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EC GASTROENTEROLOGY AND DIGESTIVE SYSTEM

Case Report

Esofagitis by Lumbricoid Ascaris

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Abstract

Ascaris lumbricoides (AL) is a nematode that parasitizes the human intestine and is the most prevalent infection around the world [1], approximately 1.27 billion people are infected [2].

The transmission of ascariasis is mainly carried out by the ingestion of water or food contaminated with eggs of Ascaris [3].

The majority of patients are asymptomatic, however, it can bring serious health consequences among which is described: (2) Pulmonary manifestations, intestinal obstruction (5 - 35%) [4], abdominal pain, malnutrition [5], pancreatitis due to obstruction of the bile duct. Ascaris esophagitis is a rare complication of ascariasis, and only 2 cases of this condition have been reported.

Keywords: *Ascaris Lumbricoides; Lumbricoid Ascaris; Esophagitis*

Introduction

The infection by ascaris lumbricoides, is prevalent worldwide, affecting 1.27 million people and 200,000 patients/year will present consequences that will threaten his life.

Ascaris infection is characterized by two distinct phases, both clinical and diagnostic; the first, migration from the larva to the lung and the second is the digestive affectation.

Adult ascaris is usually found in the Delgado intestine, especially in the jejunum and ileum, and can cause traumatic and toxic injuries, as well as its role as a vector of germs and its perforation power. It is infrequent that its affectation is esophageal.

In the life cycle of the helminth; In the third stage, the duodenum perforates, reaches the liver in 24 hours, and permanence in this organ for 3 to 5 days, migrates to the vena cava, heart and lung and is responsible for Loeffler's Sd.

After the pulmonary involvement, the parasite reaches 900 micrometers, migrates to the bronchi, which are then swallowed, and by traumatic or toxic action, produces irritation of the esophageal mucosa and high digestive bleeding.

The effects of ascaris are due to the host's own immune reactions; mechanical effects of the parasite on the esophageal mucosa and effects on the nutrition of the person. The helminth is a producer of a trypsin inhibitor, interfering in the metabolism of proteins, being responsible for caloric protein malnutrition, hypo albuminemia and the formation of edema.

The esophagitis due to lumbricoides is an infrequent affectation, being reported two cases in the medical literature. In both patients, the presence of the adult parasite in the esophagus was documented, documented by Endoscopy. In the present case, the presence of the parasite produced mucosal lesions and digestive bleeding, in addition to nutritional alterations such as hypoproteinemia and the subsequent formation of edema. After the treatment, the evolution of the patient was adequate with the consequent improvement of the nutritional status.

Clinical Case

Male patient of 34 years of age, drug user (marijuana and heroin) for 14 years, deprived of freedom for 5 years. He entered the Hospital due to a clinical picture of high digestive bleeding, characterized by hematemesis of 17 days of evolution, accompanied by asthenia, hyporexia, weight loss approximately 5 kilos.

At physical examination, hemodynamically stable, generalized pallor. Thorax mild rales on right lung base. Painful abdomen to the deep palpation of diffuse form, digital rectal examination, presence of melena. Limbs edemas +++ / +++.

Laboratory exams

	21/05	22/05	23/05	24/05	25/05
Leuco	14.200 cel/mm^3	13.010 cel/mm^3	12.000 cel/mm^3	9.020 cel/mm^3	19.930 cel/mm^3
Neut	83%	90.5%	89%	85%	95%
Eos	0.01%	0.00%	0.00%	0.01%	0.00%
Bas	0.03%	0.03%	0.02%	0.01%	0.2%
Hb	6.8 g/dl	8.6 g/dl	9.7 g/dl	8.6 g/dl	7.9 g/dl
Hcto	19.4%	21.8%	26.9%	24%	22.5%
Plaq	215.000	189	111	225	170
Crea	1,43 nng/dl	1,41 mg/dl		1.04 mg/dl	0.79 mg/dl
Albumina	1.5 g/dl				

Due to the high digestive bleeding, Digestive Endoscopy is performed.

Figure 1

Esophagus: Light, distensibility and preserved route. Mucosa of the entire esophagus is of diffuse nodular characteristics, friable to the passage of the endoscope, several small ulcers are observed, some covered with fibrin and others with bleeding in a small amount.

Biopsies of nodular lesions, edges and bottom of the most representative ulcers are performed.

