Alghasham. Scr Med. 2025 Jul-Aug;56(4):845-9. DOI:10.5937/scriptamed56-59076

CASE REPORT

Paediatric *Cutaneous Larva Migrans*: A Case Report From an Uncommon Region

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Abstract

Cutaneous larva migrans (CLM) is a skin infection caused by the of hookworm larvae, most commonly *Ancylostoma braziliense* or *Ancylostoma caninum*, within the outer layer of the skin. While CLM is primarily found in tropical and subtropical areas, occasional cases have been documented in other regions globally. This case report describes an 8-year-old boy from Saudi Arabia who presented with an unusual case of CLM which is not usually seen in our region of the world, characterised by a serpiginous, erythematous lesion on the medial aspect of his left little finger. The patient had no recent travel history, which made this case particularly noteworthy given the rarity of CLM in this region. The diagnosis was supported by clinical examination and imaging studies, which revealed inflammatory changes consistent with CLM. This case underscores the importance of recognising CLM, even in non-endemic regions and highlights the need for awareness among clinicians regarding the presentation and management of this parasitic infection.

Key words: *Larva migrans, cutaneous; Ancylostomatoidea*; Parasites; Saudi Arabia; Filariform larva.

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Citation:
Alghasham YA. Paediatric cutaneous *larva migrans*: a case report from an uncommon region. Scr Med. 2025 Jul-Aug;56(4):845-9.

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Received: 25 May 2025
Revision received: 18 July 2025
Accepted: 18 July 2025

Introduction

Cutaneous larva migrans (CLM) is a zoonotic condition resulting from the invasion and movement of filariform larvae within the epidermis.[1] These larvae are typically derived from animals, particularly dogs and cats, with the most common species being *Ancylostoma braziliense* and *Ancylostoma caninum*.[2] CLM manifests as intensely itchy, serpiginous, erythematous and raised tracks that reflects the subepidermal migration of the larva. These tunnels form as the larvae migrate under the skin, often progressing 2 to 5 centimetres per day.[3] The infection is commonly self-limited, typically resolving within 2 to 8 weeks, although the associated pruritus can be severe and significantly impact the patient's quality of life. CLM is widespread in underdeveloped nations in tropical and subtropical regions, especially in Brazil, India and the West Indies.[4] However, cases are occasionally reported in high-income countries, often among tourists who have visited endemic regions. Although CLM is not typically endemic in Saudi Arabia, sporadic cases have been reported,[5] making it important for clinicians in non-endemic regions to be familiar with this condition. The management of CLM generally involves the use of antiparasitic medications, such as albendazole or ivermectin,[6,7] which are effective in resolving the infection and alleviating symptoms. This case report describes a paediatric patient in Saudi Arabia with CLM, highlighting the need for awareness of this parasitic infection in areas where it is not commonly encountered.

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Case presentation

An 8-year-old boy presented with the chief complaint of a foreign body sensation in his left hand, specifically between the 4th and 5th fingers, accompanied by oedema, redness, tenderness and pain. The family initially suspected an insect bite or foreign body embedded in the hand. On applying ice, the family observed the movement of what appeared to be a worm, which intensified the pain. The patient was a swimmer and had no recent travel history. He had experienced episodes of high-grade fever, which were relieved by paracetamol and a 10-day history of non-episodic, non-productive cough. The patient's father reported an undocumented weight loss of approximately 7 kg for the last 2 months. On examination, the patient appeared well, although a serpiginous lesion was noted on the medial aspect of the left little finger (Figure 1). The boy was thin and lean, with no visceromegaly. The rest of physical examination were unremarkable. Blood workup revealed no significant findings (Table 1).

