Control of lymphatic filariasis through patient empowerment

This case study highlights the challenges faced by patients with lymphatic filariasis and the success of an integrated home-based self-care programme developed at the Institute Of Applied Dermatology in Kerala, South India. This innovative treatment regimen uses integrated practice to fuse modern dermatology techniques with traditional Indian methods such as yoga and Ayurvedic medicine.

INTRODUCTION

The World Health Organization (WHO) classifies lymphatic filariasis (also known as elephantiasis) as a ‘neglected disease of the poor’\(^1\). One-third of the world’s lymphatic filariasis patients live in 15 Indian states, with Bihar, Kerala, Uttar Pradesh, Orissa and Assam being the most endemic. This disease is common among poor people who live in unhygienic conditions such as slums or in coastal regions where waterfront housing and floating vegetation is common. Apart from disability, lymphatic filariasis causes stigma, isolation and psychological stress among affected individuals\(^2,3\).

Lymphatic filariasis is a tropical disease. It is transmitted by filarial parasites that are passed on to humans through mosquito bites. The larvae enter the lymphatic vessels and adult worms form ‘nests’ in the lymphatic system. Infection is usually acquired in childhood, but the painful and disfiguring visible manifestations of the disease occur later in life. Whereas acute episodes of the disease (filarial fever or acute dermatolymphangioadenitis ) cause temporary disability, lymphatic filariasis leads to permanent disability.

Lymphatic filariasis is also economically debilitating, with estimated losses in India of $1 billion annually. Abendazole tablets given together once a year for 5–6 years destroys parasites that circulate in the blood and interrupts disease transmission. However, medication is aimed at prevention and has little effect on patients who already have swollen limbs. Morbidity control is not yet incorporated as a major part of the programme and although an estimated 23 million people are disabled due to lymphatic filariasis, the Indian government does not presently have any special programmes in place to combat disability and there are huge gaps in treatment provision\(^3\).

THE PROGRAMME

In meeting the challenge of millions of patients disabled by lymphatic filariasis the author’s team adopted a pioneering role that sought to incorporate many elements, including:

- Poverty alleviation
- Morbidity control
- Integrative medicine
- Self-care
- Home-based treatment
- Concordance
- Ethical and evidence-based treatment.

The objective was to reduce disability and encourage patients to resume their daily routine. The family members are informed about the condition and taught management skills so that this major tropical public health problem can be addressed in a patient-centered way.

The team designed a low-cost programme that aimed to avoid long-term hospitalisation, expensive drugs or technical medical regulation such as aseptic precautions (gloves, mask, protective aprons and strict supervision), which although vital in the...
hospital setting are unrealistic for home-based family assisted treatment.

The treatments included simultaneous elements taken from Ayurveda (an ancient Indian system of medicine where the selection of drugs is partly based on the patient’s constitution), yoga and biomedicine, including:

- Washing the affected limbs with soap
- Soaking the affected limbs with phanta (a herbal decoction used in skin care)
- Indian manual lymph drainage (IMLD)
- Pre-and post-IMLD yoga exercises
- Continuous application of compression bandaging
- Dietary restrictions
- Oral herbal medicines indicated for lymphatic filariasis in Ayurveda.

Entry points when infected were treated with biomedical drugs, such as topical antifungals, antibacterials and antibiotics.

These methods result in a consistent reduction in the symptoms of lymphatic filariasis, often allowing patients to return to their daily routine and even work. Patient empowerment also enables the treatments to be practised at home.

**CASE REPORT**

Mr X was a 23-year-old man from a small village in central Kerala. He lived with his younger brother and was in his final year of an economics degree. He had developed swelling in both legs 10 years previously when he was still in school. His family had a history of lymphatic filariasis, with his father and uncle also contracting the condition. The family experienced little success when trying to access treatment, with one doctor even suggesting amputation of the limb.

Mr X was extremely depressed about his condition and had even considered suicide before coming to the attention of the author’s team. On 26 December, 2005, he travelled overnight by train along with his brother for a medical consultation at the Institute of Applied Dermatology in Kerala.

**Treatment**

**Counselling**

The first step was to send Mr X to the counselling department where a counsellor spent two hours explaining the integrative treatment. She also assessed his health-related quality of life and detailed the importance of the family’s involvement in the treatment process. Written consent was obtained.

**Patient evaluation**

One of the team’s doctors took a detailed case history and analysed the prakruthi and sthaneeya vikruthi (the patient’s constitution), which indicated the use of massage oil and phanta.

The volume of Mr X’s limbs was assessed using the water displacement method [Fig 1] and the girth was measured using a tape measure. Routine investigations were performed to rule out any systematic disease.

**Integrative skin care**

The limb was then washed thoroughly using normal tap water and soap [Fig 2]. Following this, the limbs were bathed for 20 minutes in warm phanta, which was prepared the previous night using 120g of manjista (rubia cordifolia), a herbal powder boiled in eight litres of water and then diluted with 16 litres of warm water. The skin folds and clefts of the limbs were dried using ordinary linen, and antifungal herbal powder (rasnadi choorna) was applied between the folds.

