



A CLINICAL STUDY ON NON-HEALING ULCERS OF LEG AT RIMS, RANCHI: A PROSPECTIVE STUDY

Surgery

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ABSTRACT

Background- Ulcer is simply a break in the continuity of an epithelium or mucous membrane. An ulcer when precipitated by several factors such as diabetes, venous diseases and arterial diseases will lead to delayed healing of the wound, resulting in chronic non healing ulcers. For management of patients with chronic leg ulcers it is important to understand the pathogenesis of the underlying disease and its treatment.

Aims and Objectives- To study the clinical profile and management of non-healing ulcers of leg among the study group at RIMS, Ranchi.

Materials & Methods- 100 cases of chronic leg ulcers admitted at RIMS, Ranchi, Jharkhand between September 2019, and August 2020 were studied prospectively using a predesigned Proforma after taking proper consent from the patients.

Results- Most common ulcer found was of vascular etiology (venous- 25%, arterial-18%, Diabetic foot- 32%). Most common age affected was 41-60 years (47%) and was found predominantly in male gender (74%). Venous ulcer affected the gaiter area commonly, while arterial and diabetic foot ulcer were found commonly over the foot. Management was directed towards the treatment of the underlying pathology.

Conclusion- Non healing ulcers are common conditions presenting to the surgical OPD with high morbidity and hence, should be evaluated and treated accordingly to improve the standard of living for the affected patients.

KEYWORDS

ulcers of leg, diabetic foot, venous ulcer, arterial ulcer, ulcer, non-healing ulcers

INTRODUCTION

An ulcer is a discontinuity of an epithelial surface. It is characterised by destruction of surface epithelium and a granulating base^[1]. Chronic leg ulcer is a quite common problem in the society and is associated with wide range of medical and surgical diseases. It causes morbidity which interfere with the daily activities of an individual and hence it is important to study and understand about the underlying disease and its pathogenesis.

T Karl et. al. (2004) stated that 10% of the population will suffer from chronic leg ulcers in his/her lifetime with morbidity of up to 2.5%^[2]. Common aetiologies of chronic leg ulcers are Venous ulcers, arterial ulcers, and diabetic ulcers. Long standing ulcers can lead to malignant transformation and can also lead to dead limb/deadly limb/ dead loss limb requiring amputation and causing morbidity to the patient. Ischaemic ulcers are very painful requiring immediate treatment.

AIMS AND OBJECTIVES

AIM- A Clinical Study on Non-Healing Ulcers of Leg at RIMS, Ranchi.

OBJECTIVES-

- To study the pathogenesis of various non-healing ulcers of leg.
- To study the age and gender incidence of non-healing ulcers of leg.
- To study the management of various non-healing ulcers of leg.

MATERIALS AND METHODS

Place of the study- Rajendra Institute of Medical Sciences, Ranchi, Jharkhand, India.

Study population- A total number of 100 cases of non-healing lower extremity ulcers who were admitted in General Surgery ward were studied. This group included patients of both sexes, from all religion and economic groups.

INCLUSION CRITERIA-

All patients admitted in the General Surgery ward (between September 2019- August 2020) with non-healing ulcers of more than 4 weeks and age more than 12 years were studied.

A detailed history was collected with particular reference to onset, duration, type of lesion, occupational factors, and systemic diseases.

EXCLUSION CRITERIA-

Ulcers of duration less than 4 weeks duration and patients less than 12 years of age were excluded from the study.

RESULTS

DISTRIBUTION OF VARIOUS CHRONIC LEG ULCERS

Table 1- Distribution of various types of chronic leg ulcers

No.	Type of ulcer	No. of patients	Percentage
1	Diabetic foot ulcer	32	32%
2	Venous Ulcer	25	25%
3	Arterial Ulcer	18	18%
4	Traumatic Ulcer	07	07%
5	Malignant Ulcer	14	14%
6	Others	04	04%

In this study, 100 cases of non-healing lower extremity ulcers of more than 4 weeks duration were studied. Diabetic foot ulcers were the most common case accounting for 32% of the cases. Venous ulcer accounted for 25% of the cases being the second most common. Arterial ulcers without associated diabetes accounted for 18% cases of which atherosclerosis and buerger's were common. Most arterial ulcers were chronic smokers and were predominantly male. Malignant ulcers (14%) encountered were mostly squamous cell carcinoma (marjolin's ulcer) who had history of previous burn in the affected area.

