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Clinical profile of patients with leg and/or foot ulcers attending government hospital in North Canara: A descriptive study

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Abstract
Background: Lower limb ulcers occur due to various conditions such as atherosclerosis and other arterial disorders, venous insufficiency, diabetes, trauma, pressure sores, vasculitis and inappropriate management of acute wounds. Many a time, it's difficult to ascertain the exact etiology of leg ulcers. A lot of patients, especially in rural India, cannot afford/avail many investigations and therefore clinical assessment may be the only tool available to manage the disease.
Method: This was a cross-sectional study done in tertiary hospital of Karnataka for a period of two months. A Sample size of 75 was selected. Based on the data from previous two years obtained from Medical Record department. Informed consent of the patients was taken and a detailed history, a complete systemic examination and local examination of lower limbs including the ulcer was done.Ethical Clearance was obtained from the Institutional ethical Committee.
Results: Majority of patients (40%) with leg ulcer presented during sixth decade with a male to female ratio of 2.7:1. The most common aetiological factor for ulcer was trauma and infection i.e 29.1% of each. 16.1% of patients had ulcer over gaiters area. Majority of patients came with complaints of wound with pain (54.4%). 77.2% pf the patients had pus discharge from the ulcer.
Conclusion: Often a multi-factorial aetiology may be present, which requires a comprehensive assessment for correct diagnosis. Education and training is vital for all those involved in caring for patients with chronic ulceration.

Keywords: Clinical-profile, leg ulcer, North Canara

1. Introduction
Ulcer is full thickness loss of epidermis with part of dermis which heals with scarring [1].According to one Indian study the prevalence of chronic leg wounds was 4.5/1000 population. The incidence of acute leg wounds was more than double at 10.5/1000 population [2]. Lower limb ulcers occur due to various conditions such as atherosclerosis and other arterial disorders, venous insufficiency, diabetes, trauma, pressure sores, vasculitis and inappropriate management of acute wounds [2]. Patients with reduced mobility or obesity may also develop ulceration in the gaiter area because of venous hypertension [3].

Leg ulcers affect the life style and optimal living of the patient. It can be due to various psychological or physical factors, such as pain, exudate, odour related to ulcer, effect on mobility, sleep and daily routine activities, social isolation, depression, helplessness. Many a time, it's difficult to ascertain the exact etiology of leg ulcers. A lot of patients, especially in rural India, cannot afford/avail many investigations and therefore clinical assessment may be the only tool available to manage the disease.

Leg ulcer patients commonly attend our surgical outpatient department for regular dressing as well as for wound check by surgeons. Some of them need inpatient care due to infection/sepsis or other reasons. Also, being a government setup, considerable population belong to the lower socioeconomic strata; hence their level of awareness regarding their illness and willingness to subject themselves to appropriate treatment may vary. By studying such patients, we get to know the various etiological factors responsible, the effect it has on the patients and their family, the load on the hospital and also to find possible areas for improved wound care by providing appropriate management. The following study was planned with objective to assess the factors that lead to causation of leg ulcers, to know the factors leading to chronicity of leg ulcers and evaluate/describe the various clinical parameters associated with such patients.

2. Methodology

2.1 Source of data

The study include patients of age of 18 years and above, presenting to surgical outpatient department and inpatients admitted in ward with leg and/or foot ulcers.

2.2 Study design

This was a clinical, observational cross sectional study to assess the patients with leg ulcers in government hospital, Karwar over a period of four months.

2.3 Sample size: A Sample size of 75 was selected. Based on the data from previous two years obtained from Medical Record department it was found that in a year on an average around 450 cases get admitted with leg/foot ulcers. Considering the study period for two months, the number of patients forming the sample was calculated as 75 (450/12*2=75). We could assess around 79 patients during our study period.

After institutional ethical clearance (IEC), patients of age 18 years and above with leg and/or foot ulcers attending the outpatient department or inpatients admitted in ward satisfying the inclusion and exclusion criteria participated in the study. All wound below the knee joint were considered as leg ulcers. Informed consent was obtained from each subject, a detailed history was taken, a complete systemic examination and local examination of lower limbs including the ulcer were done. Relevant laboratory results were recorded if already done or ordered for the patient as necessary. The findings were recorded in pre designed proforma. Data analysis was done using statistical package for social sciences (SPSS) software.

