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Original Research Article

Study of Benign Ulcers of the Leg and Foot from a Tertiary Care Health Centre Of Madhya Pradesh

Veerabhadrappa PS[1], Priyanka Tank[2], Abhishek Singh[3], Shwetank Goel[4], Rakesh Tank[5]

[1]Associate Professor, Department of General Surgery, FH Medical College, NH-2, Tundla, Uttar Pradesh
[2]Senior Resident, Department of Paediatrics, SHKM Govt. Medical College, Mewat, Haryana
[3]Assistant Professor, Department of Community Medicine, SHKM Govt. Medical College, Mewat, Haryana
[4]Associate Professor, Department of Microbiology, Teerthanker Mahaveer Medical College and Research Centre, Moradabad, Uttar Pradesh
[5]Assistant Professor, Department of General Medicine, SHKM Govt. Medical College, Mewat, Haryana

***Corresponding author**
Dr. Abhishek Singh
Email: mail2aks1@yahoo.co.in

Abstract: Leg and foot ulcers are probably one of the very common conditions presenting in any surgical out patient department of our country. Only a very few studies have been conducted on this topic and none from the state of Madhya Pradesh. The present study was planned to study the benign ulcers of the leg and foot in the region of Madhya Pradesh. A retrospective cohort of patients with leg and foot ulcers admitted to Department of Surgery, Sukhsagar Medical College, and Jabalpur during past one year i.e. January to December 2014 formed the study population. In this study, all the eligible patients positively diagnosed as leg and foot ulcers were included in this study. Only benign ulcers were studied. Malignant ulcers were excluded from this study. Study tools were records of the patients such as information/records from MRD department and clinical case sheets. Diabetic ulcer (30.91%), venous ulcer (21.82%) and traumatic ulcers (20.00%) were the most common variety of ulcers etiologically. Location wise most ulcers were located at dorsal foot (43.65%) followed by at the leg (32.73%). Most of the diabetic ulcers (>82%) were having grade I or II as per Wagner grading of Diabetic ulcers. Majority of patients (43.65%) were in the age group of >50 years followed by equal number of cases (21.82% each) in 31-40 years and 41-50 years age group.
Keywords: Pattern, benign ulcers, leg, foot, clinical features, patients

INTRODUCTION

Leg ulcers are defined as discontinuity of the epidermis and dermis in the lower limb of more than 6 weeks duration [1, 2]. They are a common presentation in the elderly population and are associated with a negative impact on the quality of life of patients and they also cause a substantial burden on the health budget [3, 4]. During the past three decades considerable knowledge has been gained regarding the patho-physiology and management of chronic leg ulcers. Despite all these, the management of chronic leg ulcers is still a fertile field for experimentation.

Several factors contribute to the development of leg ulcers. The various etiology of ulcers are chronic venous insufficiency, diabetes, lower extremity arterial disease, trauma, skin malignancies, infections, blood dyscrasias, vasculities and ulcerating skin diseases like pyoderma gangrenous [5, 6].Today the management of leg ulcers focuses on correctly identifying the cause of ulcer, creating an optimum environment at the wound site for healing, improving factors that could delay healing, preventing complications to healing, and maintaining the healed tissue.

Ulceration of the lower limb is a frequent condition seen in surgical ward and outpatient department in Sukhsagar Medical College, Jabalpur. Only a very few studies have been conducted on this topic and none from the state of Madhya Pradesh. Paucity of literature also warrants this study. Therefore the present study was planned to study the benign ulcers of the leg and foot in the region of Madhya Pradesh.

MATERIALS & METHODS

The current retrospective study was conducted by the Department of General Surgery, Sukhsagar Medical College, and Jabalpur. A retrospective cohort

of patients with leg and foot ulcers admitted to Department of Surgery of Sukhsagar Medical College, Jabalpur during past one year i.e. January to December 2014 formed the study population. In this study, all the eligible patients positively diagnosed as leg and foot ulcers were included in this study. Only benign ulcers were studied. Malignant ulcers were excluded from this study.

Study tools were records of the patients such as information/records from MRD department and clinical case sheets. Clinical data was thoroughly reviewed. Following details were captured- history, clinical examination, laboratory investigations which included Hb%, TC , DC, Peripheral smear, ESR, Renal function tests, Liver function tests, Lipid profile, FBS/PPBS, HIV, HBsAg, VDRL test, Urine for albumin, sugars, ketone bodies, microscopy. Other laboratory investigations included ABPI, X-ray of the chest and the affected foot, Wound culture & sensitivity, Biopsy from the ulcer edge, Skin biopsy, Duplex ultrasound imaging, FNAC (Fine Needle Aspiration Cytology) of the lymph node, Nerve biopsy if required.

Permission of Institutional ethics committee (IEC) was sought before the commencement of the study. All the proforma were manually checked and edited for completeness and consistency and were then coded for computer entry. After compilation of collected data, analysis was done using Statistical Package for Social Sciences (SPSS), version 20 (IBM, Chicago, USA). The results were expressed using appropriate statistical methods.