Histopathology

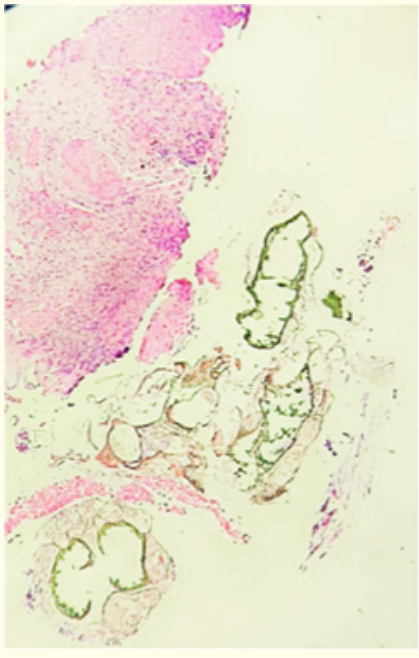

Figure 2

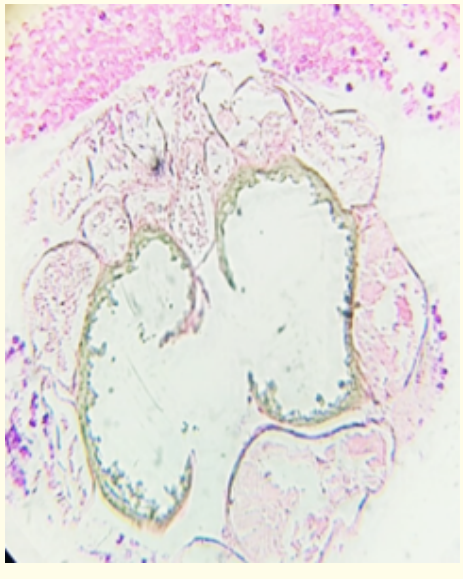

Figure 3

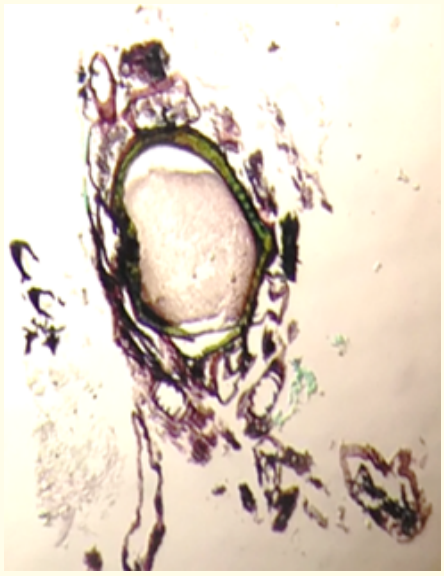

Figure 4: *PAS staining.*

Figures 2-4: *Esophageal mucosa with necrosis and mixed infiltrate.*

Helminth fragments

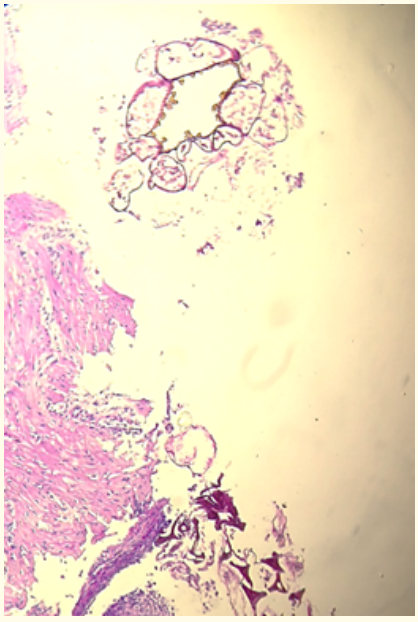

Figure 5: *Esophageal mucosa, fragments of Helminth.*

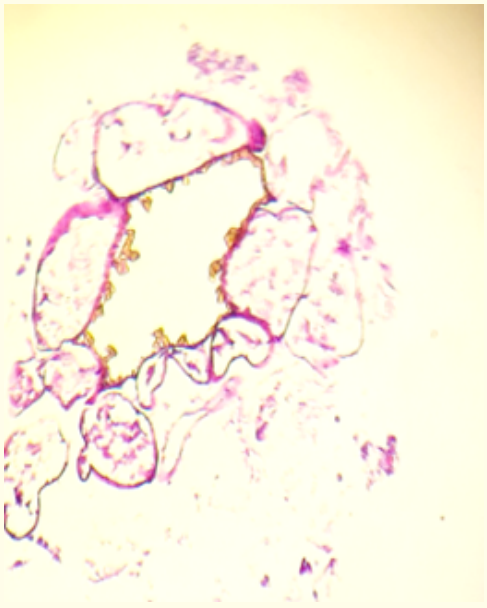

Figure 6: *Helminth fragments.*

Although the patient does not have significant respiratory manifestation, due to the presence of right basal rales, computed tomography was requested, which evidences the presence of right basal intertiter alveolus infiltrate, to be correlated with Lóeffler's syndrome.

