

Creeping Bugs and Winding Rash- Series of Cutaneous Larva Migrans Cases from Southern Suburban Chennai, Tamil Nadu, India

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ABSTRACT

Cutaneous Larva Migrans (CLM) is caused by penetration of skin by the third stage larvae of hookworms, and most commonly caused by *Ancylostoma braziliense* (dog hookworm). Humans act as dead-end hosts for this parasite. This series reports six cases of creeping eruptions that occurred on buttocks and back in four infants and on the feet in two toddlers. All the cases clustered after the rainy seasons in the months of December and January. Diagnosis was established based on history and clinical examination. All six children were administered five days of albendazole and they recovered completely. This series is presented to make readers aware of the underestimated public health problem in infants with distinctive skin eruptions of larva migrans occurring in the tropical subcontinent of Indian coastal areas. This is clinically relevant as treatment of this condition is very simple and cost-effective.

Keywords: Albendazole, Creeping eruptions, Infants, Rains

INTRODUCTION

The CLM is a skin eruption caused by infestation and migration of multiple types of hookworm larvae like *Ancylostoma braziliense* and *Ancylostoma caninum* in human skin and transmitted through skin contact with contaminated soil [1]. Creeping eruption, creeping verminous dermatitis, sand worms, plumber's itch and duck hunter's itch are the various terminologies used to describe this infestation. Eggs shed in the faeces of dogs and cats harbouring adult hookworms hatch within a day and in a week's course develop into infective larvae. CLM caused by *Strongyloides stercoralis* infection is termed larva currens. This should not be misinterpreted as CLM as progression of the skin lesion is slower compared to larva currens [2]. Tropical countries like India during wet rainy seasons and populations living in kutch house are contributors for higher prevalence especially on the coastal areas [1,3]. Though it occurs across all ages and both sexes, children are reported to be affected predominantly [3]. It presents as typical erythematous, serpiginous, pruritic, migratory skin eruptions over areas in contact with the ground like feet, legs and buttocks [4,5]. On encountering a suitable host, it penetrates the corneal layer of skin discharging hyaluronidase and ends its life cycle there itself as it is incapable of penetrating the basal skin layer. Histopathology of the affected part demonstrates spongiotic eosinophilic dermatitis with vesicles containing neutrophils and eosinophils [4]. It can confuse the clinicians as it closely mimics few non CLM conditions like scabies and loiasis. Diagnosis is based on the clinical ground of serpiginous eruption in patients with history of exposure [5].

This case series reports six young children, mostly infants, with CLM from suburban Chennai, near the coastal areas. Another possible epidemiological significance to be noted is that all cases clustered after seasonal rains and were noted to occur in the months of December and January.

CASE SERIES

Case 1

A six-month-old male infant reported with complaints of raised, thread-like track in the right gluteal region since last seven days [Table/Fig-1a]. The mother confirmed that the tract was growing

each day and this was accompanied by irritability and reduced sleep. The family had poor educational status and hailed from a low socio-economic background living in a kutch house. On examination, a serpiginous track was noted on his gluteal region. Systemic examination was normal. His complete blood counts were normal with no eosinophilia. Clinical diagnosis of CLM was made and treated with oral albendazole and antihistamine (Syrup Cetrizine-2.5 mg once daily to alleviate itching) for five days. Complete recovery was noted in two weeks on follow-up [Table/Fig-1b].



[Table/Fig-1]: a) Showing raised thread like appearance in gluteal region. b) Complete recovery in gluteal region.

Case 2

A six-month-old male infant presented with snake-like lesions on the buttock region, migrating at the rate of 2-3 cm per day of 10 days duration. There was a history of recent massive seasonal rains which flooded their house. There was a history of pet dogs and cats allowed inside their house premises. A raised thread like tract on buttocks 8 cm in length was seen [Table/Fig-2]. Systemic examination was normal. Complete blood counts revealed no abnormality. Stool analysis for ova and cyst were negative. Clinical diagnosis of CLM was made and the child was treated with oral albendazole and antihistamine (Syrup Cetrizine-2.5 mg once daily) for five days. After two weeks, on follow-up visit, the child had recovered completely.

