## **Original Research Article**

DOI: http://dx.doi.org/10.18203/2349-2902.isj20170617

# To evaluate lower extremity ulcer cases in respect of their aetiological basis

### Gajjam Shrinivas A.1\*, Wagh Amol<sup>2</sup>

<sup>1</sup>Department of General Surgery, Mallareddy Institute of Medical Sciences, Suraram, Hyderabad, Andhra Pradesh, India

Received: 19 January 2017 Accepted: 29 January 2017

# \*Correspondence: Dr. Gaijam Shriniyas A.

E-mail: drgajjamshrinivas@rediffmail.com

**Copyright:** © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

#### **ABSTRACT**

**Background:** Lower extremity ulcer is most common in our population due to their chronicity. Lower extremities are exposed to injury and having a circulation strained by upright posture. This has reason for researchers and surgeon who have been concerned with the reasons for their common occurrence and difficulty in their cure. Researcher interested to study the lower extremity ulcer cases in respect of their aetiological basis.

**Methods:** 100 patients of lower extremity ulcer with various types were admitted in surgical wards of Mallareddy Institute of Medical Sciences, Hyderabad during study period. The cases were examined in detail and investigated thoroughly. If there is clinically doubtful case, the diagnosis was made only after histopathological examination.

**Results:** Most common type of ulcer was found in the present was venous 25 (25%) cases, contributed by male (21) and female (04) followed by diabetic 22 (22%) and Traumatic 18 (18%). Most of cases belongs to the age group 41-60 years (45) and male (37 cases). High saphenous vein ligation with stripping of veins (21.4%) and conservative (21.4%) treatment were common surgical procedures used for the treatment of Venous ulcer.

**Conclusions:** In the present, Venous ulcers are the most common of all leg ulcers with high morbidity. The surgical procedures are directed at prevention of venous reflux at various levels.

Keywords: Aetiology, Lower extremity, Surgery, Ulcer

#### **INTRODUCTION**

Lower extremity ulcer is most common in our population due to their chronicity. Not only from lower and middle strata but also from upper class, this problem affects more in adults, who are in their prime working age. At many places, lower extremity ulcers are considered unimportant of all the disease and its management is usually done by the most junior in the unit. As a result of the ageing population and increased risk factors for atherosclerotic occlusion such as smoking, obesity, and diabetes, there is rising in incidence of ulceration. The overwhelming majority of leg ulcers are of venous origin, cited in the

Venous ulcers, or stasis ulcers, account for 80 percent of lower extremity ulcerations.<sup>3</sup> Other lower extremity ulcerations include arterial insufficiency; prolonged pressure; diabetic neuropathy; and systemic illness such as rheumatoid arthritis, vasculitis, osteomyelitis, and skin malignancy are less common etiologies.<sup>4</sup>

The main mechanisms behind venous ulcers are reflux, venous out flow obstruction, or the combination of the two.<sup>5</sup> Ulcers of skin can result in complete loss of the

<sup>&</sup>lt;sup>2</sup>Department of General Surgery, J. J. Hospital, Mumbai, Maharashtra, India

epidermis and often portions of the dermis and even subcutaneous fat.<sup>6</sup> If these ulcers are to heal quickly the underlying cause is to be removed which necessitates the correct diagnosis bases on detailed history, clinical examination and investigation and proper treatment and follow up. With right approach, the vast majority heal with simple ambulatory outpatient therapy the essential requirement for treating lower extremity ulcer include a thorough understanding of lower extremity anatomy vascular haemodynamic and management of inflammatory skin changes.

In the course of a lifetime, almost 10% of the population will develop a chronic wound, with a wound-related mortality rate of 2.5%. Of these, underlying venous pathology is the most common aetiology of lower extremity ulceration. An integrative review of previous studies on quality of life in patients with venous ulcers was published, which confirmed the negative impact of the disease on health-related quality of life. Venous ulcers are often recurrent, and open ulcers can persist from weeks to many years. A correct diagnosis is essential to avoid inappropriate treatment that may delay wound healing, cause deterioration of the wound, or harm the patient.

The present study is based on the patient of lower extremity ulcer of different etiology, which was treated in Mallareddy institute of medical sciences for one year. The treatment advocated was mainly minor surgical procedure, chemotherapy posture, elastic compressor bandaging and surgery. In this study, which follows an attempt is made to evaluate the results obtained by these procedures. Aim of the study was to evaluate lower extremity ulcer cases in respect of their aetiological basis.

#### **METHODS**

The present is prospective study design. In the present study, 100 patients of lower extremity ulcer with different types were included during study duration. And they were admitted in surgical wards of Mallareddy Institute of Medical Sciences, Hyderabad. Detailed records of the cases were maintained through standardized proforma.