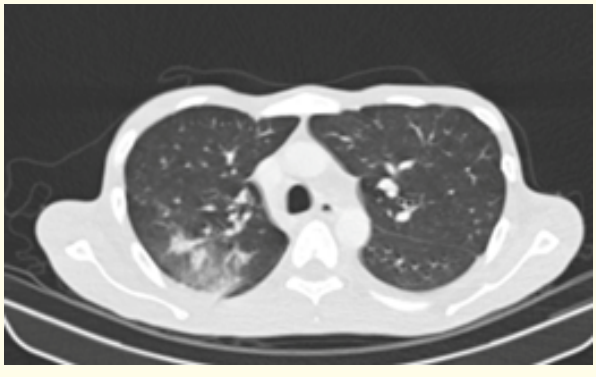

Figure 7

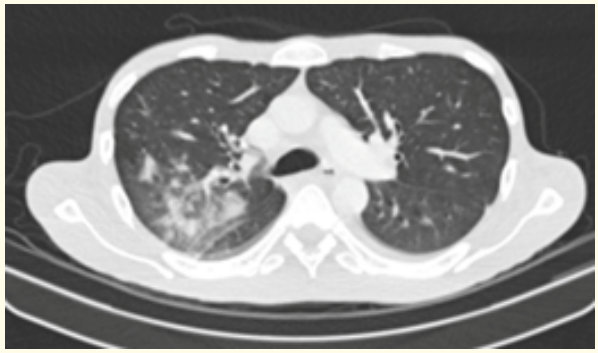

Figure 8

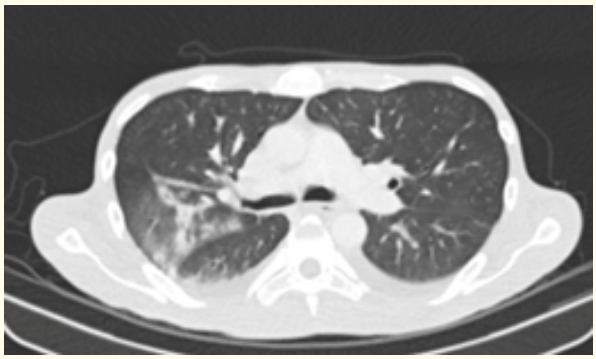

Figure 9

Figures 7-9: *Infiltrate right basal interstitial alveolus.*

Discussion

Intestinal infection by helminths is one of the main health problems in developing countries [6]. It is estimated that worldwide, approximately 1.27 billion people are infected [5]. At least 200,000 infected people/year develop serious life-threatening consequences, with 10,000 people per year dying [5].

In most countries of Central and South America, average infection rates rise to around 45% [7].

The average life of adult ascarids is 1 year, and then they are eliminated spontaneously, therefore there is the possibility of cure, as long as no reinfection occurs, since the possibility of reproduction within the intestine is null [7].

The ascaris lumbricoides has a great reproductive activity, it is estimated that the daily production of eggs is 200,000, which makes its presence in feces easy to observe [7].

The fertilized eggs, if they fall in humid earth and broken at 15º - 50º, in 2 to 8 weeks they form larvae inside and become infective [7].

The infecting eggs when swallowed, reach the duodenum, with an average size of 200 to 300 microns, perforate the intestinal wall and in 24 hours reach the liver, where they remain for 3 to 5 days [7]. They increase their size to 900 microns, and pass to the portal circulation, suprahepatic, vena cava, heart and finally to the lungs [7].

In the lung, they produce rupture of the capillaries and the alveolar wall, producing hemorrhage and inflammation, if it is massive, it gives rise to the Lóeffler syndrome [7]. The ascaris lumbricoides, is directed through the digestive tract to the trachea, larynx and is swallowed again until reaching the duodenum, where the formation of eggs occurs, thus closing the cycle [7].

The involvement of LA is in order of frequency: biliary tract, pulmonary parenchyma, intestinal obstruction, foreign body granulomas in hepatic parenchyma or peritineum, allergic reactions, eye involvement, central nervous system [7].

