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Original Research Paper

Surgery

CLINICAL PROFILE OF CASES OF CHRONIC LEG ULCERS, A ETIOLOGICAL STUDY IN TERTIARY CARE HOSPITAL.

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ABSTRACT

AIMS AND OBJECTIVES: To study the age, sex wise distribution and presentation of chronic leg ulcers in patients above age of 12years at tertiary centre.To evaluate the various causes of chronic leg ulcers.To enumerate the various microorganisms grown in chronic leg ulcers.To evaluate the various methods of treatment of chronic leg ulcers. **METHODS:** Prospective observational study of 100 patients of chronic leg ulcers, admitted at tertiary centre, suryapet during the period September 2018 to October 2020, were enrolled in the study.

RESULTS: In a study group of 100 cases, most of the patients with leg ulcers had an underlined systemic disease such as diabetes mellitus, venous valvular insufficiency, arterial occlusion secondary to atherosclerosis, leprosy and malignancy.

KEYWORDS : Chronic non-healing ulcer; Diabetic leg and foot ulcer; varicose ulcer; Trophic ulcer; Arterial ulcer; Malignant ulcer and Traumatic ulcer.

INTRODUCTION

Chronic leg ulcer (CLU) also known as chronic lower limb ulcer is defined as a ulcer of the leg, which does not heal within a period of 6 weeks [1].

The incidence of ulceration is rising as a result of the ageing population and increased risk factors for atherosclerotic occlusion such as smoking, obesity, and diabetes. Ulcers can be defined as wounds with a "full thickness depth" and a "slow healing tendency". Ulcers of skin can result in complete loss of the epidermis and often portions of the dermis and even subcutaneous fat [2,3].

Chronic ulceration of the lower leg and foot is frequent condition and wide in distribution, they may be associated with a number of Medical, Surgical & Dermatological conditions and the patients suffering is very immense, commonly seen in most of the surgical wards and OPD.

The problems of leg ulcer represent a wide spectrum of etiology, pathology, severity and morbidity. The main causes are venous valve insufficiency, lower extremity arterial disease and diabetes. Less frequent conditions are infections, vasculities, skin malignancies and ulcerating skin diseases such as pyoderma gangrenosum. But even rare conditions exists such as recently discovered combination of vasculities and hypercoagulability. For a proper treatment of patients with leg ulcers, it is important to be aware of the large differential diagnosis of leg ulceration. The causes may be various but the anatomical situation of ulcers in the leg by itself can give rise to problems that can at times test the ingenuity and patience of the surgeons.

METHODOLOGY

The material for this study was drawn from patients, presenting with chronic leg ulcers, to the General surgical OPD & Emergency department of tertiary centre suryapet, from September 2018 to October 2020 were enrolled in the study. It is a prospective observational study.

A total number of 100 cases were considered for this study. This group was a diversified one and included patients of both sexes and of all ages from 12 years and above. This study included all cases of chronic leg ulcers of 6 weeks duration.

A detailed history was collected and a thorough systemic and local examination was carried out. Patients were subjected to relevant lab and radiological investigation, after taking their consent and ethical committee approval.

But while presenting only relevant positive and some important negative findings were shown to make the study brief and to avoid unnecessary repetitions. Treatment was planned depending upon the underlying causative factor.

RESULTS AND OBSERVATIONS

Table 1: Age wise distribution of various types of chronic leg ulcers(N=100)

Sl. No	Age group (years)	No. of cases	Percentage
1.	12 – 20	1	1%
2.	21 - 30	5	5%
3.	31 - 40	24	24%
4.	41 - 50	25	25%
5.	51 - above	45	45%
	TOTAL	100	100%

Incidence of leg ulcer in this study group was found to be maximum in the age group of 51 & above. Since, the patients of age group 0-12 years are taken care of under the department of pediatric surgery, they are not included in this study.

The youngest patient was 19 years old and the oldest were 75 years old. Cornwall et al [46], in their study had 70% of the patients over age of 70% of the patients and according to study done by Callam MJ et al [47], ulceration began before the age of 40 years in 22% of patients.

Among the 100 cases studied Diabetic ulcers were 34 cases, followed by venous ulcers cases 26, traumatic ulcer cases 16, arterial ulcers cases 9, Malignant ulcers cases 5, trophic ulcers cases 3, and other cases 7.

According to Gilliland et al [49], 95% of leg ulcers are due vascular etiology and venous ulcers dominates Arterial ulcers account for 5 & 10% and others are due to neuropathy or combination of both (young).

The venous ulcers occurred more commonly in their gaiter zone(80.8%). Where as arterial and diabetic ulcers occurred mainly in foot i.e., 88.8% and 82.4% respectively. About 80% of malignant ulcers occurred in the foot and rest of 20% in lower 1/3 leg.

According to the Hanson carita et al. [45] ulcers below the line of shoe and feet are considered mostly caused by arterial insufficiency and or diabetes. Ulcers on the gaiter zone are mostly caused by venous insufficiency.

In present study Staphylococcus were found to be most common, micro- organism isolated from chronic leg ulcers, accounting for 31 cases(31%).

In this study arterial ulcers were found to be more common in Males 6 cases(66.7%).

