration superficial venous surgery gives no additional benefit to compression therapy in healing of ulcer. Wijnand et al,^[21] in his study concluded that patients with medial and recurrent ulceration should receive surgery combined with compression therapy. According to the ESCHAR study by Jamie Barwell et al,^[22] healing rates were similar in the compression+surgery group and compression group but recurrence rates were significantly reduced in compression+surgery group. Although almost any varicose veins can be treated by surgery, not all patients will want to have open surgery.

In spite of its current status as gold standard, it is inevitable that the role of standard surgery in the treatment of lower limb varicose veins will shrink significantly in nearest future, in line with expansion of minimally invasive techniques.

CONCLUSION

In this study, we observed people from rural set up come to hospital when the symptoms are severe. This study revealed that the most common association to venous ulcers of lower limb is varicose veins. This study revealed that the disease is prevalent in active phase of life and male preponderance. Occupations involving prolonged standing and violent muscular effort are prone for the disease. Majority of the patients had long saphenous vein incompetence and complications are more when both valvular and perforator systems are involved. Compression stockings alone may be appropriate for patients who are too unfit for intervention or those who do not wish to have any form of surgical intervention. Conventional open

surgery has also improved with Duplex mapping, smaller incisions and better outcomes.

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