An Unusual Case of Ascariasis-Induced Convulsions and Unconsciousness in a Young Adult Male at Tanga Regional Referral Hospital in Tanzania

Shabbir Moizali[1], Hillary Raphael Sebukoto[2]

[1]Tanga Regional Referral Hospital, P. O. Box 452, Tanga, Tanzania

[2]National Institute for Medical Research, P. O. Box 5004, Tanga, Tanzania

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ABSTRACT

Human beings are the definitive host for Ascaris lumbricoides. Infected persons may either be asymptomatic or may present with abdominal pain, nausea, vomiting, bloating, and diarrhea. The authors report a case of intestinal A. lumbricoides with neurological manifestations. A 25-year-old male presented with repeated episodes of tonic-clonic convulsions and loss of consciousness lasting for 3 – 5 minutes, without regaining consciousness. There was no history of head trauma and had no history of experiencing similar episodes of convulsions in the past. He neither had a fever nor abdominal pain. Initial investigations, including imaging and blood tests, were normal. The patient was empirically treated with antihelminthic therapy, which resulted in the expulsion of multiple Ascaris lumbricoides. This case highlights the importance of considering parasitic infections in the differential diagnosis of neurological symptoms, even in the absence of typical gastrointestinal manifestations.

Keywords: Ascariasis, Convulsions, Neurological Symptoms, Anthelminthic Therapy, Case Report, Young Adult Male, Parasitic Infections

BACKGROUND

Ascariasis is a common helminthic infection caused by Ascaris lumbricoides, primarily affecting children in tropical and subtropical regions. While gastrointestinal symptoms are typical, neurological manifestations are rare and often overlooked (1). This case report describes a young adult male who presented with repeated tonic-clonic convulsions and loss of consciousness, later diagnosed with ascariasis.

Case Presentation

A 25-year-old male presented with a 2-day history of recurrent episodes of generalized tonic-clonic convulsions lasting for 3-5 minutes, without regaining consciousness. Neither had he had a history of fever, abdominal pain vomiting, passing loose stool, head trauma, drug intake, history of similar convulsions in the past, nor history of pork consumption. He however was reported to have been traveling in endemic areas where he had been engaging in fishing activities. On admission, he was unconscious with a Glasgow coma scale score of 8/15 (E2 V2 M4). He was afebrile with stable vital signs. He had hypereflexia on testing for deep tendon reflexes. The rest of the systemic examinations were normal. The malaria rapid diagnostic test (mRDT) and Peripheral blood smear were negative. The blood sugar, liver and renal function tests, serum electrolytes, Complete Blood Count (CBC), serum electrolytes, arterial blood gases, cerebrospinal fluid (CSF), and urine analysis, were normal. The electroencephalogram (EEG), the brain Computed tomography (CT) scan, and magnetic resonance imaging (MRI) were normal. HIV serology was negative.

Given the absence of obvious causes, broad differential diagnoses were considered, including infections, metabolic disorders, and central nervous system pathologies. Despite normal initial investigations, empirical antihelminthic treatment was initiated due to the patient's history of engaging in fishing and gardening activities.

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Treatment

The patient was treated with albendazole, 400 mg orally once, followed by a second dose after 14 days. Albendazole is a broad-spectrum anthelmintic that is effective against a variety of helminths, including Ascaris lumbricoides (2).

Outcome

Following the treatment, on the third day, the patient expelled multiple adult roundworms in stool, which were identified as Ascaris lumbricoides (Fig.1). There were no further episodes of convulsions or loss of consciousness, and the patient recovered fully.

Patient's Perspective: The patient was informed about his illness and the presence of Ascaris lumbricoides. He was initially shocked but relieved after understanding that the condition was treatable with medication. The patient followed the treatment regimen as prescribed and reported a complete recovery without further episodes of convulsions or loss of consciousness. The patient expressed gratitude for the thorough care and follow-up provided by the medical team.

DISCUSSION

Ascariasis is typically associated with gastrointestinal symptoms such as abdominal pain, nausea, and intestinal obstruction. However, ectopic migration of larvae can lead to unusual presentations, including neurological symptoms (1). Neurological manifestations of ascariasis are rare but can occur due to several mechanisms. One potential mechanism is the aberrant migration of larvae through the bloodstream, leading to direct central nervous system involvement (3). Another possibility is an immune-mediated response triggered by the presence of the parasite, causing inflammation and neurological symptoms (2). The pathophysiology of neurological manifestations in ascariasis is not well understood but may involve aberrant migration of larvae or immune-mediated responses. This case underscores the importance of considering parasitic infections in patients with unexplained neurological symptoms, particularly in endemic areas.

Clinical Significance

This case emphasizes the need for a high index of suspicion for parasitic infections in patients presenting with unexplained neurological symptoms, especially in regions where such infections are endemic. Early diagnosis and treatment with appropriate anthelmintic therapy can prevent complications and lead to a complete recovery.

REVIEW OF LITERATURE

The global epidemiology of Ascariasis has been highlighted, noting that it predominantly affects children in tropical and subtropical regions (1). The study emphasized the public health impact of soil-transmitted helminths and the need for effective control measures

More updates on the global picture of soil-transmitted helminth infections have been made, discussing the burden of the disease and the challenges in control and prevention (2). The authors highlighted that neurological manifestations, while rare, should be considered especially in endemic areas.

Clinical manifestations, and treatment options of soil-transmitted helminth infections, including ascariasis, trichuriasis, and hookworm were reviewed, discussing their pathophysiology (3). The review highlighted the importance of recognizing atypical presentations of these infections.

CONCLUSION

This case report highlights a rare presentation of ascariasis with convulsions and loss of consciousness in a young adult male. Prompt recognition and treatment with antihelminthic therapy led to the resolution of

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symptoms, emphasizing the need for a high index of suspicion for parasitic infections in similar clinical scenarios.

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Declaration of Competing Interest: The authors declare that they have no known competing interests that could have appeared to influence the work reported in this case report.

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Figure 1: The image below shows the expelled Ascaris lumbricoides from the patient described in the case report.