

A Comprehensive Study on Leg Ulcers in Southern Odisha

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Abstract

Background: An ulcer is an injury that could influence the health of the people. It can be understood as wound with a full thickness and depth. This is having slow tendency of healing that affect the physical activities of an individual. The slow healing of ulcers is a major issue with the people as it cannot be analyzed and understood through depth and size. However, it can be understood by identifying the pathologic fact that needed to be removing to improve the healing. In this situation the leg itself create the problem and increase the risk and lead to surgery. This kind of problem is common among the elder people due to changes in the etiology and underlying the various diseases

Aim: To study the clinical features of various types of leg ulcers and effectively manage the condition.

Methods: The design of study was Prospective study and conducted at Post Graduate Department of General Surgery, M.K.C.G Medical College & Hospital, Berhampur. For the current study 197 patients who presented with various leg ulcers admitted to the General Surgery Department of MKCG Medical College and Hospital, Berhampur, Odisha from July 2018 to June 2020 including a three month of follow up period.

Results: The venous ulcers occurred more commonly in the gaiter zone (75%), least in the foot (4%). Diabetic ulcer was not found in the gaiter zone whereas arterial ulcer was exclusively found in the foot. Moreover, the association of various systemic diseases with different leg ulcers. Anaemia is associated in 8% cases, peripheral arterial disease in 4%, TAO in 4%, Varicose Veins in 12%, DVT in 2%, Malignancy in 5%, Leprosy in 3% and Diabetics in 51%. It can be seen that Diabetes Mellitus is the most common followed by vascular ulcers associated disease for leg ulcers.

Keywords: *Ulcers, Chronic Leg Ulcer and leg ulceration*

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Background

An ulcer is an injury that could influence the health of the people. It can be

understood as thick and deep wound. This is having slow tendency of healing that

affect the physical activities of an individual [1]. The occurrence of ulcer is result of complete loss of skin which is epidermis and portions of the dermis and even subcutaneous fat [2]. The problem of ulcers is common among the old age people with risk factor of atherosclerotic occlusion such as diabetics, obesity, and smoking [3].

The slow healing of ulcers is a major issue with the people as it cannot be analyzed and understood through depth and size. However, it can be understood by identifying the pathologic fact that needed to be removing to improve the healing [4]. In addition to this, Chronic Leg Ulcer (CLU) is defined as chronic lower limb ulcer which is consider as wound of leg that shows show slow healing. It may take time up to 12 months of healing after treatment [5].

To provide the treatment for the patient of leg ulcers it is essential for the care professionals to identify and analyze the different leg ulceration focusing on the large differential [6]. However, there are many issues that influence the ulcer but the most important one is anatomical situation ulcers. In this situation the leg itself create the problem and increase the risk and lead to surgery [7]. This kind of problem is common among the elder people due to changes in the etiology and underlying the various diseases [8].

According to analysis, the prevalence of leg ulcers is between 0.18% to 1% among the elder population and influencing the physical and mental health. However, the site of ulcer is identified among 90% of population in gaiter areas and 2% were facing issues related to foot and 8% in the leg [9]. In addition to this, the problem of ulcers is more common among the females and there age is not the major factor as it was identified all age groups of women [10]. As per the study 68% of adult's ages between 20 to 70 years in European nation were having issues of CLU and there are 19% of male and rest of the women [5].

Aim

To study the clinical features of various types of leg ulcers and effectively manage the condition.

Method And Materal

Study Design

Prospective study

Place Of Study

Post Graduate Department of General Surgery, M.K.C.G Medical College & Hospital, Berhampur

Duration: (July 2018- June 2020)

197 patients who presented with various leg ulcers admitted to the General Surgery Department of MKCG Medical College and Hospital, Berhampur, Odisha from July 2018 to June 2020 including a three month of follow up period.

Inclusion Criteria:

All the patients who presented with various leg ulcers (diabetics, venous, arterial, malignant, traumatic, trophic).

Exclusion Criteria:

Patient age < 13 years.

