

**Original article:**

## **A clinical study on chronic leg ulcers with various aetiological factors for the chronicity of leg ulcers-ulcers in trauma with infection.**

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Date of submission: 08 September 2014 ; Date of Publication: 15 December 2014

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### **Abstract**

**Introduction:** The first sign of an ulcer – area of thick callus. The floor of the ulcer may not be visible but the blood is a sure indication that the skin beneath has broken. As the callus is trimmed away, evidence of cavitation or necrosis is seen and finally the extent of ulcer can be demonstrated. Ulceration of the lower leg is common which may be due to injury and having a circulation strained by the upright posture of human being. There are many associations with chronic edema, induration, eczema of leg etc. inadequate vascular dynamics can be demonstrated in ulcerated extremities.

**Materials & Methods:** The study comprises 250 cases of ulcer admitted at Government General Hospital, Kakinada, E.G.Dt., AP. Taking patient history, physical and local examination were done. Blood and urine samples were collected for blood sugar lipid profile etc. Special investigation like x-ray venography, arteriography, Doppler ultrasound, were done.

**Result:** Study of sex incidence shows that preponderance of males over females. The treatment is only directed to controlling of infection & repeated dressing and they are usually of long duration.

**Conclusion:** Lower and medial part of the leg is affected in 60% of cases. Mostly men are affected. Non specific ulcers were cured by local dressing and systemic antibiotics.

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### **Introduction**

Ulcerations of the lower extremity is fairly common and can present as diagnostic and therapeutic problem to the surgeon.

The lower leg is the seat of an ulcer many times more often than the whole of the rest of the surface

of the body. It is not surprising that the legs, exposed as they are to injury and having a circulation strained by the upright posture of human beings should be the site of ulcers of many types. The surgeon often consulted by a patient with a chronic ulceration of the leg because the patient needs either skin graft or possible vascular surgery. The surgeon must be aware of

many conditions that produce leg ulcers and in certain types skin grafting may not be treatment of choice. The evidence presented and the views expressed are based on the subject and the analysis of twelve patients studied personally in unselected persons in the sense that every patient coming to us with these ulcers, has been included. Although many patients with other kinds of leg ulcers have been seen, especially those associated with perforating ulcers, they are not included in the series, nor those rare ulcers associated with blood diseases.

### **Materials & methods**

Total number of 250 cases of ulcer were admitted during the period of 2011 to 2014 in Government general hospital Kakinada (Teaching Hospital East Godavari dist AP). A Personal study of chronic leg ulcers in detail is analyzed and the Statistical data pertaining to the subject from the hospital records is taken and a comparative study is done and certain conclusions are drawn.

In the investigation of the patient, careful history taking is essential.

Besides physical, local examinations, examination of lymphnodes, for impairment of circulation, and for nerve lesions are essential. Special investigations like examination of urine is highly important. Blood, bacterial logical examination, biopsy, xray, Venography, Arteriography, Ambulatory venous pressure, Doppler ultra sound, plethysmography, Duplex imaging, MRA, isosoptechnic, electro magnetic flow meter, blood lipids, investigations for vasospasm, electromyography, haemogram, other methods like ECG, MMR, measurement of walking distance using a treadmill are useful research tools for assessing for the patients.

A personal study of chronic leg ulcers of 12 cases in detail is analysed and the statistical data pertaining to

the subject from the hospital records is taken and a comparative study is done and certain conclusions are drawn.

### **Incidence :**

Total number of 250 cases of ulcers were admitted during the period of 2011 to 2014.

### **Age incidence :**

The age incidence in hospital figures shows high percentage of cases in 3<sup>rd</sup>, 4<sup>th</sup>, & 5<sup>th</sup> decade where as in present series it is high in 4<sup>th</sup>, 5<sup>th</sup> & 6<sup>th</sup> decade.

### **Sex incidence :**

The sex incidence shows preponderance of males over females. In the hospital series the incidence of males is about 70% and females 30%. In present series it is 65%, 35% respectively.

As males are more predisposed to occupational trauma and associated constitutional diseases like diabetes, Leprosy, etc. Leg ulcers are more frequently seen. Among them diseases such as malignancy, varicose veins and arterial disease are more frequent in men and hence contribute to higher incidence of leg and foot ulcers in them, with changing in time the more number of women are also employed in jobs which may predispose to ulceration.

### **Aetiology**

The various aetiological factors for the chronicity of leg ulcers as follows.

Trauma with infection.

