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Case Report Open Access

Rare Parasitic Infection in a Child with Neuroblastoma

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Abstract

We report a two-year old boy with neuroblastoma, from immigrant parents, who during chemotherapy complained for abdominal pain that was initially misdiagnosed as neutropenic colitis. Repeated full blood counts revealed persistent peripheral eosinophilia and three stool specimens that were collected on consecutive days were found positive for Ascaris Lumbricoides. The child was treated with 2 courses of mebendazole. The possibility of a parasitic infection in an immunocompromised patient with abdominal pain should always be considered, regardless of the geographical location. High index of suspicion and early diagnosis can lead to effective treatment and favorable outcome.

Keywords: Ascaris Lumbricoides; Neutropenia; Child; Cancer; Helminthiasis

Introduction

Immuno compromised children are more susceptible to a variety of opportunistic infections, including those affecting the gastrointestinal tract. In the majority of cases, these gastrointestinal infections manifest as severe protracted diarrhea or chronic malabsorption, resulting in failure to thrive and malnutrition [1-3]. Parasites are important primary causes of gastrointestinal infections. Most of these infections are endemic in developing countries but are rare in Western countries. Nevertheless, with the growing number of immigrants, environmental, socio-economic, demographic and health-related behavior influences the transmission and distribution of these infections [1-3].

Case Report

A two-year old boy from immigrant parents was referred to our department for a malignangt tumor of the right adrenal gland. Tumor biopsy confirmed the diagnosis of neuroblastoma. The child was treated with the protocols Rapid COJEC and Topotecan-Cyclophosphamide, followed by tumor resection and partial right kidney resection. During chemotherapy, the child complained of abdominal pain that was initially misdiagnosed as neutropenic colitis. Repeated full blood counts revealed persistent peripheral eosinophilia. Stool cultures for common intestinal bacteria, as well as examination for Clostridium difficile and Cryptosporidium parvum, were negative. Abdominal X-ray imaging and ultrasound yielded normal findings. Three stool specimens that were collected on consecutive days were found positive for Ascaris Lumbricoides (Figure 1). The child was treated with 2 courses of mebendazole, at a dose of 100 mg twice daily for 3 days. At the last follow-up, 12 months later, the child remains in an excellent condition, free of disease or infection.

Figure 1: Ascaris Lumbricoides (female, 29 cm long) isolated from the patient's stools.

Discussion

Intestinal parasites that most frequently cause infections to humans are Enterobius vermicularis, the soil-transmitted helminthes such as Ascaris lumbricoides, Tricburis trichiura, bookworms and Strongyloides stercoralis and the protozoa Entamoeba histolytica and Giardia duodenalis [3,4]. Other protozoa such as Cryptosporidium sp. and Isospora sp. are becoming important causes of prolonged diarrhea in immunocompromised patients. Most of these infections are in poor and socioeconomicaly deprived communities in the tropics and subtropics and the majority of cases occur in children [3,4].

Immuno compromised patients carry an increased risk of serious complications associated with parasitic diseases. Particularly in children with malignant tumors, intestinal parasitic infections can run a severe course, occasionally with fatal outcomes [5]. Ascariasis is caused by Ascaris Lumbricoides, a soil-transmitted helminthe which enters the host by ingestion of eggs found in fecally contaminated material [6]. Ascariasis is endemic in several developing countries whereas in North America and Europe mostly affects immigrant and refugee communities [7,8]. Few and contradictory results have been reported on the prevalence of parasitic infections in children with cancer [5,9]. Symptomatic patients tend to have higher worm loads and may present with vague abdominal or respiratory tract symptoms. The worms may be passed into feces. Diagnosis of Ascaris Lumbricoides infection is best established by microscopic examination of fecal smears for characteristic ova; larvae may also be detected in the sputum [2]. If a

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worm is excreted, pathological examination yields a definitive diagnosis as was the case in our patient.

In conclusion, the possibility of a parasitic infection in an immunocompromised patient with abdominal pain should always be considered, regardless of the geographical location. High index of suspicion and early diagnosis can result in effective treatment and favorable outcomes in these high risk patients.

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