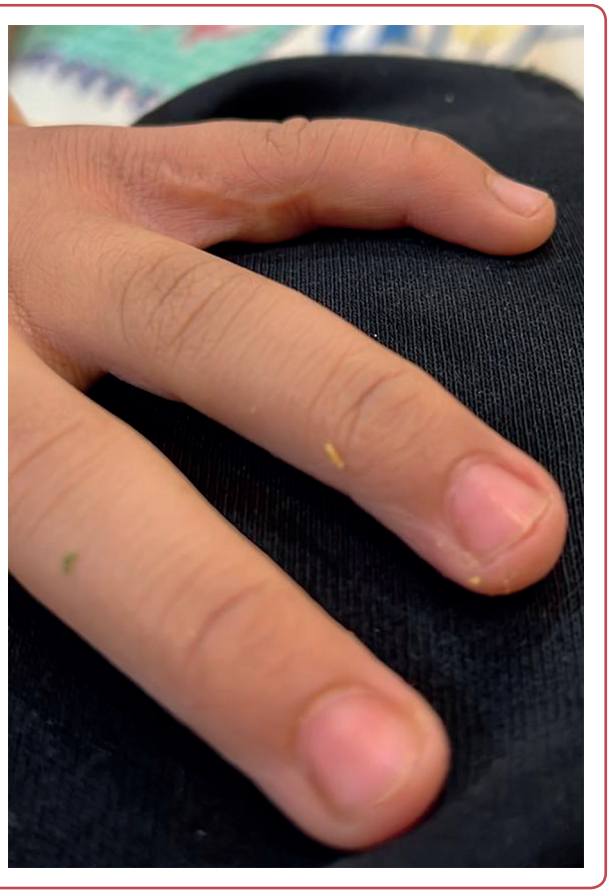

Figure 1: Serpiginous lesion on the medial aspect of the left little finger

Stool analysis indicated a brown colour and soft consistency, with no pus cells, erythrocytes, or parasitic organisms, such as *Ascaris lumbricoides* or *Giardia lamblia*. Further investigations included a chest and abdominal radiography was done because of the cough that he was having in addition the abdominal radiography was done as part of screening mainly. Imaging revealed accentuated bronchovascular markings and mild peribronchial cuffing, indicating bronchiolitis, with no major collapse, consolidation, or pneumothorax. The costophrenic and cardiophrenic angles were clear and cardiac size and configuration were normal. Retained faecal matter in the large bowel suggested constipation with no abnormal mediastinal shadows, dilatation, air-fluid levels, free gas, or calcification. Abdominal ultrasound revealed a normal liver, gallbladder, biliary system, kidneys, pancreas, spleen and urinary bladder, with no lymphadenopathy or free fluid/collection. A focused ultrasound of the left hand which was the affected part identified an irregularly defined area of heterogeneous fluid collection around the fourth and fifth fingers, measuring 2.7 x 0.79 cm, with surrounding inflammatory processes and subcutaneous soft tissue oedematous changes indicative of cellulitis. No definite foreign body was identified. A hand radiograph showed prominent soft tissue swelling along the medial aspect of the fifth finger, with no definite radiopaque foreign body, fracture, or dislocation. The bone density was normal.

The clinical presentation and investigation findings led to the diagnosis of *cutaneous larva migrans*, a condition uncommon in Saudi Arabia.

Table 1 Biochemical analyses

Parameter	Result value	Reference value
Red blood cells (RBCs)	4.27 x 10^{12}/L	4.1-5.5 x 10^{12}/L
Haemoglobin	11.5 g/dL	11-14 g/dL
Haematocrit	36.30 %	33-42 %
Mean corpuscular volume	84.8 fL	73-87 fL

Mean corpuscular haemoglobin	26.9 pg	27-32 pg
Mean corpuscular haemoglobin concentration	31.7 g/dL	29-37 g/dL
Red cell distribution width	11.60 %	11.6-15.5 %
Platelets	302 x 10^9/L	150-450 x 10^9/L
Mean platelet volume	5.68 fL	7-10 fL
White blood cells	5.67 x 10^9/L	5-15 x 10^9/L
Neutrophils	2.01 x 10^9/L	2-6.9 x 10^9/L
Neutrophils %	35.51 %	25-60 %
Eosinophils	0.089 x 10^9/L	< 0.5 x 10^9/L
Eosinophils %	1.57 %	0-5 %
Basophils	0.07 x 10^9/L	< 0.2 x 10^9/L
Basophils %	1.24 %	< 2.5 %
Lymphocytes	2.997 x 10^9/L	1-5 x10^9/L
Lymphocytes %	52.91 %	20-70 %
Monocytes	0.498 x 10^9/L	0.2-0.9 x10^9/L
Monocytes %	8.78 %	1-11 %
Total bilirubin	17 µmol/L	3.4-20.5 µmol/L
Urea	3.3 mmol/L	3.2-7.9 mmol/L
Alanine transaminase	11 U/L	5-55 U/L
Aspartate aminotransferase	26 U/L	5-34 U/L
Creatinine	32 µmol/L	23-53.9 µmol/L
Potassium	3.9 mmol/L	3.4-4.7 mmol/L

The patient was started on albendazole for 3 days and follow-up was arranged after a month which showed complete resolution of the swelling.