Study Methods:

After admission of the patient a thorough general physical examination is done. After completing general examination, local examination of the ulcers was done and the site, number, margin, edge, floor and discharge of the ulcer is noted. Further investigations such as Doppler study, Pus Culture and Sensitivity, X Ray, routine Blood Serum Investigation, Biopsy was done as per the patient's clinical findings. The management (operative or non-operative) was also based on clinical examination report and diagnosis.

Patients selected for conservative management were placed on strict bed rest, antibiotics, anti-inflammatory, anti-diabetic diet, and medications, pentoxifylline, compressive elastic bandage etc. Those

who were operated, the operative findings and methods of management was recorded.

Analysis Of Data

Data was collected according to the predesigned standard Case proforma and compiled and tabulated in Microsoft® Excel and statistical analysis was done using IBM SPSS Version- 22.0.

Observation And Discussion

Data was collected, compiled and results were drawn using appropriate statistical

methods and were compared with other published journals and articles.

Results

For the present study, 53% (n = 105) of the patients were aged more than 50 years followed by 27% (n = 53) aged between 41 and 50. Remaining 20% patients were aged less than 40 years. Further, out of 197 patients, 78% (n = 154) were male and 22% (n = 43) were female.

Table 1: Location of the ulcer according to its types

S. No.	Type of ulcer	Gaiter Zone	Foot	Leg	Total
1	Diabetic	0 (0%)	93 (92.1%)	8 (7.9%)	101
2	Venous	18(75%)	1 (4%)	5 (21%)	24
3	Arterial	0 (0%)	12 (100%)	0	12
4	Malignant	0 (0%)	5 (50%)	5 (50%)	10

- Diabetic ulcer was present in foot in 93 patients, in leg in 8 patients and none in the gaiter area.
- Venous ulcer was present in the gaiter zone of 18 patients, in foot in 1 patient and in leg in 5 patients.
- Arterial ulcer was present in 12 patients in the gaiter area.
- Malignant ulcer as present in 5 patients in foot and in leg in rest 5.

Table 1 describes the location of various leg ulcers. The venous ulcers occurred more commonly in the gaiter zone (75%), least in the foot (4%). Diabetic ulcer was not found in the gaiter zone whereas arterial ulcer was exclusively found in the foot. About 50% of malignant ulcers occurred in the foot and rest of 50% in the leg.

Table 2: Types of bacteria isolated from the ulcers

S. No	Pathogen	No of cases	Percentage
1.	Staphylococcus	26	24%
2.	Klebsiella	18	17%
3.	Proteus	14	13%
4.	Streptococcus	20	19%
5.	Pseudomonas	3	3%
6.	No growth	25	24%
	TOTAL	106	100%

According to table 2, the study has identified the culture and sensitivity of the patients and Staphylococcus was found for 24% of the bacteriological isolates.

Moreover, the study has identified the proteus, and it was 13%, Klebsiella for 17%, streptococcus and pseudomonas for 19 % and 3% each

Table 3: Associated Systemic Diseases of various Leg Ulcers

S. No	Systemic Diseases	No of cases	Percentage
1.	Anemia	15	8%
2.	Atherosclerosis	8	4%
3.	Diabetes	101	51%
4.	DVT	3	2%
5.	Leprosy	6	3%
6.	Malignancy	10	5%
7.	TAO	4	2%
8.	Varicose Veins	24	12%
9.	Others	26	13%
	Total	197	100%

Table 3 shows the association of various systemic diseases with different leg ulcers. Anaemia is associated in 8% cases, peripheral arterial disease in 4%, TAO in 4%, Varicose Veins in 12%, DVT in 2%,

Malignancy in 5%, Leprosy in 3% and Diabetics in 51%. Diabetes Mellitus is the most common followed by vascular ulcers associated disease for leg ulcers.