The cases were examined in detail and investigated thoroughly. The ulcers were associated with signs and symptoms and these included pain, swelling, burning sensation, itching, heaviness, restless limb, skin discoloration, and lipodermatosclerosis.

In clinically doubtful cases, the diagnosis was made only after histopathological examination. The treatment advocated was mainly minor surgical procedure, chemotherapy posture, elastic compressor bandaging and surgery. In this study, which follows an attempt is made to evaluate the results obtained by these procedures. Data were entered in Microsoft excel and analysis was performed.

#### **RESULTS**

Table 1: Age and sex distribution.

Age group (years)	Male (%)	Female (%)	Total (%)
< 40	32 (76)	10 (24)	42 (42)
41 - 60	37 (82)	8 (18)	45 (45)
>= 61	11 (85)	2 (15)	13 (13)
Total	80 (243)	20 (57)	100 (100)

Majority of cases belongs to the age group 41-60 years (45) and male (37 cases) also presented in Table 1.

Table 2: Different types of ulcers.

Type of ulcers	Male	Female	Total (%)
Venous	21	04	25 (25)
Diabetic	15	07	22 (22)
Traumatic	13	5	18 (18)
Arterial	12	2	14 (14)
Leg ulcer AV fistula	11	2	13 (13)
Trophic	08	00	08 (08)
Total	80	20	100 (100)

Most common type of ulcer was found in the present was venous 25 (25%) cases, contributed by male (21) and female (04) followed by diabetic 22 (22%) and traumatic 18 (18%) presented in Table 2.

Table 3: Various types of surgical procedure used for the treatment of venous ulcer.

Types of procedure	Male	Female	Total
Debridement of ulcer with skin grafting	05	01	06
High saphenous vein ligation with sripping of veins (Trendelenburg)	04	00	04
Subfacial ligation of perforator	04	00	04
Subfacial ligation of (previously treated varicose vein) perforating vein	03	00	03
Sclerotherapy	02	00	02
Conservative	03	02	05
Total	21	04	25

Rest, elevation and compression bandaging treated all patients of venous ulcer till ulcer healed or become healthy before any surgical intervention. High saphenous vein ligation with stripping of veins (21.4%) and conservative (21.4%) treatment were common surgical procedures used for the treatment of Venous ulcer presented in Table 3.

#### **DISCUSSION**

In the present study, 100 cases of lower extremity ulcer have been studied in relation to their etiology clinical features and management.

The importance of gravity in the cause of venous ulcer was stress by Brodic, Hilton and recently by Angle and Bergan. Gay was the first shown that, such ulcers are due to obstruction of trunk veins (deep and superficial) and that varicose vein play no part. Venous ulcers are often recurrent, and ulcers can persist from weeks to many years. Severe complications include cellulitis, osteomyelitis, and malignant change.<sup>13</sup>

Chronic ulceration of lower extremity following deep vein thrombosis is a condition that undoubtedly has plaqued the human race since man assumed the erect position. Venous ulceration occurs in the gaiter area in 95% of cases especially around the malleolar region.<sup>14</sup>

On the basis of study conducted, a conception of pathogenesis is suggested the main links of which are micro circulatory disorder in the system of perforating veins of a closed structure and deficient resolution of fibrin due to diminished local fibrinolytic activity of the plasma insufficient ferber splitting leads to the formation of paravasal collagen cuffs preventing normal exchange between the capillaries and tissues. Is It has been reported that, ulcers associated to venous insufficiency comprise 70%, arterial disease 10%, and ulcers of mixed etiology 15% of leg ulcer presentations. In the remaining 5% of leg ulcers result from less common pathophysiological causes, and this last group include considerable challenges in assessment, diagnosis and management.

Venous ulceration is a chronic disease, which is distinguished by periods of exacerbation and remission. Due to longer duration for healing of venous ulcers frequently, which affects in physical and psychological discomfort and negatively affects a patient's functional status.<sup>18</sup>

It is mostly to atherosclerosis of thromboangitis obliterians (Buerger's disease) can be 'pure' when ulcer is only due to obliterate arterial disease or combined when it is associated with varicose veins or post-thrombotic disease. Arterial leg ulcers occur as a result of reduced arterial blood flow and subsequent tissue perfusion. 19

Avoidance of weight bearing special shoes, to debridement is often effective. For neuropathy vitamin B12 injection is tried. Diabetic patients can develop ulcers due to higher risk for arterial diseases and neuropathy. In addition, hyperglycemia poses the risk of ulcers secondary to neuropathic impairment of sensory, motor, and autonomic function, typically in the hand and foot, or "stocking and glove" distributions.<sup>20</sup>

