

A Descriptive Study of Management of Benign Ulcers of Foot and Leg

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Abstract: Introduction: Chronic leg ulcers have a deleterious effect on patient quality of life, and are often difficult to manage. Accurate diagnosis is essential if patients with chronic leg ulceration are to receive optimal treatment. Multiple disciplinary approach is usually required for complete healing of chronic ulcers.

Materials and methods: A descriptive study of twelve months duration was conducted on 100 consecutively admitted cases of chronic leg and foot ulcers in age group of 7-80 years of both genders. A through detailed history and clinical examination was undertaken. Local Symptoms, trophic skin changes and venous insufficiency if any was recorded. Both general and specific treatments were provided.

Results: Maximum cases were in the age group of 33-52 years, M: F ratio 1.9:1 and rural: urban ratio 2.57:1. Majority of patients were illiterate (76%), and were drawn from lower class of the society (56%). Majority of patients (54%) were smokers, tobacco chewers or alcoholics. Site of ulcer was foot 52% followed by leg 18%, ulcer origin was traumatic in 72% of cases and ischaemic ulcers were minimum 2%. Symptom wise wound, pain and discharge 32% followed by wound and discharge 26% were noted. 66% of ulcers were secondarily infected and maximum number of cases 68% stayed in hospital for about 2 weeks. In 68% cases healing was complete in about 3 months.

Conclusion: Chronic leg ulcers present a therapeutic challenge. Often a multi-factorial aetiology may be present, which requires a comprehensive assessment for correct diagnosis. Management should include patient education about the importance of regular care of the lower limb, and early medical treatment when necessary.

Key words: Chronic leg ulcers, aetiology, quality of life.

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I. Introduction

An ulcer is defined as a full thickness loss of epidermis and some dermis, which heals with scarring.¹ Chronic leg ulcer, also known as chronic lower limb ulcer, is defined as an open lesion between the knee and ankle joint that shows no tendency to heal after three months of appropriate treatment.² Such ulcers are associated with significant morbidity and decrease in the quality of life of the patient. In individuals above 60 years, 0.6-3%, and in those above 80 years, 5% suffer from chronic leg ulcers.³ Chronic or recurrent leg ulcers lead to loss of working hours, unemployment and financial loss. While venous ulcers constitute the majority of leg ulcers, many of them have a multifactorial aetiology. A correct evaluation of the aetiological factors is essential for the prompt and effective management of this condition.

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.¹¹ Various treatment modalities are available for the management of different types of leg ulcers although no clinical trials comparing the efficacy of one treatment over the other have been done. Some of them have not got strong evidence to show that they actually improve healing, still awaiting further research.

II. Materials And Methods

A descriptive clinical study of twelve months duration (Jan 2014 - December 2014) was conducted at Department of Surgery, M.G.M Medical College and hospital, Jamshedpur, Jharkhand. Each patient participating in the clinical trial signed an informed consent form though one could withdraw without any prejudice at any time.

100 consecutively admitted cases of chronic leg and foot ulcers in the age group of 7 to 80 years of both genders were enrolled. Chronic non healing ulcer has been characterized as one which did not heal over a span of 6 weeks duration.

In all cases a detailed history was taken and they were subjected to through clinical examination. Socio-demographic data such as name, age, sex, occupation, educational status, socio-economic status, date of admission and discharge were noted down. Besides, history of trauma, thorn prick, shoe pressure, shoe bite and history of burn or complication of chemicals and herbal medications were also asked for. History of diabetes, ischemic heart disease, other chronic systemic ailments, smoking, alcohol drinking was asked and recorded. Diabetic patients were excluded from the study.

The site, depth and duration of ulcers were recorded and any previous ulceration noted. Local symptoms such as swelling, redness, discoloration, condition of non-healing wound, pain, discharge, were looked for and recorded. Trophic changes in skin, nails, muscles, hair were also recorded. Pathological lesions of foot like cellulitis, abscess, gangrene, foot deformity and their site were also looked for. Evidence of any precipitating factors like defective foot wear, cracks and cellulitis were noted.

All enrolled patients were thoroughly clinically examined for any chronic systemic ailment. Vascular insufficiency in lower limbs was detected by observing colour of limb (normal, pale, blue, black, purplish), condition of hair, nails muscle wasting and temperature. Pulsation of dorsalis pedis, posterior tibial, popliteal and femoral arteries were noted for presence or absence of pulsations, if pulsations were present volume was noted and compared with other limb pulsations. For neurological examination of lower limbs, sensations, reflexes and sweating were looked for to detect peripheral neuropathy.

In all patients Hb%, TLC, DLC, fasting or random blood sugar, blood urea and serum creatinine was routinely done. Urine was also examined routinely for both macroscopic and microscopic examination. Wherever vascular insufficiency was predicted in lower limbs, serum cholesterol/lipid profile was also done. In all ulcers, discharge was collected aseptically and sent to microbiology department for culture & sensitivity. X-ray foot, leg and chest, and Doppler study was carried out, where indicated. Doppler ultrasound was done in 2 patients showing incompetence of long saphenous and calf perforators. Wasserman reaction and Kahn's test was performed where indicated ie: suspected syphilitic ulcers. In limited cases of non-healing ulcers, edge biopsy was done to assess the pathology of ulcers.

Following careful evaluation, patients were subjected to following line of management based on their general condition, type and severity of local lesion. The treatment consisted of treating any systemic condition that may impair/inhibit healing particularly malignant tumours, nutritional deficiencies of vitamins, iron, zinc and protein that could retard healing of ulcer. Additionally, elevation of limb when at rest and exercises with support bandages were also advised.