In present study, Atherosclerosis 5 cases (55.5%) were the common cause of Arterial ulcers.

DISCUSSION

A total number of 100 patients were considered for this study. This group was a diversified one and included patients of both sexes and of all ages from 12 years and above. This study included all cases of chronic leg ulcers of 6 weeks duration.

Table No.2: Comparative studies

Variables (most common)	G.A.Rahman et al, 2010[1]	Shubhangi V.A, 2013[2]	Present study
AGE GROUP (years)	30-39	50-70	51 & above
SEX	M=F	female	Male
CAUSE	Traumatic	Venous	Diabetic
SIDE	Left	Left	Left
ORGANISM	Pseudomonas	Staphylococus	Staphylococus

The prevalence of chronic leg ulcers is between 1.9% to 13.1% (shubhangi, 2013 & Rahman et al, 2010)1&2.

The Rahman GA et al. study shown the incidence of chronic leg ulcers are more common in two peak periods of age of presentation 30-39 and 50-69years

respectively. In present study chronic leg ulcers were found to be common in age group 51 & above (45%), and in 41-50 age group(25%) respectively. Youngest patient was 19 yrs and oldest patient was75yrs of age.

According to Shubhangi V. Agale[2], chronic leg ulcers are more in females and according to Rahman G A et al,[1] CLU are equal in both sexes. In present study chronic leg ulcers are more common in males (72%) than in females (28%).

According to Kahle B. et al. [6], 65.2% of leg ulcers are due to vascular etiology and among which, venous leg ulcers dominates the differential diagnosis, accounting for up to 47.6% of the cases. Arterial diseases account for 17.6%, most others are due to neuropathy or combination of both.

In present study chronic leg ulcers with vascular etiology accounted for only 35% of all chronic ulcers, among which venous ulcers were 26% and arterial ulcers 9%. Chronic ulcers associated with diabetes accounted for nearly 34%, traumatic ulcers16% of the cases, malignant ulcers 5% and other ulcers for 7%.

Diabetic leg ulcers were more common in males 22 cases(65%), more prevalent in patients above the age of 51 & above years 20 cases(59%),and more often seen in left limb 18 cases(53%).

Western studies have classified diabetic ulcers as metabolic. 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 present study were considered as vascular disorders rather than metabolic, the percentage of vascular ulcers in our study is about 69% 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.

Also according to Baker SR, Stacey MC. et al, [17] the distribution of different type of ulcers in different studies varies from 70% to 90% for venous ulcer, 5% to 15% for arterial ulcers and 1% to 5% for other ulcers.

As per studies done by Hansson Carita et al [45] on leg and foot ulcers, ulcers below the line of shoe and feet are considered mostly to be caused by arterial insufficiency and or diabetes. Ulcers on the medial aspect of the ankle in the gaiter zone are mostly caused by venous insufficiency.

In the present study, ulcers had the same site of distribution i.e., ulcers in the gaiter zone were mostly caused by venous insufficiency (80.8%) and ulcers in the foot below the line of shoes were mostly caused by arterial insufficiency (88.9%) and or diabetes (82.4%).

About 60% of patients in our study had ulcers in the foot only. This is rather high figure in comparison to Hansson's study which showed about only 30% of the ulcers in the foot. This is probably because of more number of diabetic, arterial and traumatic ulcers in our study.

Cornwall et al in his study had 70% of patients over the age of 70 years. The median age of all patients in this study was 50 years and 44% of the patients are below the age of 50 years and had 56% of the patient above the age of 51 years.

CONCLUSION

The highest age incidence of leg and foot ulcers in this study was in the age group of 51years and above (45%). The median age was 45 years and the mean age was 44.28 years. There was a marked male predominance of 72%.

Foot was the most commonly affected region 60%. Venous ulcers were situated in the gaiter zone (80.8%), diabetic ulcers were situated in the foot (82.4%), and arterial ulcers were situated in the foot 88.9%. Of malignant and other ulcers, 80% were situated in the foot and 20% in the leg. Staphylococcus was found to be the most common pathogen to be isolated from the ulcers i.e., 31%.

4 patients with leg ulceration had infective gangrene of deeper tissues and they underwent amputation as a lifesaving procedure and 3 patients with malignant leg ulceration also underwent amputation.

26 patients with varicose veins underwent some form of operation i.e., ligation, stripping, Trendelenburg's operation or sub-fascial ligation following healing of ulcers. No recurrences of ulcers were noted. 9 among 16 patients with traumatic ulcers underwent skin grafting. The mean time for the ulcer to heal in patients, who were grafted was noted to be 9 days as against 22 days of those who did not undergo skin grafting. Venous leg ulcers (26 cases) were commonly seen in patients, presenting with varicose veins, with sapheno-femoral junction incompetence and perforators incompetence, predominantly seen in males patients 21 cases (80.7%)

Between 31-40 years of age 13 cases(50%), and commonly in the gaiter zone 21cases (80.8%). Atherosclerosis were found to be the common cause of arterial ulcers 5cases (55.5%) due to arterial occlusion with high cholesterol levels. The other arterial ulcers were due to Thromboangitis obliterans 4 cases (44.5%) predominantly seen in middle-aged individuals in the foot 8 cases (88.9%).

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