AGE DISTRIBUTION

Table 2- Age distribution among various chronic leg ulcers

No.	Age	No. of patients	Percentage
1	12-20 years	02	02%
2	21-40 years	31	31%
3	41-60 years	47	47%
4	More than 60 years	20	20%

Most common age group who were affected with chronic leg ulcers belonged to the age group of 41-60 years (47%). Chronic leg ulcers were not common among the younger population particularly those less than 20 years of age.

SEX DISTRIBUTION

Table 3- Sex distribution in non-healing leg ulcers

No.	No. of patients	Percentage
1	Male	74%
2	Female	26%

Non healing leg ulcers were predominantly in the male gender accounting for 74% cases, while female patients accounted only for 26%.

LIMB DISTRIBUTION

Table 4- side of limb affected by chronic leg ulcers

No.	Limb Involved	No. of Patients	Percentage
1	RIGHT	48	48%
2	LEFT	43	43%
3	BILATERAL	09	09%

In this study, chronic leg ulcers affected right limb in 48% of cases, left in 43% of cases and affected bilateral lower limbs in 9% of the total cases.

DIABETES, SMOKING AND TOBACCO HISTORY

Table 5- Patients with history of Diabetes, Smoking and tobacco use

No.	History	No. of patients	Percentage
1	DIABETES	32/ 100	32%
2	SMOKING	23/100	23%
3	TOBACCO	29/100	29%

32% of the patients in the study were diabetics. 23% patients had history of smoking and 29% gave history of taking tobacco in other form.

LOCATION OF ULCER

Table 6- Site of the ulcer in lower extremity

No.	Types	Leg	Foot	Gaiter area
1	DIABETIC FOOT	06	25	01
2	VENOUS ULCER	02	02	21
3	ARTERIAL ULCER	01	17	00
4	TRAUMATIC ULCER	02	04	01
5	MALIGNANT ULCER	07	07	00

Diabetic foot ulcers and arterial ulcers were more common over the foot, while venous ulcers were commonly found in the gaiter area of leg.

MICROBIOLOGY OF ULCER

Table 7- Microorganism isolated from chronic non-healing ulcers

No.	Organisms	No. of patients	Percentage
1	Staphylococcus	29	29%
2	Streptococcus	21	21%
3	Pseudomonas	14	14%
4	Klebsiella	08	08%
5	E. coli	09	09%
6	Proteus	06	06%
7	Mixed Growth	10	10%
8	No Growth	03	03%

Staphylococcus was the most common bacteria isolated from the ulcers via culture of the wound swab.

TREATMENT OF DIFFERENT CHRONIC ULCERS

In all Chronic leg ulcers, routine investigations were done to rule out Anemia, diabetes, hypoalbuminemia and other causes precipitating non healing of ulcers. Patients were kept under antibiotic coverage and regular antiseptic dressings were done.

DIABETIC ULCERS- Patients of Diabetic foot ulcers were admitted and were treated for hyperglycemia (Oral hypoglycemic agents/ Insulin) with regular monitoring of blood sugar by using glucometer. Regular antiseptic dressings and debridement were done. Smaller ulcers healed with secondary intention while larger ulcers required skin grafting. Those undergoing Gangrenous changes required disarticulation/amputation of limb.

VENOUS ULCERS- Patients of ulcers with venous pathology were investigated further with Ultrasound doppler of lower limbs to look for the cause and site of defect. Wounds were managed with regular antiseptic dressings. Compression stockings were prescribed for lower

limbs to reduce the venous hypertension. Some patients required Open surgeries for varicose vein (Ligation and stripping of affected veins & Phlebectomy) as there was no option for Ablation and Sclerotherapy in our setting.