Table 4: Various Treatment Modalities of Various Leg Ulcers

S. No	Type of Treatment	No of cases
1.	Conservative	197
2.	Only Debridement	98
3.	Only Skin Grafting	33
4.	Debridement + Skin Grafting	10
5.	Wide Excision + Skin Grafting	5
6.	Amputation	14
7.	Ligation & Stripping	22
8.	Lumbar Sympathectomy	3
9.	Referral to Other Specialties (ONCO & CTVS)	12
	Total	197

Table 4 describes the treatment modalities of various types of leg ulcers. All the patients received some form of conservative therapy like anti-inflammatory drugs, anti-diabetic drugs, pentoxifylline, compressive bandage. About 50% of patients most of the diabetic ulcers underwent only debridement, 16.7%

received only skin grafting, 5% received debridement and skin grafting, 2.5% underwent wide excision and skin grafting. While 7% had undergone amputation and 11.2% received ligation and stripping of their varicose veins, 1% patients of arterial ulcers received lumbar sympathectomy as part of their treatment.

Table 5: Results

Sl. No.	Results	No. of Cases
1	Lost Follow-up	11
2	Patient LAMA	9
3	Patient Expired	5

In the present study 5 patients died majority of them due to septicemia, so the mortality rate is 2.5%. 11 of the patients lost follow up and 9 patients left against medical advice

Discussion

According to analysis of the study, the occurrence of ulcer among the people is 0.18% to 1% (Phillips et al)[11]. 85% of cases of the ulcer is having issues related to the leg vascular etiology, (Gilliland et al)[12] and has suggested that the differential diagnosis is occurring in 90% of case due to wound in lower extremity venous ulcer.

As per the outcome of the current study, the association of various systemic diseases with different leg ulcers anaemia is associated in 8% cases, peripheral arterial disease in 4%, TAO in 4%, Varicose Veins in 12%, DVT in 2%, Malignancy in 5%, Leprosy in 3% and Diabetics in 51%. It can be seen that Diabetes Mellitus is the most common followed by vascular ulcers associated disease for leg ulcers.

In the current study the maximum percentage of the patients belongs to the age group above 51years followed by 41 – 50 years. Therefore, focusing on the study of Young (1983) it can be concluded that incidence of the leg ulcers increased with age and much more common and debilitating in the elderly as compared to younger age groups[13]. According to analysis the males are the most common victims of various kinds of leg ulcers.

From the analysis it has carried out that foot is the most common location of leg ulcers, and the foot is the most common site of ulceration as it forms the bulk of diabetes and traumatic ulcers[14]. It is compared with other studies which also show the same result. In India as the practice of barefoot walking is much more common than western countries, foot is the most common site of minor trauma, and this compounded with other comorbidities like

Diabetes and Hypertension is the main site[15].

In the physical examination of the sloping edge was found in the majority of the cases 83% with slough in 50% and indurated base in 67%. Most of the ulcers were secondarily infected with purulent discharge in 38% cases.

It is comparable with the study of Rahman et al (2010)[16] where sloping edge was found in 78.3% cases with slough in the floor in 48.2% cases, indurated base in 75% and purulent discharge in 50%. From the above table we conclude that staphylococcus is the most predominant organism isolated from the culture of various leg ulcers (24%) followed by klebsiella[15]. This is comparable with the results of Harrison et al. (2011) [17] which also show that coagulase +ve staph aureus is the most common single organism associated with the secondary infection of leg ulcers. Most of the studies have shown that it is a polymicrobial infection which is the most common infection of leg ulcers [18, 19].

Conclusion

From the study, it has been carried out that the prevalence of leg ulcers is between 0.18% to 1% among the elder population and influencing the physical and mental health. However, the site of ulcer is identified among 90% of population in gaiter areas and 2% were facing issues related to foot and 8% in the leg. This kind of problem is common among the elder people due to changes in the etiology and underlying the various diseases. About 50% of patients most of the diabetic ulcers underwent only debridement, 16.7% received only skin grafting, 5% received debridement and skin grafting, 2.5% underwent wide excision and skin grafting. While 7% had undergone amputation and 11.2% received ligation and stripping of their varicose veins

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