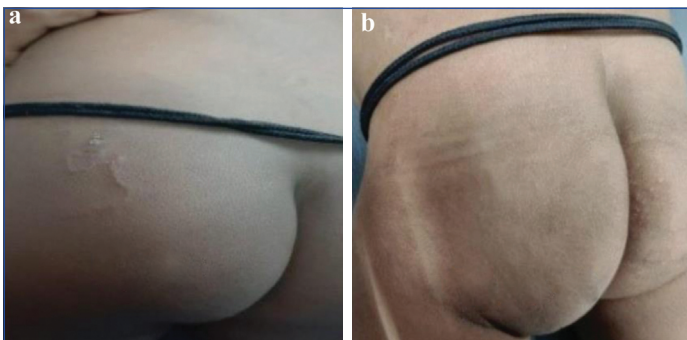
Case 3

An eight-month-old female infant was brought by her mother after a period of intense seasonal rains from a nearby coastal village



[Table/Fig-2]: Raised thread like track on buttock.

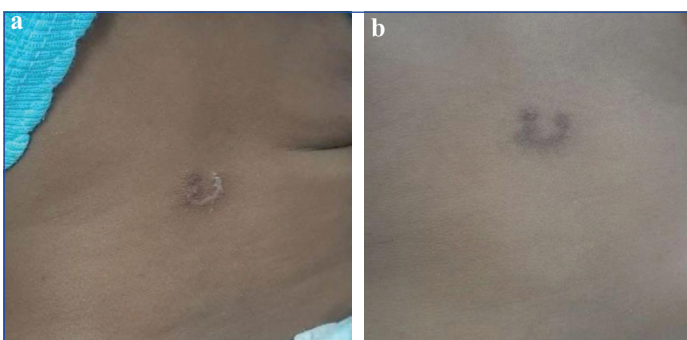
with the complaints of worm-like tracts in the buttocks [Table/Fig-3a]. This was noticed over a 10-day period with daily increase in the size of the tract from one end. She belonged to a low socio-economic class with a number of stray and pet dogs around their kutcha house. There were no other associated systemic features. Her complete blood counts and stool examination were normal. The infant was treated with oral albendazole and antihistamine for five days (Syrup Cetrizine-2.5 mg once daily) with the clinical diagnosis of CLM, following which the infant recovered completely in three weeks [Table/Fig-3b].



[Table/Fig-3]: a) Worm-like appearance in buttocks. b) Complete recovery after three weeks.

Case 4

A five-month-old female infant was brought with complaints of a serpiginous palpable lesion on the back slowly growing for one week after stormy seasonal rains in the month of December [Table/Fig-4a]. Hailing from a nearby coastal village, mother gave history that several dogs and cats inhabit their muddy floor house. Her other general, systemic examination and routine laboratory investigations were normal. She was treated with a five-day course of oral albendazole. On follow-up after 15 days, she had recovered well [Table/Fig-4b].



[Table/Fig-4]: a) Serpiginous lesion on back. b) Follow-up shows complete recovery.

Case 5

A three-year-old male child presented with complaints of persistent itchy, erythematous brown tracts in the heel and ankle of 15-day duration [Table/Fig-5]. The mother gave a history of rearing pets at home and of barefoot walking in their farm house. Systemic examination was normal and blood counts showed eosinophilia. He was diagnosed as CLM on clinical grounds and treated with a five-day course of oral albendazole and antihistamine (Syrup Cetrizine-2.5 mg once daily). The child recovered completely in two weeks.



[Table/Fig-5]: Erythematous brown tracts in the heel and ankle.