Following this, the patient was instructed to perform pre-IMLD yoga [Fig 3] and one hour of breathing exercises. He then underwent IMLD, which was followed eight hours later by

---

**References**


post-IMLD yoga and breathing exercises.

IMLD was applied for 36 minutes, first with unmardhana massage (without oil) and then with udvarthana massage (with oil) [Figs 4 and 5]. The upward massage strokes (from the patient’s feet to his groin area) were coordinated with the patient’s breathing, ie in the time lapse between the end of one stroke and the beginning of the next, the patient gradually exhaled then took a sudden deep breath.

Both the patient’s legs were then covered with long-stretch compression bandages (14 each for both legs) [Fig 6]. Eight hours after the bandages were applied, the patient was instructed to perform more yoga, which was continued daily.

The above treatment regimen was repeated for seven days by the staff and from the eighth day onwards the patient’s brother (who had been trained in all the steps) supervised the treatment.

At the end of the 14th day of supervised treatment the counsellor provided discharge counselling for the family and provided the necessary instructions on home care.

The patient was instructed to attend reviews at one, three, six and 12-month periods. At each review the procedures were cross-checked and the investigations repeated — the resulting data was fed into SPSS 16 software for analysis and the photographs were compared to illustrate any reductions in limb size [Fig 7].

Results

Reduction in volume and girth at the first and subsequent follow-ups were observed and noted (Table 1 and Fig 7). Filarial fever induced by entry point infection (such as folliculitis, intertrigo, cracks in the soles of the feet, gravitational eczema, nail bed infection) was reduced by 80% after six months of treatment. Health-related QoL improved by 80% at nine months.

Empowering the patient and family is key in this instance. After one year of self-care, patient X got a job as a mechanic in a cycle shop and started supporting his brother’s college education.

Now after five years of home-based therapy, he has joined the Institute as a community nurse masseur. Along with 12 other treatment team members, he has already treated 175 filariasis patients in Alleppey, one of the highly endemic districts of Kerala, as part of the Institute’s community-level pilot study.
DISCUSSION
The aims of treatment are to reduce patients’ disability due to swollen legs and frequent attacks of filarial fever and to help them become less dependent on other family members. Once patients have attended counselling and decided to enter the programme, family members are encouraged to join them while they undergo treatment and are trained to apply the treatment protocol themselves. Those patients who are willing to help others can also undertake training as part of their initial and follow-up treatment courses.

Once home, patients are encouraged to get together with other patients and family members to form local support groups, which work closely with the Institute in a well-informed and motivated partnership for the management and care of chronically disabled lymphatic filariasis patients. In this way, a neglected tropical public health problem is addressed using a patient-centered approach.

CONCLUSION
Any chronic condition that requires long-term management in resource-poor settings such as remote Indian villages requires a strategically designed treatment programme.

Set up in 1999 by Dr SR Narahari, a dermatologist, the Institute of Applied Dermatology (a charitable non-governmental organisation for health systems research) has developed an integrated approach by effectively combining ayurveda, allopathy, homoeopathy, physiotherapy and yoga in the treatment of lymphatic block due to primary, secondary, traumatic and filarial lymphoedema.

The innovative treatment uses integrated practice to fuse modern dermatology techniques with traditional Indian methods and as the case featured in this article shows, the results can have a dramatic effect on patients’ health and quality of life.

AUTHOR DETAILS
Dr Kuthaje Subhaschandra Bose works as Principal of Administration and Communication at the Institute of Applied Dermatology in Kerala, South India. He is part of the multidisciplinary team of doctors who developed an integrated approach for the treatment of lymphatic filariasis.

Table 1 – Outcome measures – limb volume in litres.

<table>
<thead>
<tr>
<th>Recovery stage</th>
<th>Right limb</th>
<th>Left limb</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>24.2</td>
<td>16.95</td>
</tr>
<tr>
<td>Discharge</td>
<td>21.6</td>
<td>17</td>
</tr>
<tr>
<td>First follow-up</td>
<td>16.15</td>
<td>12.2</td>
</tr>
<tr>
<td>Second follow-up</td>
<td>13.5</td>
<td>8.5</td>
</tr>
<tr>
<td>Third follow-up</td>
<td>9</td>
<td>6.6</td>
</tr>
<tr>
<td>Fourth follow-up</td>
<td>4.5</td>
<td>4.3</td>
</tr>
</tbody>
</table>

Table 1 – Outcome measures – limb volume in litres.

Page points
1. The aims of treatment are to reduce patients’ disability due to swollen legs and frequent attacks of filarial fever, and to help them become less dependent on family members.
2. Once home, patients are encouraged to get together with other patients and family members to form local support groups.
3. The innovative treatment uses integrated practice to fuse modern dermatology techniques with traditional Indian methods.

Useful links
Virtual conference: Chronic wounds: tackling lower limb oedema:

For more information on lymphatic filariasis, visit the Lymphormation website at:
http://www.lymphormation.org