From peripheral vascular disease, the major underlying causes are noted to be peripheral neuropathy and ischemia. Other factors in ulceration are trauma, deformity, callus formation, and edema.<sup>21</sup>

#### **CONCLUSION**

As case reports scattered throughout the literature, extremely rare ulcers of numerous etiologies are existing only. In this study, it was found that, venous ulcers (25%) are the most common of all leg ulcers with high morbidity. Many times, it is not properly diagnosed and, unnecessarily, expensive treatment is undertaken. Conservative management with leg elevation and compression therapy is effective and is the mainstay of therapy, particularly in the elderly and informs not suitable for surgery. No particular dressing material has been found to be superior to the others. Surgery will require for those who, ulcers of prolonged duration not responding to conservative measures or patients may be for life style reasons, are unable to undertake it. At prevention of venous reflux at various levels, the surgical procedures are recommended.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was a

Ethical approval: The study was approved by the

institutional ethics committee

#### **REFERENCES**

- 1. Lautenschlager S, Eichmann A. Differential diagnosis of leg ulcers. Curr Probl Dermatol. 1999;27:259-70.
- Mekkes JR, Loots MAM, Wal AC, Box JD. Causes, investigation and treatment of leg ulceration. Br J Dermatol. 2003;148:388-401.
- 3. Meara S, Kurdi D, Ovington LG. Antibiotics and antiseptics for venous leg ulcers. Cochrane Database Syst Rev. 2008;(1):CD003557.
- 4. de Araujo T, Valencia I, Federman DG, Kirsner RS. Managing the patient with venous ulcers. Ann Intern Med. 2003;138(4):326-34.
- 5. Nicolaides AN, Allegra C, Bergan J. Management of chronic venous disorders of the lower limbs: guidelines according to scientific evidence. Int Angiol. 2008;27:1-59.
- 6. Gent WB, Wilschut ED, Wittens C. Management of venous ulcer disease. British Med J. 2010;341(7782):1092-6.
- 7. Karl T, Modic PK, Voss EU. Indications and results of VAC therapy treatments in vascular surgery-state of the art in the treatment of chronic wounds. Zentralbl Chir. 2004;129(1):574- 9.
- Collins R, Seraj S. Diagnosis and treatment of venous ulcers. Am Fam Physician. 2010;81:989-96.
- 9. Consuegra RV, Verdu J. Quality of life in people with venous leg ulcers: An integrative review. J Adv Nurs. 2011;67:926-44.

- Briggs M, Nelson EA. Topical agents or dressings for pain in venous leg ulcers. Cochrane Database Syst Rev. 2003;1:CD001177.
- 11. Nelzen O, Bergqvist D, Lindhagen A. Long-term prognosis for patients with chronic leg ulcers: a prospective cohort study. Eur J Vasc Endovasc Surg. 1997;13(5):500-8.
- 12. Samson RH, Showalter DP. Stockings and the prevention of recurrent venous ulcers. Dermatol Surg. 1996;22(4):373-6.
- 13. Collins L, Seraj S. Diagnosis and treatment of venous ulcers. American Family Physician. 2010;81(8):989-96.
- 14. Grey JE, Harding KG, Enoch S. Venous and arterial leg ulcers. British Med J. 2006;332(7537):347-50.
- 15. Gostishchev VK, Khokhlow AM. Pathogenesis of trophic ulcers in varicose veins of the lower extremities. Khirurgiia. 1991;10:100-5.
- 16. Casey G. Causes and management of leg and foot ulcers. Nursing Standard. 2004;18(45):57-8.

- 17. Gottrup F, Karlsmark T. Leg ulcers: uncommon presentations. Clin Dermatol. 2005;23(6):601-11.
- 18. Antal SC, Reissr. Post-thrombotic leg ulcer and its surgical treatment. Am J Surg. 1976;131(6):710.
- 19. Faria E, Blanes L, Hochman B, Filho MM, Ferreira L. Health-related quality of life, self-esteem, and functional status of patients with leg ulcers. Wounds. 2011;23(1):4-10.
- Moffatt C. Leg ulcers in vascular disease, S. Murray. Whurr Publishers, London, UK; 2001:200-37
- 21. Clayton W, Elasy TA. A review of the pathophysiology, classification, and treatment of foot ulcers in diabetic patients. Clinical Diabetes. 2009;27(2):52-8.

**Cite this article as:** Shrinivas GA, Amol W. To evaluate lower extremity ulcer cases in respect of their aetiological basis. Int Surg J 2017;4:946-9.