

A NEW THERAPEUTIC MODALITY FOR CUTANEOUS LARVA MIGRANS

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ABSTRACT

We report one case of CLM out of a total of three who were treated successfully with ultrasound hyperthermia

INTRODUCTION

Cutaneous Larva Migrans (CLM) (Creeping eruption) is a clinical term used to describe a distinctive cutaneous eruption. CLM appears when human skin is penetrated and infested by larva of a variety of nematodes, mainly *Ancylostoma barsilienes*, *A. Canium*, *A. Ceylonicum*, *Uncinaria Stenocephala* and *Bubostomum Phlebotomum* ⁽¹⁾. These hookworms live in the intestine of the dogs and cats, and their ova are deposited in the animals faeces. The ova hatch into infective larva and the most heavily infested soil is the moist shaded areas of the ground particularly in warm climate. Human beings who incidentally come in contact with such infested soil will be exposed to the larva which will penetrate their skin and remain there because human race is not the natural habitat. Children are usually more affected than adults.

Clinically CLM presents as reddish or flush color linear or serpiginous slightly raised thread like line which is about 3 mm wide and is usually pruritic particularly at night.

The eruption is characterized by being actively creeping at the margin to form bizarre patterns.

Vesicles are often seen along the lines of tracks of the larvae. Itching and scratching may lead to secondary changes such as bullae, secondary infection, dermatitis and even erythema multiforme may complicate the infection. This infestation can be accompanied by Loefflers syndrome of pulmonary eosinophilia particularly in severe infestation. The disease has a self limited course but may persist upto one year.

Humans are incidental hosts and infection does not produce immunity ⁽²⁾. The larvae produce local disease limited to the epidermis due to the inability of the worm to penetrate the basement membrane zone ⁽²⁾. Although the clinical picture of CLM is diagnostic yet it still has to be differentiated from *Lava currens*, myiasis and scabies. A skin biopsy is of little value to demonstrate the larvae since they advance and creep beyond the clinical lesion.

Case presentation:

Five years old Omani female child presented with multiple typical cutaneous larva migrans which affect the dorsum and planter foot (Fig. 1) hand, legs (Fig. 2) and trunk of 2 months duration, some lesions were dermatitic. The child had not received any topical or systemic therapy, her blood investigations CBC, chemistry were within normal limits.

Ultrasound (US) therapy was recommended and given in the physiotherapy department where ultrasound therapeutic apparatus was used. The ultrasound apparatus produces mechanical vibrations with a frequency above 20 KHZ (20000 HZ). Practically the frequencies used for treatment range between 0.7 and 3 MHZ.



Fig 1. CLM of sole



Fig 2. CLM of leg

Penetration of US varied according to the type of tissue for example it is 30 to 82 mm in muscle tissue and up to 37 mm in the skin using 1 MHz head. There should be a contact medium between the applicator and the body like gel.

US has mechanical, biological and thermal effect. The intensity is expressed in Watt/CM² (W/CM²). We usually do not exceed 1 - 1.2 W/CM². The duration of treatment depends on the area to be treated. It is approximately 15 minutes to treat an area of 75 - 100 CM². The thermal effect is not felt by the patient. Our patient received the therapy for 3 minutes on each site 3 times per week for 2 weeks. All CLM lesions responded well after the third sitting (Fig.3) Ultrasound therapy is not given to eyes, heart, pregnant uterus, epiphyseal plates, brain tissue and testicles. Care should be taken if treatment is to be applied around vertebral column, areas with loss of sensation, endoprosthesis, tumours, thrombophlebitis, varicies, septic inflammations and diabetes mellitus.

DISCUSSION :

The standard treatment of CLM consists of topical application of 10% thiabendazole. In a study (Jelinek et al, 1994) ⁽³⁾ found that therapy with topical thiabendazole was successful in 98% of their patients (98 patients) and systemic antihelmintic therapy was necessary in two cases because of disseminated, extensive infection. In another study by (Davies et al, 1993) ⁽⁴⁾, they treated 60 patients suffering from CLM; 52 of them by topical thiabendazol with a cure rate of 98% and 7 patients with oral albendazol with a cure rate of 88%. Oral albendazol (antihelmintic) can be used in dose of 400 mg daily



Fig. 3. CLM of leg after treatment with ultrasound

for 7 days ⁽⁵⁾. Physical treatment such as cryotherapy, ethyl chloride spray, dry ice freezing can be used and often ineffective and not devoid of side-effects.

Local heat produced by ultrasound has been utilized in the treatment of a variety of the cutaneous disorders such as psoriasis ⁽⁶⁾ certain cases of scleroderma ⁽⁷⁾, plastic induration of penis ⁽⁸⁾ and cutaneous leishmaniasis ⁽⁹⁾. On the same principle, we utilized the ultrasound hyperthermia to kill the larvae and it proved to be effective and safe. To the best of our knowledge this is the first case of CLM to be treated with ultrasound heating.

We treated 2 other patients on the same line successfully. This rapid preliminary report of one case is meant to invite others to use this therapeutic modality to assess its value.

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