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CASE REPORT

Disability Limitation in Elephantiasis

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ABSTRACT

Elephantiasis, a chronic irreversible lymphoedema of the extremities, commonly involving legs, is caused due to obstruction of lymphatic vessels by microfilariae of *Wuchereria bancrofti*, *Brugia malayi,* and *Loa loa*. Two of our patients of age 56 and 58 years presented with elephantiasis. One patient was bed-bound while the other patient used to manage ambulation. Both of them were advised to undergo reconstructive surgery which the ambulatory patient refused. After 5-stage surgical correction and postsurgical rehabilitation, the bed-bound patient started walking with a walker 3 months after the last surgery and became independently ambulant after 6 months.

Keywords: Elephantiasis, Filariasis, Postsurgical rehabilitation.

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INTRODUCTION

Many parts of Kerala are endemic to filariasis, a chronic irreversible secondary lymphoedema. Filariasis most commonly involves the lower extremities and in severe forms may lead to elephantiasis. The causative organisms are *W. bancrofti, B. Malayi,* and *L. loa*. The microfilariae cause obstruction of lymphatic vessels leading to raised interstitial pressure, nonpitting edema of the limbs that is later associated with skin changes.[1] Most of the affected patients seek treatment with huge lymphedematous legs in later stages after 20- to 30-year duration when they face difficulty in walking and/or become dependent for activities of daily living (ADLs).[2] When opted for surgery, postoperative rehabilitation is the major determining factor to limit disability.

CASE REPORT

Two female patients of age 56 years (Mrs A) and 58 years (Mrs B), not known to be diabetic, hypertensive, or thyropathic, presented to our hospital with history of filarial edema of left and right lower limbs from their early thirties. Initially, there was history of pain in the lower limbs, redness over the skin, and insidious onset of gradually progressive edema. They took some medicines irregularly from the local hospital that led to partial relief of symptoms. There is history of exaggeration of symptoms in on and off manner. They never realized that it is going to be a serious problem in future. They do not have any documents of treatment taken; but most probably, the irregular medications were diethylcarbamazine citrate (DEC), which is commonly given free from primary health centers. The girth of the limbs has been increasing progressively to the present size. Mrs A manages most of her ADL with some difficulty and is ambulatory. Mrs B is bed-bound for the last 3 months.

General examination did not reveal any abnormality other than the chronic elephantiasis of the left lower limbs in both the patients. Body weight was 78 kg for Mrs A and that of Mrs B could not be measured as she was nonambulatory. Her postoperative weight was 80 kg. Mrs A used to manage ambulation with a quadripod cane and was independent in all ADLs buying some extra time.

We tried to put Mrs B in a wheelchair, but her bulky thigh could not be accommodated in the wheelchair. She could sit up in bed and do most ADLs except ambulation.

The maximum circumference of thigh in Mrs A was 140 cm (Figs 1 and 2).

Mrs B had thigh and calf involvement. Both of them were advised to undergo reconstructive surgery which

Fig. 1: Anterior view of Mrs A

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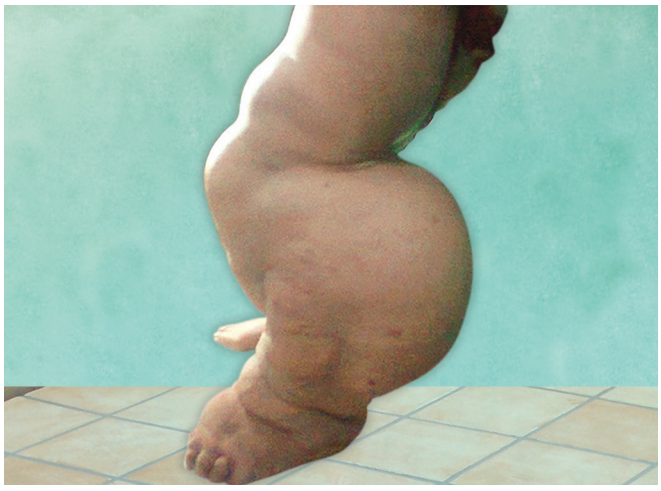