Diabetes.

Arterial disease

Malignancy

Varicosity

In the hospital series diabetes, trauma and arterial diseases are the commonest predisposing factors for the leg ulcers. The high incidence of diabetes in the hospital series shows that these patients are taken as inpatients mostly for the treatment of diabetes that for

the ulcers the other main causes namely arterial diseases, varicosities, malignancy manifest in the ulcer form at one stage or other of the evolution of disease.

As these patients also require treatment for the primary condition, they are admitted in the hospital thus it is curious that although many chronic ulcers of the leg seen in surgical practice are caused by trauma with superadded infection, the statistical data do not contribute to the fact because most of these cases required only simple treatment, namely controlling infection with antibiotics and repeated dressings and hence they are not taken as in patients.

**The duration of the ulcer :**

The duration of the ulcer is described in terms of acute and chronic, the period of one month and below is taken as acute one and more than one month is chronic.

In hospital series 74% cases were of long duration and in present series almost all cases are of long duration. Thus these figures prove the fact that the majority of the chronic ulcers are of long duration for the following factors will contribute.

Negligance on the part of the patient. The patient will seek medical advise only when.

- 1.The ulcers are not healing spontaneously after a long time or
  - 2.Causing severe pain or
  - 3.Disabling from his occupation or
  - 4.When the disease spreads to distant parts of the body, like enlargement of the lymphnodes, enlargement of liver etc.
- 2.Non specific infection resistant to the common antibiotics.
  3. Constitutional affections like diabetes and malnutrition.

4.Vascular disorders like varicosity and obliterative arterial disease.

5.Neurological disorders like peripheral neuritis, leprosy, tabes etc.

**Site of the ulcer :**The site of the ulcer in most cases was on the medial side of the leg and foot, it's incidence being in my personal series is 60% where as in hospital series it was 54%. The reasons for the high incidence in the lower part of the leg and foot are as follows.

- 1.The leg and foot being exposed areas are more prone to trauma.
- 2.The vascular pattern of the foot and leg is such that the stagnation of venous blood in these areas occur.
3. Malignant ulcers or fairly common in the lower part of the leg and foot due to some unexplained reasons.

**Peripheral vascular disease :**

In my personal series 8 cases were found to be normal and the remaining 4 cases were found to be abnormal. Out of are two are diabetic and 2 belong to thrombo angitis obliterans.

**Peripheral neuritis** There was peripheral nerve involvement in two of my cases due to diabetes.

**Pathological examination :**

The biopsy of the ulcer was done as a routine in all the present cases and the following are the histopathological changes are seen in my series.

9 cases – non specific inflammatory changes seen.

2 cases – suggestive of squamous cell carcinoma.

1 case – suggestive of malignant melanoma.

**Radiological examination :**

This was carried in present cases to find out any evidence of calcification of vessel wall or to know whether the ulcer is adherent to the underlying bone. In one case of arterial disease the calcaneum was found to be involved.

**Treatment :**

**Treatment of leg ulcers of trauma with infection**

**Prevent to treatment:**

Role of cigarette smoking is important in prevention of leg ulcers, along with other measures in care of the foot.

**Curative treatment of leg ulcers:**

Once ulceration has occurred , early treatment is important. The longer the ulcer remains untreated, the more difficult it is to cure as the edematous leg becomes more indurated and the ulcer region more sclerosed.

It is generally accepted that, excluding ulcers of long duration, the various types are more readily healed, various though, if edema be reduced, the majority of ulcers will heal without difficulty. Rest, compression physiotherapy, local ultra violet radiation , hyper baric oxygen, vacuum-compression therapy, along with general treatment, Besides this local treatment

**After care:**

When a patient with a leg ulcer has been cured by whatever means, medical care should not be discontinued, unless after care is adequate, relapse is probable.Elastic stockings provide a convenient and comfortable means of supporting the leg after the ulcer has healed. Many of the more elegant stockings are made now-a-days, do not however, provide sufficient support and firm stockings fitted after careful measurement of the patient's leg when no oedema is present, is essential. If the skin of the leg is not smooth, if there is scaling in the area of healing,

friction from the elastic stockings may cause a relapse especially if the stocking has no smooth surface.For men elastic stockings have limited value. The stocking which reaches below the knee tends to work down the leg and that which extends to mid-thigh level requires to be attached to a suspender belt.To ensure that patients are wearing adequate support for the legs, it has been found best to see them.Every three to four months after cure, so that fresh bandages or stockings can be ordered as required and satisfactory support permanently maintained.

