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CASE REPORT

TRICHINELLA MYOPATHY IN A CHILD PRESENTING WITH A NECK MASS: CASE REPORT AND LITERATURE REVIEW

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ABSTRACT

Human Trichinellosis is a widely distributed tissue nematode infection. It is infrequently from Ethiopian children. We report on a twelve-year-old boy who presented with a left-sided neck swelling of three months and dysphagia of one-month duration. A muscular biopsy confirmed the presence of Trichinellosis and the child was treated with Albendazole for ten days. Children with dietary risk factors and presenting with chronic myositis should be evaluated for Trichinella infection as part of their work-up.
Keywords: *Children, Ethiopia, Myositis, Trichinellosis,*

INTRODUCTION

Human Trichinellosis is widespread globally. Any carnivorous animal can serve as the reservoir of Trichinella species. The predominant pathogen is Trichinella spiralis followed by Trichinella native, and Trichinella britovi. Eating raw meat is the leading risk factor for acquiring the infection. Following ingestion, larvae released from a gravid female enter circulation and preferentially disseminate to skeletal muscles. Though mostly asymptomatic, enteric and extra- gastrointestinal symptoms can follow heavy infections (2).

Outbreaks among humans had been described in Ethiopia (from soldiers in the Gojjam region and police officers in the Arsi region) in relation to the consumption of warthog meat in the 1980s and 1990s, with a total of 28 cases and a single mortality described (3, 4). We are reporting our case as Trichinellosis has not been described among children in Ethiopia and because its description is informative for child health practitioners to be on the lookout for the risk factors, presentation and treatment for Trichinella infections.

CASE PRESENTATION

A twelve-year-old boy presented to Tikur Anbessa Specialized Hospital with a left lateral neck mass of three months. It was pea-sized initially but progressively enlarged. As it was not associated with pain or warmth, his parents only sought medical care when he started experiencing dysphagia one month prior to presentation. He had no other body swellings. He had no fever, sweating, breathing difficulties, cough, a loss of appetite or weight. He lived in rural Southern Ethiopia with his diet comprising of legumes, fruits and intermittently raw beef. His past medical history was unremarkable. His family reported he had received all childhood vaccines. He had frequent exposure to cattle and sheep within the proximity of his household.

He was comfortable upon examination. His vital signs were within normal limits. He had a left posterior cervical triangle lymphadenopathy – non-matted, non-tender, mobile, and the largest spanning 2 cm. He also had a solitary large non-tender left lateral neck mass, with a smooth overlying surface and measuring 15 cm x 15 cm (Figure 1A).

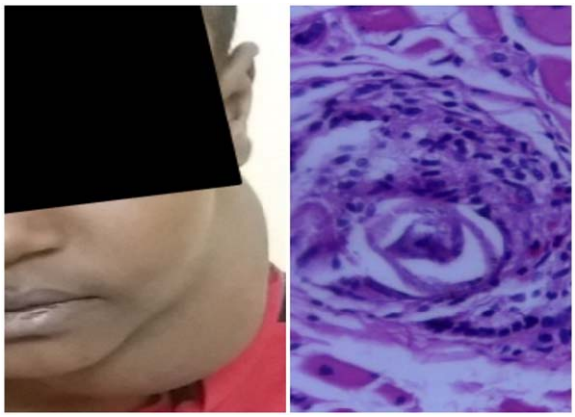

Figure 1A: Neck swelling of the child; Figure 1B: Histologic section from muscle biopsy

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Serial hematologic work-ups showed WBC counts of 6000 – 7000/mm^3, absolute neutrophil counts of 3800 - 4300/mm^3, absolute lymphocyte counts of 1400 - 2200/mm^3, absolute eosinophil counts of 400 - 500/mm^3, normal basophil and monocyte counts; hemoglobin of 9.5 gm/dl, mean corpuscular volume of 63 fl and platelets of 415,000/mm^3. He had normal serum electrolytes, renal/liver function tests, serum LDH and uric acid levels. His chest x-ray was normal but a chest CT showed multiple homogeneously enhancing matted cervical (measuring 10.3 x 8.6 x 4.9 cm overall), bilateral axillary and mediastinal lymphadenopathies.

A bone marrow aspirate showed no abnormalities. The neck muscle biopsy confirmed multiple cystic larvae (*Trichinella*) within skeletal muscle along with epithelial granuloma and foreign body type multinucleated giant cells (Figure 1B) with a lymph node aspirate suggestive of a reactive lymphadenopathy. Stool microscopy was negative. He was treated with a ten day regimen of Albendazole. The child was subsequently lost from follow-up.

DISCUSSION CONCLUSIONS

After ingestion of infected meat, symptomatic Trichinellosis progresses through two phases: enteral and parenteral. The enteral phase is notable for watery diarrhea, abdominal discomfort, and vomiting. The third week of illness heralds the onset of the parenteral phase whereby adult worms produce larvae which encyst within striated cells (5).

Neck, extra-ocular, and masseter muscles are frequently affected. Myalgia, facial and peri-orbital edema, sub-conjunctival, and splinter hemorrhages can be seen due to inflammatory and allergic responses to invading larvae (6). Our patient experienced neck muscle swelling described in the literature mentioned above, while other extra-muscular manifestations were not seen. Pneumonia, encephalitis, or myocarditis cause most mortality in heavy infections (7). The stool examination is occasionally helpful in diagnosing enteric illness.

A biopsy from a tender swollen muscle, eosinophilia, elevated creatinine phosphokinase, positive IgM and IgG antibodies, or abnormal electromyography helps confirm *Trichinella* myositis (8). The diagnosis in our patient was settled using a muscular biopsy. A 10 – 15 day course of Albendazole or Mebendazole can help eradicate adult worms in the intestinal phase. There is no consensus on the pharmacologic management of parenteral illness. Steroids may be used in severe infections (9). Killing *Trichinella* larvae by cooking meat to temperatures of more than 55^{o}C (especially pertinent to prevent infections due to eating raw beef in Ethiopia) or freezing pork meat to temperatures of -15^{o}C or lower can help prevent infections (8).

Reports of Human Trichinellosis are scarce in Ethiopia. Human Trichinellosis has been reported from 4 sub-Saharan countries though high-risk activities like raw meat (bushpigs, warthogs, cattle) consumption are observed in many African communities (10). The same culinary practice is also the likely predisposition for our patient's presentation. Raw beef, in particular, is a commonly consumed dish among many societies in Ethiopia. His swollen body part is an anatomic location, which is frequently cited as affected by this tissue nematode. A high parasite burden may have contributed to the notably large muscular swelling.

In conclusion, Trichinellosis should be included in the work-up of children with dietary risk factors and chronic myositis. This case report highlights its presentation and management.

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Competing of interest

The authors report they have no conflicts of interest.

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