Fig. 2: Lateral view of Mrs A

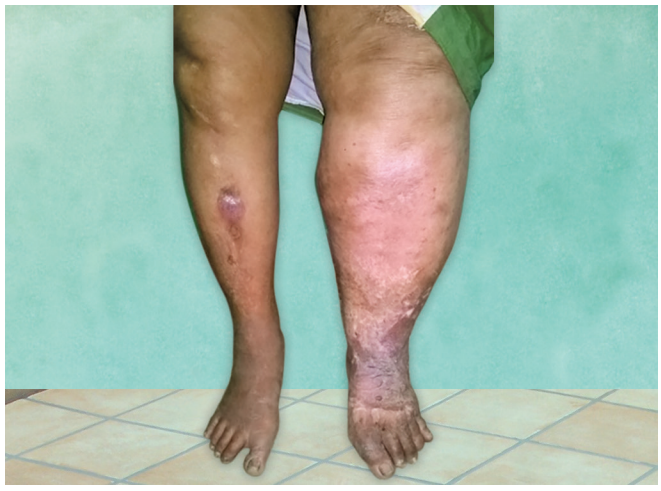

Fig. 3: Postoperative anterior view of Mrs B

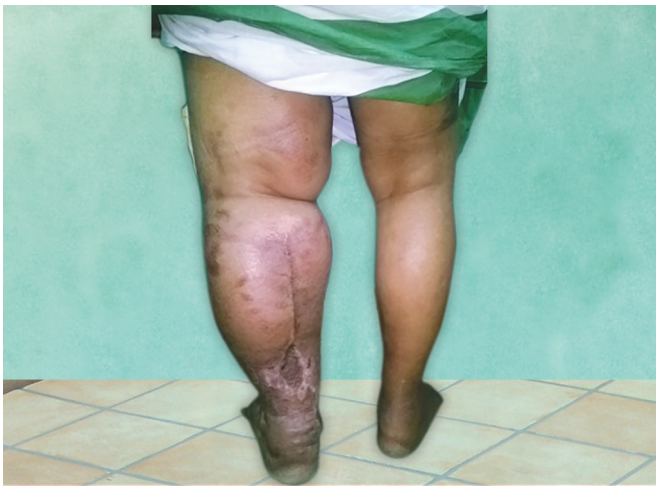

Fig. 4: Postoperative posterior view of Mrs B

Mrs A refused. She received conservative management with exercise therapy, gait training, and ADL training. Mrs B underwent a debulking procedure completed in 5 sittings, followed by postsurgical rehabilitation. With proper gait training and physical therapies, she started ambulating with a walker 3 months after the last surgery and independent ambulation was achieved after 6 months (Figs 3 and 4).

DISCUSSION

Filariasis is usually diagnosed by identifying microfilariae on Giemsa-stained, thin and thick blood smears, using the "gold standard" finger prick test. The finger prick test draws blood from the capillaries of the fingertip. Larger veins also can be used for blood extraction, but strict windows of the time of day must be observed, which reflect the feeding activities of the vector insects. For example, in case of *W. bancrofti*, whose vector is a mosquito, night is the preferred time for blood collection. *Loa loa's* vector is the deer fly; so, daytime collection is preferred. Finger prick test is only relevant to microfilariae that use the peripheral circulation as transport from the lungs to the skin. Some filarial worms, such as *Mansonella streptocerca* and *Onchocerca volvulus*, produce microfilariae that do not use the circulation; they reside in the skin only. For these worms, diagnosis relies upon skin snips and can be carried out at any time.

Avoidance of mosquito bites through personal protection measures or community-level vector control is the best option to prevent lymphatic filariasis.[3,4] Periodic examination of blood for infection and initiation of recommended treatment are also likely to prevent clinical manifestations.

Studies have shown that a single dose of DEC has the same long-term (1 year) effect in decreasing levels of microfilaremia, as the formerly recommended 12-day regimen of DEC. More importantly, the use of single doses of two drugs administered together (optimally albendazole with DEC or ivermectin) is 99% effective in removing microfilariae from the blood for a full year after treatment. This level of treatment effectiveness has made feasible new efforts to eliminate lymphatic filariasis.

But once chronic lymphedema has set in due to blockage of lymphatics by microfilaria, it is not amenable to any type of conservative management. Surgical debulking measures are the only salvage.[5,6] Following reconstructive surgery, postsurgical rehabilitation is the mainstay of management. Preoperative counselling,

early intervention in positioning, and postoperative gait and ADL training are the major prognostic factors in achieving ambulation.

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