Case 6

An 18-month-old girl child was brought by her mother from a nearby coastal village with complaints of growing snake-like tracts in the right dorsal foot of seven day's duration [Table/Fig-6]. They hailed from a poor socio-economic background living with farm and pet animals around. Her systemic examination was normal. Her blood counts showed mild eosinophilia. CLM was the clinical diagnosis. She was treated with a five-day course of oral albendazole and antihistamine (Syrup Cetrizine-2.5 mg once daily). The child recovered completely in two weeks.



[Table/Fig-6]: Snake-like tract on foot.

DISCUSSION

The CLM usually has an initial erythematous lesion which is followed by a serpiginous or bizarre tract migrating at 2-5 cm per day. It may rarely in severe infections have multiple tracks [2]. Clinical manifestations in the above cases varied from mild dermatitis with itching and burning sensations to classical creeping eruptions the disease commonly occurred in coastal and subcoastal southern

Chennai. It is also reported that the disease commonly occurs in resource poor regions of the tropics, which matched the demography of present cases (with other studies done by Karthikeyan K and Thappa DM; Heukelbach J and Feldmeier H) [3,6]. Paul I and Singh B reported CLM cases that occurred in a broader age group in children from 7 months to 14 years [5]. This was in contrast to index reported cases who are non ambulant infants and young children [7]. Jelinek T et al., reported that most lesions were located in the lower extremities similar to present cases where gluteal regions and lower extremities were involved. However, in contrast to the above study, lesions in the back were also found in young infants [8]. Diagnosis was established based on history of walking barefoot, residence in coastal villages and with the characteristic physical examination of the lesions. Similarly diagnosis was made clinically in studies of Siddalingappa K et al., [9]. Pet animals were found to be the main sources of infection among all the reported cases, which was similar to the study reported by Coello RD et al., [10]. Enzyme-Linked Immunosorbent Assay (ELISA) methods with specific IgG have been suggested as indirect evidence for CLM [9]. Epiluminescence microscopy was considered in olden days for its non invasive method to detect larva and confirm the diagnosis as reported by Siddalingappa K et al., [9].

Interestingly, all index cases did not report complications like weight loss in contrast to studies by Maxfield L and Crane JS [2]. Some children had poor appetite and irritability which was transient and disappeared on treatment. Their findings of CLM complications are rare like persistent local skin allergies and non resolving superadded skin infections like *Staphylococcus aureus* or *Streptococcus pyogenes* due to eczematization. Systemic effects like Loeffler's syndrome in *Strongyloides* and myositis in *Ancylostoma caninum* infestations are rarely seen [6,7]. All the patients were treated universally with standard Albendazole (20 mg/kg/day) p/o ODx five days. This was also followed in most other studies like Kaur S et al., and Siddalingappa K et al., [7,9]. It was highly effective in all six cases. It kills all forms of larvae though its mechanism of action is not clearly established. Oral antihistaminic agents for itching and irritability were advised for three days. Resolution of symptoms started in five days and complete resolution of lesions ranged from 14-21 days. Other treatment options are oral and topical thiabendazole (side-effects -moderate to milder gastrointestinal disturbances). Ivermectin in a single dose of 200 µg/kg has also been found to be effective

in parasite eradication with lesser side-effects [7]. These drugs were not used in index cases and the treatment outcome of all the diagnosed CLM cases was excellent with no residual scars.

The CLM is a common yet underestimated public health problem of tropical coastal areas. It can be prevented by simple avoidance of barefoot walking and by regular anthelmintic drugs to young children and additionally to pet animals.

CONCLUSION(S)

This case series describes four infants and two toddlers with typical CLM lesions over back, buttocks and foot. CLM can be diagnosed clinically by its morphology and itchy creeping tracts. Albendazole along with symptomatic treatment achieves a complete cure for these gruesome skin lesions and thereby prevents potential complications. Biannual deworming of young children and additionally pet animals needs to be implemented more stringently to control cutaneous as well as systemic larva disease. It will thereby prevent many common worm infestations in young infants.

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