**BURNS IN MALAWI**

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**SUMMARY.** *Objective:* To describe burns seen at the largest hospital in Malawi. *Methods:* In a prospective study conducted at Queen Elizabeth Central Hospital, Blantyre, Malawi, a series of twelve accidental burns was analysed over a four-week period. *Results:* Hot water was the commonest source of burns (6 out of 12). Open-fire and petroleum lamp accidents were the commonest cause of burns among epileptic patients. Males were affected more than females (male:female ratio = 8:4). Most burns were superficial (11 out of 12). One patient had deep burns requiring grafting. All patients were treated with topical silver sulphadiazine and a combination antibiotic regime. Children aged six yr or under were a major subgroup at risk of suffering burns (7 out of 12) and only one patient was aged over 30 yr. Lack of anti-epileptic medication resulted in potentially avoidable burns in four epileptic patients. *Conclusions:* There is a need for cheap preventive health promotion measures as well as the provision of simple resources as most burns encountered can be managed effectively by simple measures.

### Patient Age (yr) Sex Injury

<table>
<thead>
<tr>
<th>Patient</th>
<th>Age (yr)</th>
<th>Sex</th>
<th>Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>4</td>
<td>M</td>
<td>Burn to right leg after a fall near a fire while playing with sibling.</td>
</tr>
<tr>
<td>2.</td>
<td>26</td>
<td>F</td>
<td>Burn to lower leg from a fire during epileptic fit.</td>
</tr>
<tr>
<td>3.</td>
<td>3</td>
<td>M</td>
<td>Burn to left dorsum hand from hot water that the child knocked off a stove.</td>
</tr>
<tr>
<td>4. (PK)</td>
<td>18</td>
<td>F</td>
<td>Third-degree burn to right forearm from petroleum lamp during epileptic fit.</td>
</tr>
<tr>
<td>5.</td>
<td>5</td>
<td>M</td>
<td>Burn to right arm from hot water that the child knocked off a stove while feeding.</td>
</tr>
<tr>
<td>6.</td>
<td>3</td>
<td>M</td>
<td>Burn to right arm from petroleum lamp that the child knocked into while playing on a table.</td>
</tr>
<tr>
<td>7.</td>
<td>5</td>
<td>F</td>
<td>Burn to right thigh from hot water from a kettle that the little girl knocked off a fireplace.</td>
</tr>
<tr>
<td>8.</td>
<td>6</td>
<td>M</td>
<td>Burn to right foot from hot water that the boy knocked off the kitchen table.</td>
</tr>
<tr>
<td>9.</td>
<td>5</td>
<td>M</td>
<td>Burn to right shoulder after epilepsy fit next to fireplace at home.</td>
</tr>
<tr>
<td>10.</td>
<td>42</td>
<td>F</td>
<td>Burn to right thigh caused when the patient’s child knocked a hot water pan while in her arms.</td>
</tr>
<tr>
<td>11. (LB)</td>
<td>27</td>
<td>M</td>
<td>Burn from hot water after a fight with the patient’s father at home due to running into hot water pan.</td>
</tr>
<tr>
<td>12.</td>
<td>19</td>
<td>M</td>
<td>Burn to both hands from flames after epileptic fit next to open fire.</td>
</tr>
</tbody>
</table>

**Fig. 1** - Patient histories.
burn was treated with topical silver sulphadiazine and dressings. The patient was followed up in the dressing clinic, where his dressings were changed.

**Patient PK, 18-yr-old female**

This known epileptic sustained a mixture of second- and third-degree burns while having an epileptic attack next to a petroleum lamp at home. She had not been taking anti-epileptic medication regularly because of scarcity of the medication. The burns were in the right forearm. The central section was initially painless and non-blanching, and measured approximately 4 x 6 cm. Other surrounding areas were painful and had blisters. On admission the patient was given pain relief and antibiotics. The nonviable areas were excised and grafted under ketamine anaesthesia, and PK remained in hospital for the grafted areas to take. The graft showed almost 100% take. The patient was followed up in the dressing clinic, where the wound was inspected; she made a good recovery.

