

Bertiella studeri infection: resistance to niclosamide

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Introduction

Bertiella studeri is a rare parasite of humans and inhabits the small intestine. Monkeys are its natural hosts. Certain species of oribatid mites serve as intermediate hosts. Accidental ingestion of the mite containing the cysticeroid stage gives rise to human infection. The first case of human infection in Sri Lanka was reported in 1976 [1] and three more cases have been reported since [2,3]. These patients appear to have been treated successfully with niclosamide, but we here report a case of possible resistance to this drug.

Case report

A 30-month old male child from Badureliya (Southern Province of Sri Lanka) was brought to the Lady Ridgeway Hospital, Colombo, with a history of passing white, flat, motile, worm segments in the stools. The segments were identified as proglottids of *Bertiella studeri*. The child was treated with 1 g of niclosamide orally as a single dose with oral polyethylene glycol and electrolytes (Klean prep[®]), and a bowel wash was given immediately after. As the worm or its segments were not expelled the entire treatment was repeated two weeks later. A few dead segments were passed thereafter in stools. However, the scolex was not detected.

Three months later the child was readmitted with the same problem and the segments passed were identified as those of *B. studeri*. Treatment with niclosamide had to be repeated twice, two weeks apart, to achieve evacuation of dead segments. The scolex was not detected on this occasion either. Six months later, the child began passing live segments yet again arousing suspicion of resistance to niclosamide. The child was treated this time with oral praziquantel, 100 mg given as a single dose followed immediately by oral polyethylene glycol and electrolytes (Klean prep[®]), and a bowel wash. After a few hours the dead worm with proximal segments was passed. The scolex was not detected. However, the child has not passed any segments to date, six months after treatment.

Discussion

Human infection is acquired from accidental ingestion of the cysticeroid larval stage containing oribatid mite that is found in the soil. Thus the possibility of reinfection

needs to be considered. However, the parents were knowledgeable about the mode of transmission of the parasite, and were certain that the child was not exposed to contaminated soil after the initial episode of the infection. Hence, this is likely to be a case of resistance to niclosamide of *B. studeri*. Niclosamide is frequently used for the treatment of human and animal tapeworm infections and resistance to the drug has been reported earlier from India [4,5].

Infection with *B. studeri* is not uncommon in Sri Lanka, especially in the Southern Province [2,3], but the drugs needed for treatment (viz., niclosamide and praziquantel) are not freely available in the country. The cost and time taken to import these drugs is a matter of concern.

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