

“Case report:A case of Polyparasitism in a 10 year old child.”

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Abstract : Reported case is of multiple parasitic infections in a 10 year old male child from poor socio-economic background, presented with severe diarrhea and vomiting. Stool sample was sent for diagnosis of cholera, processed for microscopy and culture. In microscopic examination fertilized eggs of *Ascaris lumbricoides*, eggs of *Trichuris trichiura* and larva of *Strongyloides stercoralis* were found. In Hanging drop preparation darting motility was absent. In culture *V.cholerae* was not isolated. Patient responded well with albendazole and rehydration therapy. After three days sample was again collected for microscopy. It did not reveal any parasitic infestation. The present case describes a unique co-infection of three different nematodes in urban area. This case strongly emphasize on proper education of hygienic habits, sanitation, regular deworming exercise specially at primary school level.

Key word: Multiple parasitic infection, *Ascaris lumbricoides*, *Trichuris trichiura*, *Strongyloides stercoralis*

Background: Helminthic infection is highly prevalent throughout the developing countries. These infections are documented as serious health problem as they cause iron deficiency anaemia, growth retardation in children and other physical and mental health problems. (1). Multiple parasitic infection are closely associated with poor socio economical class, poor personal and environmental sanitation, overcrowding, limited access to clean water, tropical climates and low altitude. Intestinal parasitic infections are distributed throughout the world with high prevalence rate in many regions. Amoebiasis, ascariasis, trichuriasis and hookworm infection are among the ten most common infection in the world. (2). Geohelminths are the soil transmitted nematodes with a life cycle that involves no intermediate host or vectors.

They infect many animals and humans by faecal contamination of soil, food, and water. *S.stercoralis* infection is endemic in tropical countries. The infection remains asymptomatic in healthy individuals but can lead to hyper-infection syndrome in a compromised host. *A.lumbricoides*, though less harmful to the gastrointestinal mucosa, has migratory behavior and can cause obstruction in the gastrointestinal lumen.(3). Eventhough distributed worldwide and having high prevalence trichuriasis has been neglected more than most of the other intestinal parasitic disease. The Morbidity associated with trichuriasis is due to the worms' unique mode of attachment to the wall of the large intestine. The degree of morbidity is related to the intensity of the infection.

Case report:

A ten year old male child presented with complaints of increased frequency of stool (8-10times, watery, without blood, pus or worm), vomiting (3-4 times, non projectile, non bilious) and abdominal pain since one day. No history of fever, burning micturation, passage of worm or segment of worm in stool or vomitus.

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On examination, child was emaciated, weighing 25 kg, afebrile, dehydrated and had no cyanosis or icterus. Vitals were normal. Systemic examination, USG abdomen and chest X-ray were normal. Blood and stool samples were sent for laboratory examination. Laboratory result revealed: Hemoglobin- 15.4 g/dl. Total Leucocyte Count- 24,100/cumm. Total Differential Count : Polymorphs : 80 Lymphocytes : 17 Eosinophils: 2 Basophil :1. Liver & Renal function tests were within normal limit. According to the patient's clinical condition and severity of diarrhoea and dehydration, cause of gastroenteritis was suspected due to Cholera. The patient was kept on intravenous fluid. Stool sample was received in the laboratory for isolation of *Vibrio cholerae*. On gross examination stool was whitish in color and watery in consistency. Stool was processed for hanging drop preparation and darting motility of *Vibrio cholerae* was not seen after enrichment in alkaline peptone water. Eggs and larva of different helminthes were seen. Stool sample was further processed for routine microscopy by preparing saline and iodine preparation.

On microscopic examination fertilized eggs of *Ascaris lumbricoides*, eggs of *Trichuris trichiura* and motile larva of *Strongyloides stercoralis* are seen. (Fig. 1a & 1b). Fertilized eggs of *Ascaris lumbricoides* were oval, bile stained having outer albuminous coat with clear crescentic space between unsegmented ovum and inner layer at each pole. Eggs of *Trichuris trichiura* were barrel shaped, bile stained having mucous plug at both the poles and unsegmented ovum inside, which were abundant along with the eggs of *Ascaris lumbricoides*. Rhabditiform larvae of *Strongyloides stercoralis* having a short buccal capsule and slit at the tail end along with double bulb esophagus were also seen. Concentration techniques were performed. It revealed fertilized eggs of

Ascaris lumbricoides, eggs of *Trichuris trichiura* and larvae of *Strongyloides stercoralis*. Aerobic stool culture did not reveal any pathogenic bacterial growth. Subsequently albendazole 400mg was added in the treatment. After three days stool sample was processed for microscopy which did not revealed any egg or larvae. Patient was discharged after giving advise for personal and food hygiene.

Discussion:

Multiple parasitic infections have become common as a result of improvements in laboratory diagnosis and growing population of immunocompromised individuals. Mixed helminthic intestinal infections are frequent in tropics, most frequent being co-infection of *Ascaris lumbricoides*, *Trichuris trichiura* and *Ancylostoma duodenale*. Reported case is unique case of polyparasitism, which occurred in ten year old male child initially suspecting for cholera. The wide and unrestricted spread of the infection is attributed to failure to wear footwear to school, lack of functional toilet facilities, lack of safe water source, overcrowding, geophagia and presence of pools of water/sewage around houses.(4) Habit of the students to defecate in the bush leading to indiscriminate defecation in and around the schoolyard lead to contact of faeces and its accompanying microbial load including geohelminth eggs with soil. Infection may be direct or indirect through secondary sources as food and water. Geohelminth infections are mainly acquired through faeco-oral route. Etiology of multiple parasitic infections in reported case is due to poor personal hygiene and sanitation along with eating contaminated food and habit of barefoot walking. The case emphasizes the strong suspicion of multiple etiologies. Proper education on the hygienic habits and sanitation should be provided, regular

regular deworming exercise especially at primary school level coupled with legislation against indiscriminate disposal of faeces and its endorsement should be done.

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