Discussion

CLM is a parasitic skin infection caused by the migration of hookworm larvae within the epidermis, most commonly originating from species such as *Ancylostoma braziliense* and *Ancylostoma caninum*. Although CLM is predominantly found in tropical and subtropical regions,[5] it is relatively uncommon in Saudi Arabia. This case of an 8-year-old boy with CLM highlights the importance of recognising this parasitic infection even in regions where it is not typically endemic.

The clinical presentation in this case, characterised by a serpiginous lesion on the medial aspect of the left little finger, aligns with the typical presentation of CLM. The family's observation of the lesion's movement, coupled with the physical findings and ultrasonographic evidence of inflammatory changes, strongly supported the diagnosis of CLM.

In terms of differential diagnosis, conditions such as *larva currens, visceral larva migrans, myiasis, scabies* and *erythema migrans* of Lyme disease must be considered, as they can present with similar symptoms.[8] Additionally, other dermatologic conditions like inflamed cysts, abscesses, folliculitis and arthropod bites may mimic the appearance of CLM.[9] Atypical presentations of CLM, such as bullous or zosteriform patterns, though rare, further complicate the differential diagnosis, emphasising the need for a careful and thorough clinical assessment.[10]

Moreover, distinguishing CLM from conditions like creeping hair or creeping *pili migrans* is essential to ensure accurate diagnosis and appropriate treatment.[11, 12] Differentiating CLM from other parasitic skin infections and infestations is crucial, especially in travellers or individuals residing in endemic regions.[13] Considering the clinical context, travel history and characteristic presentation of the skin lesions can aid in distinguishing CLM from other similar conditions.[14] Additionally, being aware of the risk factors and environmental exposures that predispose individuals to CLM can help in narrowing down the list of differentials.[15]

The diagnosis of CLM in this patient was confirmed through the clinical features and the absence of other common parasitic organisms in the stool analysis. Treatment options for CLM include the administration of antiparasitic agents such as albendazole or ivermectin, which have

been shown to be effective.[1] In this case, the decision to initiate treatment was supported by the presence of the characteristic serpiginous lesion, along with the supportive imaging findings.

This case underscores the necessity for clinicians in regions not typically associated with CLM to maintain a high index of suspicion, particularly in patients with a history of contact with potentially contaminated soil or environments conducive to the transmission of hookworm larvae. Given the global travel patterns and the movement of populations, awareness of such parasitic infections is increasingly important, even in non-endemic areas. The management of CLM should also include patient education on preventive measures, such as avoiding direct contact with soil in areas where animal faeces may be present, to reduce the risk of future infections. In addition to anthelminthic therapy, which helps relieve symptoms and shorten the disease duration. Regarding the use of anthelminthic therapy, specifically albendazole, in children with CLM, it is not FDA-approved for the treatment of CLM; however, it is well-established in global clinical practice and endorsed by World Health Organization (WHO) guidelines for mass deworming programs in children aged 12 months and above.[16] Albendazole has also been widely and effectively used in the treatment of CLM in paediatric population, with multiple case reports and observational studies supporting its safety and efficacy in short-course regimens.[17-19]

Conclusion

This case highlights the need for clinicians to maintain a broad differential diagnosis, even in regions where CLM is rare, particularly in patients with a history of exposure to potentially contaminated environments. Furthermore, it emphasises the role of public health education in preventing CLM through improved sanitation practices and awareness of the risks associated with exposure to contaminated soil.

Ethics

Our institution does not require ethics approval for reporting individual cases or case series. A written informed consent for anonymised patient information to be published in this article was obtained from the patient's guardian.

Acknowledgement

None.

Conflicts of interest

The author declares that there is no conflict of interest.

Funding

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Data access

The data that support the findings of this study are available from the corresponding author upon reasonable individual request.

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Conceptualisation: YAA
Methodology: YAA
Formal analysis: YAA
Investigation: YAA
Data curation: YAA
Writing - original draft: YAA
Writing - review and editing: YAA

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