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Study of aetiopathogenesis of chronic leg ulcers

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Abstract
Background: *An ulcer is a discontinuity of an epithelial surface. There is usually progressive destruction of surface tissue. Chronic ulceration of the lower legs is a relatively common condition amongst adults, one that causes pain and social distress. The prevalence of active leg ulceration has been found to be 0.15%. The common causes are venous disease, arterial disease and neuropathy. The prevalence of leg ulcers has considerable variation geographica1ly and within ethnic group. No adequate literature on prevalence and aetiopathogenesis of chronic leg ulcers in Eastern Indian population is present till date.*
Objectives: *To study the prevalence and aetiopathogenesis of chronic leg ulcers in Eastern Indian population.*
Methods: *A prospective study was carried out in Sri Rama Chandra Bhanja medical College, Cuttack in the year 2019. Detailed history and examination findings of 60 patients who had presented with chronic leg ulcers were studied.*
Results: *The incidence rate of chronic leg ulcers among patients presenting to OPD was 0.14%. Males in rural area had higher incidence with a peak in middle age group, i.e, 41-50 years. Most common aetiology was found to be leprosy (60%) followed by venous ulcer (16.6%) and diabetic ulcer (11.6%).*
Conclusion: *Incidence of chronic leg ulcers in Eastern Indian population is comparable to that of other literature available and leprosy is still a common cause of chronic leg ulcers unlike seen in studies from other regions.*
Keywords: *Chronic leg ulcers, Eastern India, aetiopathogenesis.*

Introduction

An ulcer is a discontinuity of an epithelial surface. There is usually progressive destruction of surface tissue**.** Leg ulcers have become now a great problem in our developing country both physically and socially due to rapid urbanisation and environmental imbalance in a rapidly growing population producing more and more health associated problems. The leg ulcers are common problem of human being and it is a significant cause of morbidity for a person throughout life and most distressing when it is chronic in nature. The chronic leg ulcers condition has perplexed the physician as well as dermatologist till date. The prevalence of leg ulcers has considerable variation geographically and within ethnic group. The prevalence of active leg

ulceration has been found to be 0.15% (MJ Callam, CV Ruckleg, DR Harper et al 1985). The cutaneous abnormality characterised by induration, dermatitis, hyperpigmentation, varicosity, oedema and ulceration has been recognised as chronic distressing leg syndrome for centuries. The statistical data regarding the prevalence of leg ulcer varies from place to place depending upon environmental condition. The leg ulcers can be classified as follows:

1. **Venous ulcer** (Stasis ulcer, Varicose Ulcer)

Fig-1

90% of all leg ulcers result from chronic venous insufficiency. It occurs on the lower medial aspect of leg (fig-1), usually there is proceeding venous stasis, dermatitis with lipodermatosclerosis.

2. Ulcers due to **Arterial Insufficiency** 5% of all leg ulcers from arteriosclerosis obliterans.

3. **Neuropathic ulcer**
   a. Necrobiosis lipoidica diabeticorum occurs in about 0.3% of diabetics (fig-2).

Fig-2

Fig-3

b. Trophic ulcer (fig-3) from Hansen's disease 10-20% of all leprosy patients suffer from trophic ulcer.

Fig-4

c. Ulcers from spinal cord lesion like Tabes Dorsalis (fig-4), syringomyelia, peripheral neuropathy.

4. **Hypertensive ulcer**
5. **Infective ulcer**

a) Bacterial- Lupus vulgaris, Mycobacterial ulcer (Buruli ulcer)
b) Fungal-Blastomycosis, coccidiodomycosis, histoplasmosis
c) Parasite-Dracunculosis, Schistosomiasis.
d) Unknown etiology - Pyoderma gangrenosum

6. **Haematopoietic ulcer**
   - Sickle cell anaemia,
   - Thalassemia (Cooley's anaemia)
   - Polycythemia vera
   - Thrombocytopenic purpura
   - Macroglobulinemia.
   - Cryoglobulinemia.
7. **Neoplastic ulcer**
   - Basal cell carcinoma.
   - Squamous cell carcinoma
   - Malignant Melanoma
   - Sarcoma
   - Kaposi's sarcoma
   - Malignant Lymphoma
8. **Other**-Collagen vascular diseases like
   - SLE
   - Felty's syndrome
   - Rheumatoid arthritis
   - Scleroderma
   - Porphyria Cutanea tarda
9. **Nonspecific Ulcer**
   - Burns
   - Decubitus ulcer
   - Factitial ulcer

This study is aimed to know various aetiological factors causing ulcers in the leg and to detect the various pathological processes involved in ulcer formation. Chronic ulceration of the leg, often causing considerable disability, is a common problem with significant economic consequences for the individual and society. The diagnosis of leg ulcer is totally inadequate and must always be qualified by a statement of the cause, backed by full evidence for this diagnosis. This requires an understanding of the range of leg ulcers that occur and the disease processes underlying them. So it is important to identify accurately the underlying cause in each case so that treatment may be correctly based on this. The dreaded prognosis of chronic leg ulceration is the loss of limb and permanent deformity for which patient as well as doctor both should be very careful. There is no available statistical data about chronic leg ulcers in state of Odisha. This study has been taken to throw some light on this subject especially about its prevalence and aetiopathogenesis so that it will be easier for treatment purpose as well as for preventing aspects also.