RESULTS

Mean age of patients was 48.7 years. Majority of patients (43.65%) were in the age group of >50 years followed by equal number of cases (21.82% each) in 31-40 years and 41-50 years age group. Diabetic ulcer (30.91%), venous ulcer (21.82%) and traumatic ulcers (20.00%) were the most common variety of ulcers etiologically. Location wise most ulcers were located at dorsal foot (43.65%) followed by at the leg (32.73%). Most of the diabetic ulcers (>82%) were having grade I or II as per Wagner grading of Diabetic ulcers. (Table 1)

Table-1: Baseline characteristics of study subjects

Variables		**N (Percentage)**
Age group distribution	10-20 years	2 (3.64%)
	21-30 years	5 (9.09%)
	31-40 years	12 (21.82%)
	41-50 years	12 (21.82%)
	>50 years	24 (43.65%)
Etiological type	Diabetic ulcer	17 (30.91%)
	Venous ulcer	12 (21.82%)
	Traumatic ulcer	11 (20.00)
	Arterial ulcer	8 (14.54%)
	Infective ulcer	5 (9.09%)
	Trophic ulcer	2 (3.64%)
Location of ulcer	Dorsal foot	24 (43.65%)
	Leg	18 (32.73%)
	Plantar foot	8 (14.54%)
	Dorsal foot+ Plantar foot	4 (7.27%)
	Foot + Leg	1 (1.82%)
Wagner grading of Diabetic ulcers (N=17)	I	7 (41.18%)
	II	7 (41.18%)
	III	1 (5.88%)
	IV	1 (5.88%)
	V	1 (5.88%)

The most common procedure done in our study group for varicose ulcers to treat the primary cause was combined procedure of Stripping of the vein and hook phlebectomy in 56% followed by Hook phlebectomy alone in 34% and Stripping alone in 10%. Among the 11 patients who underwent different types of amputation, Ray's amputation was the most commonly done amputation in 55%, followed by Trans metatarsal amputation in 25%, Below-knee amputation in 5% and tars metatarsal amputation in 15%. Among the 11 patients who underwent ulcer reconstruction, split thickness skin grafting was the common procedure done in 70% followed by reconstruction of ulcer using fasciocutaneous flaps in 30%

DISCUSSION

It was observed in this study that mean age of patients was 48.7 years. Majority of patients (43.65%) were in the age group of >50 years followed by equal number of cases (21.82% each) in 31-40 years and 41-50 years age group. Cornwall *et al.;* [7] in his study had 70% of patients over the age of 70 years. In this study, 20% of patients were aged between 41-50 years and 43% of the patients were aged above 50 years. But according to study done by Callam MJ *et al.;* [8] the elderly are not the only population at risk: In his study ulceration began before the age of 40 years in 22% of the population studied. In our study, ulceration began before the age of 40 years in 37% of the patients.

In this study it was observed that Diabetic ulcer (30.91%); venous ulcer (21.82%) and traumatic ulcers (20.00%) were the most common variety of ulcers etiologically. It is difficult to compare these results with other studies because of a few reasons. The study group of 55 patients was a small number to make valid comparative conclusions. Some authors have classified diabetic ulcers as metabolic [9, 10]. The most important factors responsible for causation of ulcer in diabetes are the arterio-sclerotic lesions in large leg arteries and or neuropathy resulting in decreased sensation. If diabetic ulcers in this study are considered vascular disorders rather than metabolic, the percentage of vascular ulcers in our study is about 75% - somewhat comparable to the above study. However, this is controversial and in diabetes it is a combination of factors that are to be considered in causation of leg ulcers.

In the Western countries, leg ulcers are mainly caused by venous insufficiency, arterial insufficiency, neuropathy, diabetes, or a combination of these factors [11]. The study from India shows that etiology of chronic wounds included systemic conditions such as diabetes, atherosclerosis, tuberculosis, and leprosy [12]. Chinese study [13] shows that the principle etiology (67%) of ulceration is trauma or traumatic wounds compounded by infection. Diabetic ulcers, venous ulcers, and pressure ulcers accounted for 4.9%, 6.5%, and 9.2%, respectively. The majority of these wounds were seen in farmers and other agricultural workers.

There were patients who had severe limb threatening infections, following steps were undertaken as per the clinical practice guidelines: surgical debridement of all necrotic tissue, exploration and drainage of abscess, surgical resection of osteomyelitis, open wound management, and empirical antibiotic modified by culture directed antibiotics, repeated wound debridement, foot sparing reconstructive procedures and definitive amputation if necessary. Culture and sensitivity of the exudates was done in all cases. Among the different culture growth obtained, the most common organism was streptococcus pyogenes and followed by staphylococcus aureus. These findings are similar to another study by Simon A *et al.;* [14].

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