ARTERIAL ULCERS- Patients admitted with arterial ulcers presented with severe pain for which they were treated with analgesics. Patients were evaluated further with Ultrasound doppler and CT angiography. Those patients with gangrenous limbs required amputation/ disarticulation. They were also kept on medical management (Aspirin, Clopidogrel, Statins, Pentoxifylline etc). Patients requiring Endarterectomy, Embolectomy, Bypass surgeries etc were transferred out to the department of CTVS.

MALIGNANT ULCERS- Malignant ulcers required Wide local excision +/- Skin grafting of the ulcers, followed by adjuvant therapies under the department of oncology.

TRAUMATIC ULCERS- Most traumatic ulcers required regular antiseptic dressings under antibiotic coverage. Larger wounds required grafting to cover up the wound.

DISCUSSION

A total number of 100 patients with chronic leg ulcers above the age of 12 years who were admitted in our Surgical ward were studied over a period of 1 year. The findings were then compared with various other published studies till date.

In this study, the most common type of ulcers was found to be vascular ulcers (Venous ulcer-25%, Arterial ulcers 18%), followed by diabetic associated foot ulcers (32%). Diabetic foot ulcers also lead to various arterial diseases and neuropathies but was classified separately in order to emphasise on the prevalence of Diabetes mellitus and its complication in our country (India). Malignant ulcers accounted for 14% and traumatic ulcers accounted for 7% of the cases.

Gilliland et. al (1991) reported that at least 95% of the leg ulcers were due to a vascular etiology^[3]. Baker SR et. al. (1992) reported in their study that 66.9% of the lower limb ulcers were venous ulcers, 27.6% were pure arterial ulcers and 14.6% had both venous and arterial diseases^[4]. Studies mentioned above, all reported vascular ulcers to be the most common type of leg ulcers.

Most common age of patients with chronic leg ulcers was found to be 41-60 years accounting for atleast 47%. Only 2% of the cases belonged to age below 20 years. Hence, chronic leg ulcers were most commonly found in the working population. It was found most commonly in male gender (74%).

Cornwall et al. (1986) in his study stated that 70% of patients were found to be over the age of 70 years^[5]. Gajjam Shrinivas et. al. (2016) in their study, reported that most of cases belong to the age group of 41-60 years (47.14 %) and was found more commonly in male (57%)^[6]. Dr Lanka Vamsidhar (2019) in their study found that the most common age with chronic leg ulcers were above the age of 50 years accounting for atleast 45% of the cases and also found that 86% patients were male^[7].

In our study, right limb involvement was found in 48%, left limb disease in 43% and bilateral involvement in 9%. 23% of the patients had history of smoking and 29% gave history of taking tobacco in the past. Callam MJ et. al. (1897) reported that ulcers were significantly more common in the left leg in women but not in men^[8].

84% of the venous ulcer were situated in the gaiter area, while arterial and diabetic ulcers were found more commonly in the foot area.

Study by Hansson Carita in 1988 shows that ulcers below the line of shoe and feet are caused mostly by arterial insufficiency and diabetes, and ulcers on the gaiter zone are mostly by venous insufficiency^[9].

Swabs from the ulcers were sent for culture and sensitivity in which Staphylococcus strain were most commonly isolated.

All the ulcers were managed with regular antiseptic dressings and debridement under antibiotic coverage. Causes were investigated accordingly, and treatment of the underlying cause was done.

CONCLUSION

Chronic leg ulcers are common conditions presenting to a surgical OPD.

Most common ulcer is of vascular origin among whom venous ulcer is much more common than arterial ulcer. They are more common in the working population and predominantly in male gender. Diabetes, smoking, and tobacco intake are associated with non-healing ulcers. They cause high morbidity and can complicate to loss of limbs and malignant transformation. Hence, they should be investigated, and treatment of the cause should be done. Nursing care is particularly important, and patients should be counselled regarding it.

CONFLICT OF INTEREST: NONE

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