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Materials & Methods

The present study was carried out in 60 patients with chronic leg ulcers attending the O.P.D. & indoor of Dept. of Skin & V.D. of S.C.B. Medical College Hospital, Cuttack from the month of January 2018 to January 2019. Detailed history was taken in every case. Those cases were examined and findings were recorded in the proforma. Presenting features were recorded in chronological order with special reference to their sequence and time interval. In history of present illness, mode of onset of ulcer with duration and progress of disease, presence of anaesthesia were noted in details, History of past illness includes association of any previous chronic diseases, neurological deficiency or history of trauma. Occupation of patients was taken into account. Family history includes any other family member of either side with history of similar disease. Personal history shows socio-economic status with habits and addictions.

General Examination included body built and nutrition status, pallor, icterus, oedema, lymph node status, pulse rate, blood pressure & respiratory rate.

Local examination consists of inspection and palpation of ulcer site. Inspection of ulcer site included situation, extent, number, size, shape, edge, floor, colour and discharge from ulcer. Palpation included site, extent, margin, base and surface confirmed with associated rise of local temperature and tenderness. Lymph nodes palpated and recorded their number, site, consistency, mobility, fixity and ulceration.

Systemic examination includes examination of cardiorespiratory system, nervous system, skeletal system and abdomen.

In special cases, arteriography was done to rule out vascular insufficiency and abnormality.

Results and Discussion

The present study was carried out in the Department of Skin & VD and Leprosy of S.C.B. Medical College Hospital, Cuttack. Out of a total no. of 42,570 patients attending the OPD during the period of two years from Jan-18 to Jan.-19, 60 patients having chronic leg ulcers were selected.

Table-I

Sl. No.	Variable	Total (n=60) (%)
1	**Age groups**	
	21-30	3 (5)
	31-40	17 (28.3)
	41-50	23 (38.3)
	51-60	10 (16.6)
	61-70	7 (11.6)
2	**Aetiology**	
	Leprosy	36 (60)
	Venous ulcer	10 (16.6)
	Diabetic ulcer	7 (11.6)
	Spinal cord disease	2 (3.3)
	Pyoderma gangrenosum	1 (1.6)
	Arteriosclerosis	1 (1.6)
	Non-specific ulcers	3 (6)
3	**Duration of ulcer**	
	0-6	13 (21.7)
	7-12	21 (35)
	13-18	16 (26.6)
	19-24	10 (16.6)
4	**Habitat**	
	Rural	42 (70)
	Urban	18 (30)
5	**Socioeconomic status**	
	Poor	40 (66.6)
	Middle	15 (25)
	Well to do	5 (8.3)
6	**Addiction**	
	Chewing paan	15 (25)
	Smoking	14 (23.3)
	Alcohol	8 (13.3)
	No addiction	23 (38.3)

The incidence rate is 0.14% as observed in above table-I among the patients attending in skin & VD OPD within the study period.

From the above table it was seen that maximum number of patients (38.3%) were in the age group of 41-50 yrs. Least number of patients were seen between the age group of 2l -30 yrs (5%). It was also observed that the maximum number of chronic leg ulcer cases was seen in leprosy (60%), next due to stasis/venous ulcers (16.6%) and in diabetes (11.6%). Data also signifies that maximum number of patients (35%) presented with chronic leg ulcers with 7-12 months of duration. Least number of patients presented during 19-24 months. 42 patients (70%) were from rural areas where as 18 cases (30%) were from urban area. Highest number of 40 cases (66.6%) belonged to poor socioeconomic status. 15 cases (25%) from middle class and rest 5 patients (8.3%) belonged to well to do family. It was observed that 23 cases (38.3%) were not addicted to betel nut, smoking, alcohol, etc. 15 cases were addicted to paan (25%), 14 cases (23.3%) to smoking and 8 cases (13.3%) were addicted to alcohol.

Conclusion

This is a study conducted within a period of 2 years from January - 18 to January - 19 to evaluate the aetiopathogenesis of chronic leg ulcers. There were 60 patients involved in this study. Out of which maximum patients were from leprosy (60%). Rest of the ulcers were presented in chronological order as venous ulcer (16.6%), diabetic ulcers (11 .6%), ulcers due to spinal cord disease (3.3%), ulcer from pyoderma gangrenosum and arterial insufficiency (1.6%) and non specific ulcers (5%). The incidence of chronic leg ulcers has increased as the age advances and males are more affected due to their outdoor activity than females. Regarding habit, habitat and socioeconomic status, low socioeconomic group with rural origin, affected more than the urban people with good economical condition which has got no specific relation to addiction /habituation with exception for vascular diseases like arteriosclerosis obliterans and diabetes mellitus. Besides routine investigations like haemogram, FBS, urea, creatinine, VDRL a few special investigations like biopsy from ulcer margin for histopathological study, arteriography was done for selected vascular diseases causing ulcer. Nonspecific changes were seen from histopathological study in ulcers like trophic ulcer and other infective ulcers except neoplastic ulcer like squamous cell carcinoma. Leg ulcers are common problem and lead to suffering, disability, frequent hospitalisation and a great expense to both the patient and community. The clinical course of chronic leg ulcers is episode of recurrence followed

by healing. Besides few non-specific and bacterial ulcer all other chronic leg ulcers are very problematic condition for a patient throughout his life. So immediate care should be taken to assess the aetiopathogenesis of ulcers for better treatment care and to avoid loss of a limb.

Conflicts of Interest: Nil

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