

**Brief Case History and Literature Review :****Lymphatic Filariasis****Dr. Ramesh Narula\***, **Dr. Somdutt Singh\*\***, **Dr. V.K.Agarwal\*\*\***, **Dr. Kusum Narula\*\*\*\***

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**Abstract :** Lymphatic Filariasis / Elephantiasis is a disfiguring illness causing swelling: a chronic disease in which parasitic worms obstruct the lymphatic system, causing enlargement of parts of the body, e.g. the legs. We recently came across a young lady with an advanced stage of disease. Her agony and horrifying look of right leg propelled us to report her case in order to highlight the prevalence of disease and increase the awareness, so that necessary preventive measures can be taken up at an early stage for better community health.

**Key words :** Lymphatic Filariasis, Elephantiasis

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**INTRODUCTION:** Filariasis is a global problem. More than 1.1 billion people live in areas where there is a risk of infection.<sup>1</sup> It is estimated that about 600 million people are living in areas endemic for lymphatic filariasis in SEAR. 60 million are infected and about 31 million people have clinical manifestation of disease.<sup>2</sup> The term lymphatic filariasis covers infection with three closely related nematode worms-*W. bancrofti*, *B. malayi* and *B. timori*. All the three are transmitted to man by the bites of infected mosquitoes. All the three parasites have basically similar life cycles in man. The adult worms, 4-10 cm in length, live in the lymphatics, and the females produce microfilariae which at night circulate in large numbers in the peripheral blood. In the mosquito, ingested microfilariae facilitate the spread of the infection. The presence of adult worms in the lymphatics causes allergic lymphangitis. Recurrent episodes may lead to intermittent lymphatic obstruction and transient lymphoedema, which may later become permanent in the leg. Obstructed lymphatics become dilated and tortuous and

may rupture. Rupture into tissues leads to cellulitis, fibrosis and elephantiasis.<sup>3</sup>

**CASE REPORT:** A Camp was organized by the Department of Community Medicine at Miranpur Katra, Shahjahanpur. A lady, 32 yrs. reported with a gross swelling on her right leg from more than four years, walking by her own without support. Swelling was not reversible at night. On examination whole leg was oedematous, bluish in colour, deep skin fold at junction of middle and lower one third, non discharging sinus above the fold anteriorly, absence of nodules or warts and hairs. Non pitting in nature. On admission X ray leg revealed calcified filariae. Clinically she was labeled as case of lymphatic filariasis grade V. She was referred to higher centre for Lymphoscintigraphy followed by excision of the lymphoedematous tissues. (Fig.1)

**CLINICAL FEATURES:** There are bouts of fever accompanied by pain, tenderness and erythema along the course of inflamed lymphatic vessels. The fever abates after a few days and the symptoms and signs subside.

Further attacks follow, temporary oedema becomes more persistent, and regional lymph nodes enlarge. Progressive enlargement, coarsening, corrugation and fissuring of the skin and subcutaneous tissue with warty



Figure 1

superficial excrescences develops gradually, causing irreversible 'elephantiasis'. Eventually the adult worms may die but the lymphatics remain obstructed. The interval between infection and the onset of elephantiasis is usually not less than 10 years and elephantiasis develops only in association with repeated infections in highly endemic areas.<sup>3</sup>

#### DIAGNOSIS:

In the earliest stages of lymphangitis the diagnosis is made on clinical grounds, supported by eosinophilia and sometimes by positive serology.<sup>3</sup>

1) Night blood survey :-Definite diagnosis of lymphatic filariasis depends on demonstration

of living parasite in the human body, this is done by-

Thick film : Microfilariae appear in the blood at night after about a year from the time of infection and can be seen moving in a wet blood film

Membrane filter concentration method : by microfiltration of a sample of lysed blood. Is most sensitive method for detecting low density microfilaraemia

DEC provocation test : An initial exaggeration of symptoms following the administration of diethylcarbamazine suggests a filarial infection.

2) Serological tests :

Indirect fluorescence and enzyme-linked immunosorbent assay detect antibodies in over 95% of active cases and 70% of established elephantiasis.

3) Xenodiagnosis : Mosquitoes are allowed to feed on the patient and then dissected 2 weeks later.<sup>4</sup>

4) Ultrasonography: using a 7.5 MHz or 10 MHz probe can locate and visualize the movements of living adult worms of W.b. in the scrotal lymphatic's of asymptomatic males with microfilaraemia. The constant thrashing movements described as "Filaria dance sign" can be visualized.

5) Lymphoscintigraphy: The structure and function of the lymphatic's of the involved limbs can be assessed after injecting radio-labeled albumin or dextran in the web space of

the toes. The structural changes can be imaged using a Gamma camera. Lymphatic dilation & obstruction can be directly demonstrated even in early clinically asymptomatic stage of the disease.

6) X-ray : Calcified filariae may be demonstrable by radiography.

#### **PREVENTION:**

Treatment of the whole population in endemic areas with diethylcarbamazine, 100 mg for adults and 50 mg for children three times daily for 7 days has reduced but not eliminated the infection. Early chemotherapy prevents later elephantiasis. Individuals should avoid being bitten by mosquitoes.<sup>3</sup>

#### **TREATMENT FOR LYMPHEDEMA:**

##### Conservative:

1)Elastic compression garments:-are worn on the affected limb following complete decongestive therapy to maintain edema reduction. May be custom-fit or purchased over-the-counter, standard sizes. Bandaging or wrapping :- Application of several layers of padding and short-stretch bandages to the involved areas is done. Short-stretch bandages are preferred over long-stretch. During activity, whether exercise or daily activities, the short-stretch bandages enhance the pumping action of the lymph vessels by providing increased resistance for them to push against.

2)Sequential gradient pump therapy:- Compression pump technology utilizes a multi-chambered pneumatic sleeve with overlapping

cells, to gently move the lymph fluid. Patients may often receive treatment on a pump for 10-15 minutes before Manual Lymph Drainage, session to help break up fibrotic hard tissue. 3)Complete decongestive therapy or manual lymph drainage:- Manual manipulation of the lymphatic ducts consists of gentle, rhythmic massaging of the skin to stimulate the flow of lymph and its return to the blood circulation system. In the blood's passage through the kidneys, the excess fluid is filtered out and eliminated from the body through urination. CDT is generally effective on non-fibrotic lymphedema and less effective on more fibrotic legs, although it has been shown to help break up fibrotic tissue.<sup>5</sup>

Surgical: Techniques used only in extreme cases in order to reduce the weight of the affected limb, to help minimize the frequency of inflammatory attacks, to improve cosmesis, and to potentially reduce the risk of secondary angiosarcoma.<sup>5</sup>

The evidence to date indicates that: Surgery may improve the condition, but it does not cure lymphedema and also that surgery does not remove the need for wearing compression garments.<sup>6</sup>

Excisional techniques include:-

1)Circumferential excision of the tissue lymphedematous followed by skin grafting-Charles technique; longitudinal removal of the affected segment of skin and subcutaneous tissue and primary closure-Homans technique; excision of subcutaneous tissue and tunneling of a dermal flap through the fascia into a

muscular compartment of the leg-Thompson technique.

2)Lympholymphatic anastomosis -autologous lymphatic grafts to bridge obstructed lymphatic segments; lymphovenous shunt-anastomosis of lymphatic channels to veins; lymphangioplasty enteromesenteric flap omental transfer-pedicled portion of omentum transposed to the affected limb.

3)Modified liposuction has been developed to remove adipose tissue associated with longstanding lymphedema.<sup>7</sup>

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