**Results**

Most of the burn victims in this study were children and young people. More than half were children aged six years and under who accidentally burned themselves with hot water or in an open fire. Only one patient was over 30. Males were twice as likely to sustain a burn as females. The sex mix among adult patients (over 16) was relatively equal, with 2 out of 5 being female. Among children (under 16) the majority (6 out of 7) were males. Male children were therefore more at risk of burning.

Eleven out of the 12 burns were accidental injuries, only one being non-accidental.

Four of the 12 patients were epileptic and sustained burns during an epileptic fit near a petroleum lamp or an open fire. None of the epileptic patients were on any anticonvulsant medication, owing to lack of drugs.

An important factor in burns victims is excessive alcohol consumption, usually on Friday or Saturday night. Although we encountered only one such case caused by overdrinking, this was an important factor in the initial assessment and management of the patient.

HIV/AIDS is very common in this region. Although estimates of the prevalence rates among the local population vary slightly, James et al. \(^1\) suggested that at least one in every three residents aged fifteen or above is HIV-positive. In our study we did not establish the HIV status in any of our patients as there were no indications for testing.

Malnourishment is also common in this region. Kurth et al. \(^7\) reported chronic malnutrition rates of 36-41% in Malawi children. We did not specifically measure malnutrition but our clinical impression was that all the children were undernourished and small.

**Discussion**

Malawi has limited medical resources. The Government provides some of the health care, the rest being provided by various charitable organizations. Donations of medical equipment and medications are relied upon, and most of these come from foreign aid organizations.

The standard treatment for the majority of burns encountered was, for second-degree burns, de-roofing of the blisters, application of silver sulphadiazine, dressings, and follow-up in the dressing clinic where the dressings were changed. Although alternatives such as topical tetracycline ointment exist, they were not routinely used as they were not commonly available. For burns that needed excision and grafting, this was often performed under ketamine anaesthesia. Antibiotics were given, and patients were discharged when this was feasible, with follow-up in the dressing clinic.

We suspect that HIV/AIDS and malnutrition are common in burn victims in Malawi. From a practical point of view these two factors are two most important variables in terms both of safety precautions and of treatment outcome.

Acute post-burn complications of malnutrition, including delayed wound healing and decreased host resistance, have been described by Curreri et al. \(^6\) Although it is very difficult to eradicate the problem of malnutrition in Malawi, we believe that the regular feeding given to our patients improved their chances of a successful outcome.

Our hospital hygiene was limited by lack of resources, although the burns unit was considerably helped by charities. The standard of equipment was basic, but the staff compensated for this by their dedication and enthusiasm. Surgical gloves were routinely washed and re-used, as were surgical gowns and hats. The drugs available were limited in type and quantity. Most patients who needed antibiotics received a combination of antibiotics, including a penicillin-based antibiotic.

Expertise was limited. Nurses managed patients in the dressing clinic (Fig. 2) competently, but also rotated in the
operating theatre and the ward. Recruitment of nurses was difficult as government salaries are low. The medical staff consisted of a consultant and a surgical trainee. The consultant ran the burns unit and the surgical trainee spent some of his training working under this plastic surgeon.

Commercial advertising was flourishing in Malawi during the duration of this study. However, there was very little government health promotion on burn-related matters. There was some health promotion by private companies, but this was usually coupled to a subtle marketing campaign (see Fig. 3, promoted by a paraffin company). We suggest that a proportion of resources could be channelled towards burns prevention and early treatment as this is likely to have a real impact in both the short and the long term.

**Conclusion**

The number of patients involved in this project is too small to allow a detailed epidemiological study or a statistical analysis of the results in terms of aetiology and treatment outcome. However, this project does highlight some problems Malawi has with respect to its burn management, as well as some of the socioeconomic factors involved.


**BIBLIOGRAPHY**


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