1. In case of non specific ulcers of long duration apart from local dressings, rest to the part, elevation of the limb and systemic antibiotic therapy, skin grafting was done because the size of the ulcer was more than 10 cm in one case. Specific treatment means treating the underlying cause.
2. In present series ischemic ulcer initially treated by lumbar sympath-ectomy as the patient was having rest pain as the wound did not heal in both cases, BK amputation was done.
3. In one case of nonspecific ulcer due to iatrogenic cause as the ulcer is at the posterior aspect of foot at the tendo achillies Tendon area PONTAN flap with SSG done.
4. In present series two cases of venous ulcers, SF Flush ligation with subfascial ligation done.
5. Compression therapy and surgery are the main stay of treatment.

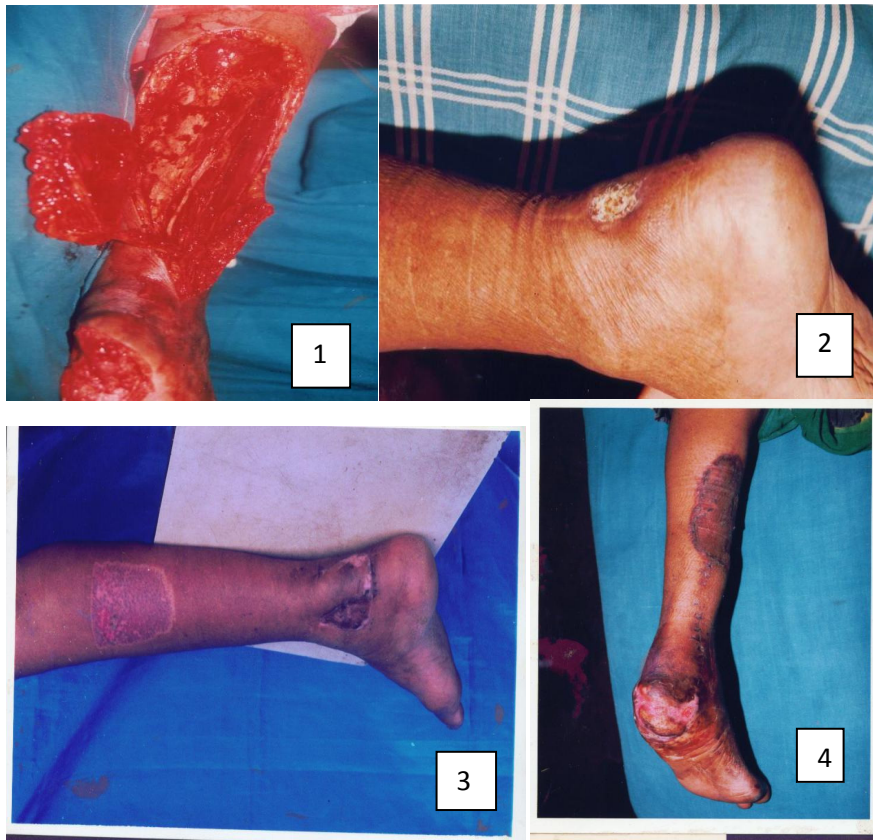
**Conclusion**

The chronic leg ulcers are found to effect mostly men in the 4 th and 5 the decade and the causes are trauma in majority of cases, the causes for chronicity of ulcer

are infection, diabetes, arterial diseases, varicosity and edema. In more than 60% of cases the lower and medial part of the leg and foot are affected and the general condition is not good in diabetic ulcers.

The lymph nodes are found to be enlarged in many cases of non specific and in some cases of malignant ulcers. The peripheral vascular system was found to be normal in all cases except in ischemic ulcers and in diabetic ulcers. The bacteriological examination of discharge from the ulcer was found to be very essential in giving antibiotic therapy. The biopsy of ulcer confirmed the clinical diagnosis in all cases. Most of the non specific ulcers were cured by

local dressing and systemic antibiotic therapy. A few required skin grafting. The underlying diseases such as varicose veins, arterial diseases were treated by appropriate operative procedures such as SF ligation and lumbar sympathectomy respectively, the malignant ulcers were treated on usual radical lines of treatment with no immediate mortality. Much more investigation of this subject is required only by the combined efforts of anatomists, physiologists, pathologist, physician, surgeon and radiologist that our knowledge of the aetiology be increased and then can a rational approach developed.



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