TOXOCARIASIS IN HUMANS. CLINICAL CASE REPORT

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Abstract

Toxocara canis and toxocara cati are the most ubiquitos gastrointestinal worms of domestic dogs and cats. They caused visceral larva migrans (VLM), covert toxocariasis and ocular larva migrans (OLM). Most cases of Toxocara infection are asymptomatic, especially in adults. When symptoms do occur, they are the result of migration of second stage Toxocara larvae through the body.

Patients can present with pallor, fatigue, weight loss, anorexia, fever, headache, rash, cough, asthma, chest tightness, increased irritability, abdominal pain, nausea, and vomiting.

We present the case of a six years old boy from rural area, whithout significant past medical history, who was admited in the Clinical Hospital of Infectious Diseases from Oradea in september 2009 with the suspicion of an acute viral hepatitis.

The symptoms for which he was admited, were: vomiting, nausea, fatigue, malaise and loss of apetite.

A hypereosinofilia may sugest parasitic infection, in this case Toxocara canis

The epidemiological history and a good anamnesis were very usefull for the positive diagnosis.

Key words: Toxocara canis, toxocariasis, acute viral hepatitis, albendazole

INTRODUCTION

Toxocariasis is an illness of humans caused by a larvae (immature worms) of either the dog roundworm (*Toxocara canis*) or the cat roundworm (*Toxocara cati*). Toxocariasis is often called visceral larva migrans (VLM).This helminthic infection is a major cause of blindness and may provoke rheumatic, neurologic, or asthmatic symptoms. Humans normally become infected by ingestion of embryonated eggs (each containing a fully developed larva, L2) from contaminated sources (soil, fresh or unwashed vegetables, or improperly cooked paratenic hosts. (Chiotan M., 1999, Couvreur I.,1993)

Toxocara canis and Toxocara cati are perhaps the most ubiquitous gastrointestinal worms (helminths) of domestic dogs and cats. There are many accidental or paratenic hosts including humans, birds, pigs, rodents, goats, monkeys, and rabbits.(Kleegman R.M. et all, 2007) There are three main syndromes: *visceral larva migrans* (VLM), which encompasses diseases associated with major organs; *covert toxocariasis*, which is a milder version of VLM; and *ocular larva migrans* (OLM), in which pathological effects on the host are restricted to the eye and the optic nerve. (Mandell G.L et all 2005, Marty Aileen, 2000)

Toxocara canis

Transmission of *Toxocara* to humans is usually through ingestion of infective eggs. These eggs are passed in cat or dog feces, but the defecation habits of dogs cause *T. canis* transmission to be more common than that of *T. cati*.(Montaya J.R., J.S. Remington, 1995). Both *Toxocara canis* and *Toxocara cati* eggs require a several week incubation period outside of a host before becoming infective, so fresh eggs cannot cause toxocariasis.

Many objects and surfaces can become contaminated with infectious *Toxocara* eggs. Flies that feed on feces can spread *Toxocara* eggs to surfaces or foods. Young children who put contaminated objects in their mouths or eat dirt (pica) are at risk of developing symptoms. Humans can also contaminate foods by not washing their hands before eating. Humans are not the only accidental hosts of *Toxocara*. Eating undercooked rabbit, chicken, or sheep can lead to infection; encysted larvae in the meat can become reactivated and migrate through a human host, causing toxocariasis. (Nemet Codruta, Emandi Mihaela 2003, Rebedea I. ,2000). Special attention should be paid to thoroughly cooking giblets and liver to avoid transmission.Physiological reactions to *Toxocara* infection depend on the host's immune response and the parasitic load.