The nutritional symptoms are presented by anorexia, decreased metabolism of carbohydrates, fats and proteins [7]. Taking the patient to a state of hypoproteinemia, which would explain why our patient has hypoalbuminemia and lower limb edema.

Ascaris lumbricoides esophagitis is a rare entity, with 2 cases reported in the world literature.

The first case published in the journal Indian Pediatrics by Gandhi D., *et al*. in 1999 [8], reports the clinical case of a 15-year-old boy with recurrent abdominal pain and malaise, in a barium study of the esophagus. Bezoar, and prior to performing upper digestive endoscopy, the patient vomits 6 ascaris [8].

Figure 10: *Bezoar composed by the presence of ascaris [8].*

The other case published in WJG by Zheng P, et al, reports the case of a 70-year-old woman with a 4-year history of dysphagia; in upper endoscopy, the presence of ascaris lumbricoides in the esophagus is evident, where the mucosa of the organ is congestive, no biopsies were taken [9].

Figure 11: *High endoscopy, the presence of ascaris lumbricoides in esophagus is evidenced [9].*

Conclusions

In the present clinical case, the patient presents infestation by AL, eventually producing Lófffffler syndrome, evidenced by the infiltrate alveolus interstitial basal right presents in the Tomography.

Other effect of the AL is the nutritional effects, with the alteration of the metabolism of carbohydrates, fats and proteins, leading the patient to a state of hypoalbuminemia and the production of edemas, which were resolved with the clinical treatment.

Esophagitis can be explained by the mechanical effects that the parasite produces at the level of the esophageal mucosa.

The presence of LA in the esophageal wall could be explained by 2 hypotheses:

1. Within its life cycle, after the pulmonary involvement, the helminth reaches 900 microns, which after being swallowed, produce an inflammatory effect (mechanical mechanisms) at the esophageal mucosa level and the subsequent esophagitis [7].
2. The erratic migration of the AL, refers to the alteration of the life cycle of the helminth, in which the parasite can invade the bile duct, vesicle, kidney, appendix, tear duct, external auditory canal, bladder or be eliminated by mouth [7].

No evidence was found about the time of treatment in cases of infestation by ascaris lumbricoides, the recommendation of the CDC is to treat parasites between 1 - 3 days [11]. The patient, when deprived of liberty and not having adequate dietary hygienic measures, decided to administer albendazole 400 mg orally, daily for 5 days. He was hospitalized for approximately 15 days and was discharged in good general condition, his body weight increased by approximately 1.5 kilos, the edema of lower limbs progressively decreased and the albumin values increased gradually.

Bibliography

1. Leles D., *et al*. "Are Ascaris Lumbricoides and Ascaris suum a single species?" *Parasites and Vectors* 5 (2012): 42.

2. Blangero S VJJSea. "Localization of Multiple Quantitative Trait Loci Influencing Susceptibility to infection with Ascaris Lumbricoides". *Journal of Infection Disease* 197.1 (2008): 66-71.

3. Miller L., *et al*. "Ascariasis in human and pigs on small - scale farms, Maine, USA, 2010 – 2013". *Emerging Infectious Diseases* 21.2 (2015): 332-334.

4. MS Khuroo. "Ascariasis". *Gastroenterology Clinics of North America* 25.3 (1966): 553-577.

5. Silva N., *et al*. "Morbidity and mortality due to ascariasis: re estimation and sensitivity of global numbers at risk". *Tropical Medicine and International Health* 2.6 (1997): 519-528.

6. Jardim - Botelho A., *et al*. "Hookworm, ascaris lumbricoides infection and polyparasitism associated with poor cognitive performance in Brazilian schoolchildren". *Tropical Medicine and International Health* 13.8 (2008): 994-1004.

7. Botero D RM. "Parasitosis Humanas". Medellin: CIB (2012).

8. Gandhi D SNBB. "Radiological Demostration of Ascaris in Esophagus". *Indian Pediatrics* 36.12 (1999): 1270-1272.

9. Zheng P., *et al*. "Esophageal space - occupying lesion caused by Ascaris lumbricoides". *World Journal of Gastroenterology* 18.13 (2012): 1552-1554.

10. Pullan R., *et al*. "Global numbers of infection and disease burden of soil transmitted helminth infections in 2010". *Parasites and Vectors* 7 (2014): 37.

11. Centers for Disease Control and Prevention. Parasites – Ascariasis. Treatment (2010).

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