MATERIAL AND METHODS
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The present work is based on the study of 33 ulcers in 30 patients suffering from the leprosy with plantar ulcers, admitted in Maharani Lasmi Bai Medical College Hospital, Jhansi.

All the patients of leprosy attending the out patient department were carefully examined for plantar ulcers and only those who had neglected ulcers were included in this study and admitted. Detailed history regarding duration of illness, duration and sequence of plantar ulcers, predisposing factors like trauma etc., family history, socio-economic history, other complaints if any, treatment already taken were recorded. Detailed clinical examination was also done and recorded as follows:

<table>
<thead>
<tr>
<th>Case No.</th>
<th>Name</th>
<th>Age/Sex</th>
<th>Occupation</th>
<th>Social status</th>
</tr>
</thead>
<tbody>
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</table>
Chief complaints

1.
2.
3.

H/o treatment

For Leprosy

- Taken
- Regular/Irregular
- Duration
- Type
- Not taken.

For ulcer -

Past History :

1. Tuberculosis.
2. Diabetes Mellitus.
3. Trauma.
4. Others.

Family History :

Examination :

1. Gait

Examination of ulcers

<table>
<thead>
<tr>
<th>Foot</th>
<th>Site</th>
<th>Size</th>
<th>Margins</th>
<th>Floor</th>
<th>Discharge</th>
<th>Local Temp.</th>
<th>Tenderness</th>
<th>Others</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
Deformities:

Condition of peripheral nerves:

<table>
<thead>
<tr>
<th>Nerve</th>
<th>Rt.</th>
<th>Lt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. In lower limb -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Lat. popliteal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Post. tibial</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. In upper limb -</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Ulnar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Median</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Others</td>
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</tbody>
</table>

Sensory examination of foot:

<table>
<thead>
<tr>
<th>Distribution of Nerve</th>
<th>Rt.</th>
<th>Lt.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medial Plantar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lat. Plantar</td>
<td></td>
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</tbody>
</table>

Investigations:

1. Blood:

<table>
<thead>
<tr>
<th>TIBC</th>
<th>DLC</th>
<th>ESR</th>
<th>Hb.</th>
</tr>
</thead>
</table>

2. Urine:

<table>
<thead>
<tr>
<th>Albumin</th>
<th>Sugar</th>
<th>NE</th>
</tr>
</thead>
</table>
3. (A) Blood urea
(B) Blood sugar

4. Pus swab culture
   Organism sensitivity

5. X-ray:

Diagnosis:

Treatment:

1. Pre-operative:
   - Antibiotics
   - Antileprotic
   - Others.

2. Operative treatment:
   Date Anaesthesia
   Steps:

3. Post-operative treatment:

<table>
<thead>
<tr>
<th>FOLLOW-UP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
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<tr>
<td>-----------</td>
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</tbody>
</table>

Total duration of immobilization:

Final Results:
Treatment: It was carried out under the following plan.

1. Treatment of the disease

   1) Specific drug treatment

      11) Supportive treatment.

      11i) Physiotherapy and exercises.

2. Treatment of trophic ulcers.

3. Rehabilitation.

1. Treatment of the disease:

   1) Specific drug treatment: The patients were given following drugs as per dosage schedule recommended by W.H.O. (1983).

      Rifampicin: 600 mg once monthly, supervised.

      Sarcosine: 100 mg daily, self-administered.

      Clofazimine: 300 mg once monthly, supervised and 50 mg daily, self-administered.

   11) Supportive treatment: It was given in the form of antibiotics, haematinics and analgesics to improve the body resistance, to relieve pain and to improve local condition of the ulcers.

   11i) Physiotherapy and exercises: Patients were advised gentle massage for deformities of the joints and active/passive exercises of the affected part.
2. Treatment of trophic ulcers:

The aim of treatment was as follows:

1) Eliminating the stress, i.e. by avoiding weight bearing in acute stage.

2) Eradicating the infection by adequate local treatment: The wound cleaned once or twice a day depending upon severity of infection, with savlon and dressed with susol till frank discharge from the ulcer ceased.

3) Prevention of recurrence of ulceration by removing the internal stress: It was achieved by excision of offending bone.

Operative Treatment:

I. Anaesthesia:

In cases with complete loss of sensation of foot no anaesthesia or analgesia was necessary. In cases with partial sensory loss the Pentasocine with Diamepan by intravenous route were used.

II. Operative Technique:

Part was cleaned, painted and draped with aseptic measures. Trophic ulcers were excised in toto. The resection of offending bone was done either by dorsal or plantar approach as below —
A. **Dorsal Approach**

In cases where bone was not exposed through the ulcer the dorsal approach was used. A longitudinal incision was given over the dorsum of the foot along the bone to be resected. The bone was cleared off all the soft tissues, and exposed subperiosteally. The prominent part of bone was excised. Care was taken not to leave any spike of bone projecting plantarwards. Any loose piece of bone removed, wound washed thoroughly with normal saline and closed in layers. The plantar sore were thoroughly debrided and cleaned. Both the wounds dressed separately with antiseptic ointment. Below the knee well padded Plaster of Paris cast given in neutral position.

**Technique of applying Plaster cast:**

The limb is covered with one layer of surgical cotton from tibial tubercle to the toes. A long posterior slab made of about six layers of plaster bandage is laid so that the slab extends a little beyond the toes distally and covers the lower three quarters of the calf proximally. The bony prominences are protected by cotton padding. Then plaster bandages soaked in warm water are wound round the limb. As a rule the bandage laid on the limb and gently unrolled. Tight turns of the bandages are avoided. As the plaster bandage is being applied plaster paste gently rubbed on the plaster cast. The plaster cast is then manually moulded to a proper fit.
over the contours of the limb. In these cases the lower end of plaster may be completely closed. If there is any doubt that the plaster cast is tight and swelling of part is expected then toes are left open for inspection for 48 to 72 hours. After this it is better to cover them completely with few turns of plaster bandage. This prevents re-infection of wound from outside.

D. Plantar Approach:

This approach (Pats et al, 1981) was used only in those cases where the offending bone was exposed through the ulcer. After thorough debriement of the ulcer, two vertical incisions were given at 12 o’clock and 6 o’clock positions to enlarge the openings. The offending bone was cleared off all the soft tissues and ulcer bearing part of the bone was excised completely. The wound was closed only by stay sutures, cleaned and dressed with antiseptic ointment. A well padded below knee Plaster of Paris cast given keeping the foot neutral position, as described in dorsal approach.

All the patients were instructed not to bear weight on the operated limb.

After treatment:

Plaster was removed after three weeks untill and unless there was foul smell, maggots or plaster was
broken. Wound was inspected, stitches were removed and plaster reapplied if wound had not healed completely. Plaster was discarded finally when ulcer healed completely.

3. Rehabilitation:

After complete healing patients were encouraged to walk and bear weight on the operated limb. The patients were advised to use well padded orthopaedic shoes. Those who could not afford shoes were advised to get a soft rubber sole chappal or shoes.

The follow-up of the patients was done at monthly interval.

Assessment of the Results:

The results were graded as follows (Kush Kumar, 1979).

Good: Ulcers healed with a healthy, stable scar and an improved gait without any pain and recurrence.

Fair: Ulcers healed with a thin, unstable scar, persistence of mild pain on deep pressure, little or no improvement in gait pattern, no recurrence and patient usually dissatisfied.

Poor: Ulcers failed to heal/recurred, thin, unstable and fragmented scar, painful on pressure, no improvement in gait and patient dissatisfied.