Most cases of *Toxocara* infection are asymptomatic, especially in adults. When symptoms do occur, they are the result of migration of second stage *Toxocara* larvae through the body. (Schantz PM, 1994)

Covert toxocariasis is the least serious of the three syndromes and is believed to be due to chronic exposure. Signs and symptoms of covert toxocariasis are coughing, fever, abdominal pain, headaches, and changes in behavior and ability to sleep. Upon medical examination, wheezing, hepatomegaly, and lymphadenitis are often noted.High parasitic loads or repeated infection can lead to visceral larva migrans (VLM) VLM is

primarily diagnosed in young children, because they are more prone to exposure and ingestion of infective eggs. *Toxocara* infection commonly resolves itself within weeks, but chronic eosinophilia may result. In VLM, larvae migration incites inflammation of internal organs and sometimes the central nervous system. Symptoms depend on the organ(s) affected. Patients can present with pallor, fatigue, weight loss, anorexia, fever, headache, rash, cough, asthma, chest tightness, increased irritability, abdominal pain, nausea, and vomiting. Sometimes the subcutaneous migration tracks of the larvae can be seen. Patients are commonly diagnosed with pneumonia, bronchospasms, chronic pulmonary inflammation, hypereosinophilia, hepatomegaly, hypergammaglobulinaemia (IgM, IgG, and IgE classes), leucocytosis, and elevated anti-A and –B isohaemagglutinins. Severe cases have occurred in people who are hypersensitive to allergens; in rare cases, epilepsy, inflammation of the heart, pleural effusion, respiratory failure, and death have resulted from VLM. (Sternberg S., 1994)

MATERIAL AND METHOD

We present the case of a six years old boy from rural area, whithout significant past medical history, who was admited in the Clinical Hospital of Infectious Diseases from Oradea in september 2009 with the suspicion of an acute viral hepatitis.

The symptoms for which he was admited, were: vomiting, nausea, fatigue, malaise and loss of apetite.

RESULTS AND DISCUSION

During hospitalisation the 6 years old patient presented clinically: scleral icterus, hepathomegaly (1.5 cm) with all caracteristics of an acute hepatitis (smooth liver surface, elastic consistency, rounded lover margin and without tenderness) and spenomegaly.

In the third day of hospitalisation, the patient presented abdominal pain with diarrhea, free from mucus and blood. Theese were acompanied with feverish (37,4-37,5 ^{0}C), chills and pruritis.

The paraclinical examination evidenced:

-a moderate hepatocitolitic syndrome with ALT= 78 u/l and AST= 71 u/l

-a normal biliary excretory syndrome with BiT=0,9 mg%

-a normal hepatopriv syndrome with APTT=99%

-a normal imunologic syndrome for all the viruses -IgM VHA = (-)
-Ag HBs = (-)
-IgM HBc = (-)
-Ac VHC = (-)
-IgM CMV = (-)

-IgM EBA = (-)

We found in the hemoleucogram, a high number of the leucocytes (14.000/mm^3) and a high number of eozinofiles (15%) too.

The coprobacteriological and coproparasitological tests were negative.

After three days we repeated the paraclinical examination and we found a higher level of the leucocytes (18.000/m^3) and eosinofiles (31%). In the same day the value of ALT (TGP) was 81 u/l and the value of AST (TGO) was 80 u/l. The rests syndrome remain at those level. The coprobacteriological test and the coproparasitological test was negative again.

In the proteinelectrophorese we found a high level of alfa1 globulin and gama globulin.

Repeating the anamnesis, I learned that the patient had at home 2 dogs who play with him. We suspected an infection with Toxocara canis, thats why we made from the blood an immunologic test, the antibody against toxocara canis. To our surprise the test was positive (IgM Toxocara canis +).

The differential diagnosis in this case was made with fasciolla hepatica, trichinellosis and ascaridiasis.

The aetiological treatment in this case was made with Albendazole 200 mg, two times per day for tree weeks. Sympthomatic treatment was made with Silimarine (Lagosa) 150 mg/day, one month, for liver protection, with desloratadine (Aerius) 5 mg/day for seven days for the pruritis.

The paraclinical examination was repeated after tree weeks and we found again leucocytosis (16.000/mm^3) and eosinofilia (24%).

Only after six weeks, the level of leucocytes and eosinofils was normal.

CONCLUSIONS

The infection with Toxocara canis can be confused with the symptoms of an acute hepatitis.

The treatment was made with albendazole with good results.

A hypereosinofilia may sugest parasitic infection, in this case Toxocara canis

The epidemiological history and a good anamnesis were very usefull for the positive diagnosis.

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