3. Results

The mean age of the study participants was 60.88 with standard deviation of 11.12 years. Majority of patients (40%) with leg ulcer presented during sixth decade with a male to female ratio of 2.7:1. (Table 1)

Table 1: Demographic details of the patients with leg ulcer

Demographic Determinants	Number (%), N=79
Sex	
Male	58 (73.4)
Female	21(26.6)
age	
31-40	6(7.5)
41-50	8(10.1)
51-60	28(35.4)
61-70	23(29.1)
71-80	12(15.1)
>80	2(2.5)
Residence	
Rural	27(34.1)
Urban	52(65.8)

The most common aetiological factor for ulcer was trauma and infection i.e 29.1% of each. 16.1% of patients had ulcer over gaiters area. Majority of patients came with complaints of wound with pain (54.4%). 77.2% pf the patients had pus discharge from the ulcer. Loss of sensation was seen among 26.55 of cases and numbness wass seen among 18.9% of cases.(Table 2).

The co-morbidities include Diabetes in 62% patients, anaemia in 39.2% patients, varicosities in 5%, hypertension in 31.6% and sickle cell disease in 3.33% patients (Table 3). We found that 43% of the study participants were smokers and 20.2% were only alcoholic.

Table 2: Clinical Profile of the patients with leg ulcer

Determinants of Leg Ulcer	Number (%), N=79
Presenting complaints	
Wound	20 (25.3)
Wound+Pain	43 (54.4)
Wound +Pain+Swelling	10 (12.6)
Wound+swelling	6 (7.5)
Precipitating events	
Surgery	10 (12.6)
Trauma	23 (29.1)
Sunburn	2 (2.5)
Boil/Vesicle	23 (29.1)
Unknown	21 (26.5)
Location	
Gaiter's area	13 (16.4)
others	66 (83.6)
Duration	
<1 month	9 (11.3)
1-3 months	33 (41.7)
4-6 months	15 (18.9)
6-12 months	10 (12.6)
>12 months	12 (15.1)
Pus Discharge	
Present	61 (77.2)
Absent	18 (22.7)
Number of ulcers	
Single	54 (68.3)
Multiple	25 (31.7)
Tenderness	
Present	37 (46.8)
Absent	42 (53.2)
Loss of sensation	
Present	21 (26.5)
Absent	58 (73.5)
Numbness	
Present	15 (18.9)
Absent	64 (81.1)

Table 3: Co-morbidities among patients with leg ulcer

Co-morbidities	Number (%)
Varicose viens	4 (5)
Diabetes Mellitus	49 (62)
Hypertension	25 (31.6)
Anemia	31 (39.2)

4. Discussion

The incidence of chronic leg ulcers is increasing as a result of the increase in the aging population, prolonged standing jobs, increased co-morbidities and risk behaviours such as smoking, obesity and diabetes leading to atherosclerosis and thickening of vessel walls.

Leg ulcers mainly affect older individuals as seen in our study where the mean age was 60.88 years. This is in accordance with many other studies [4, 5].

A majority of patients were male. Gender differences between men and women in the development of foot problems have been seen in many other studies. Lavery *et al*. reported that males were a significant risk factor in their study of 225 diabetics [6] and in contrast to some studies where women were more commonly affected (cases of venous ulcers) [7] or there was no sex difference [4].

Due to lack of education on nature of illness, majority of patients presented to the hospital after 4 weeks after the ulcers

had developed i.e. 89%. The reason for chronicity in elderly male patient is thought to be poor financial condition, illiteracy, poor socioeconomic status and associated co-morbidities [8]. In a study by Lavery *et al*. [6] duration of ulcers > 30 days was a factor related to development of a wound infection. In our study too we found that 77.2% of the ulcers were infected.

Smoking and alcohol consumption increases the risk of developing foot ulceration, as seen in the study. Though many of the ulcers had an insidious onset, trauma was an important causative factor. In our study large number of patients were Diabetics i.e. 62% which in contrast to other studies were diabetics were less [5]. Peripheral neuropathy an etiological factor of diabetic foot, was found in a large number of patients. It was usually present in patients with a long history of diabetes.

More than quarter of patients in this study was unaware of the cause of the ulcers. Perhaps the co-existence of neuropathy, lack of foot care is the main cause of the tendency for progression of their lesions before presentation.

5. Conclusion

Clinical course of the ulcer can suggest its etiology. Often a multi-factorial aetiology may be present, which requires a comprehensive assessment for correct diagnosis. Successful management of leg ulcers requires a clear diagnosis, establishment of a treatment plan, accurate monitoring, and adherence to the plan as the ulcer decreases in size. Education and training is vital for all those involved in caring for patients with chronic ulceration.

6. References

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