Debridement of ulcer was the most common surgical treatment for the enrolled patients since it helped in necrotic tissue removal, in assessing the depth of ulcer, its severity and also in controlling the infection.

Follow up of patients was done. In first 2 months 35 patients turned up for follow up, in next 4 months 15 patients came in and only 4 patients came for follow up at the end point (total 7 months).

III. Results

A great majority of cases 86% were discharged in about 15 days time once their wounds showed healthy granulation tissues and signs of healing. Minimal stay was of 2 days. Complete healing of ulcers was noted in 68% cases in about 3 months, whereas 4% of cases took almost 9 months for healing and these cases also took a longer period of stay in the hospital. In the present study no complications and no mortality was observed except in duration 3 cases toes were amputated.

Table 1: Demographic characteristics of patients

Age (years)	Male	Female	Educational status	Number	Socio economic class	Number	Habits	Number
1-10	1	3	Illiterate	43	Lower class	48	Smokers	18
11-20	4	5						
21-30	5	7	Less than high school	10	Upper lower	21	Tobacco chewers	22
31-40	8	6						
41-50	4	5	Up to high school	24	Lower middle	17	Alcoholic Normal	18
51-60	6	7						
61-70	6	6	Graduate	23	Upper Middle	14	Habitat Rural Urban	46
71-80	9	8						
Total	43	47		100		100		100

Table 2: Distribution of ulcers and their characteristics.

Site of ulcer	No (%)	Type of ulcer	No (%)	Symptomatology	No (%)	Hb %	No (%)	Associated systemic disease	Cases No. (%)
Foot	52(26%)	Traumatic Trophic	72(72%) 14(14%)	wound wound and pain	22(22%) 20(20%)	<8g%	20 (20%)	Leprosy Varicose vein	12(12%) 6(6%)
Ankle joint	12(12%)	Venous	8(8%)	wound and discharge	26(26%)	8-10g%	56 (56%)	Malignant	4(4%)
Leg	36(36%)	Malignant Ishcaemic	4(4%) 2(2%)	Wound, pain and discharge	32(32%)	>10g%	24 (24%)	Hypertension	4(4%)

Table 3: Shows nature of ulcer, dressing agent used, stay in hospital and duration complete healing.

nature of ulcer	No (%)	Dressing agent used	% used	Stay in hospital	No (%)	Complete healing	No (%)
Secondarily infected	66(66%)	Providone iodine	96%	≤1 week	38(38%)	≤3 months	68 (68%)
		Hydrogen peroxide Eusol	97% 14%	≤2 weeks	48(48%)	≤6 months	28(28%)
Non infected	34(34%)	Metronidazole Turpentine Oil	20% 8%	≤6 weeks	14(14%)	≤9 months	4 (4%)

IV. Discussion

About 85% of leg and foot ulcers were over the age of 64 years, thus, elderly population was more involved. Strandness et al.³ observed that in non-amputation group, the average age of the nondiabetic patients 63 years whereas, Tassiopoulos et al.⁴ in their study on 1249 ulcerated limbs recorded mean age of patients 59 years (95% CI: 54-63, range 14-93). In the present study maximum numbers of cases were observed in age group of 31-50 years and males (66%) dominated females. Sundresh et al.² also noted similar observation in their study of chronic leg ulcers in non-diabetic patients. Majority of cases in present study were illiterate, belong to lower socio-economic class, and belonging to rural areas and were smokers/tobacco chewers/alcoholic, a comparable data on these aspects were not available in the literature. However, Ribu et al.⁵ In their study observed that greatest difference between diabetic foot ulcer patients and general population (as control) were more of the foot ulcer patients were men, older, living alone, less well educated and not working.

The site of ulcer in majority of cases was foot followed by leg and large numbers of cases were of traumatic origin. The probable explanation for an increased incidence of foot ulcers was due to a larger population in our study belonged to rural habitat who worked bare footed hence an increased chances of trauma to foot and toes. In contrast to our observations regarding site of ulceration Baker et al.⁶ noted 90% of ulcer were present in gaiter area, 2% in foot and 8% in leg. A wide array of etiology has been involved in the lower extremity ulcers. Traditionally leg ulcers have been associated with venous insufficiency in 80-90% cases, 5-10% has an arterial origin.⁷ Chronic leg ulcers are commonly due to poor drainage of blood from the legs (venous insufficiency) and/or poor blood supply to the legs (peripheral vascular disease). Venous ulcers are usually associated with deep venous insufficiency.⁶ Chronic venous ulcers are more common in women. The etiological factor contributing chronic ulceration of leg is deep vein thrombosis in 96% of cases. Primary varicosity of the long saphenous system and/or short saphenous system is one of the causative factors for venous ulcerations.⁸ The sapheno femoral incompetence is the principal causative factor for venous ulceration (94.4%).⁸ Older people particularly smokers may have narrowing of the blood vessels leading to decreased blood flow to the legs and feet. Further, minor trauma to the lower limbs can cause non-healing ulcer owing to poor blood supply. Rarely blood vessels can become inflamed as a part of an autoimmune disease and lead to chronic ulcers. Squamous cell carcinoma (Marjolin's ulcer) is the most common burn scar neoplasm though other neoplasm have also been reported.⁹

V. Conclusion

Chronic leg ulcers present a therapeutic challenge. Often a multi-factorial aetiology may be present, which requires a comprehensive assessment for correct diagnosis. Management should include patient education about the importance of regular care of the lower limb, and early medical treatment when necessary.

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