Esofagitis by Lumbricoid Ascaris

Barreno R1, Abarca P1*, Garcés T2, Basantes N1, Ayala V1, Guaman I1, Changoluisa E1, Peñaherrera D1, Montes M4, Ramos S3, Castillo C1, Ayala G1, Abarca J1, Calderon W1, Carrera E1, Del Salto C1 and Changoluisa E5

1Specialist in Internal Medicine, Gastroenterology, Central University of Ecuador, Eugenio Espejo Hospital, Ecuador
2Specialist in Pathological Anatomy, Central University of Ecuador, Eugenio Espejo Hospital, Ecuador
3Postgraduate Degree in Internal Medicine, Pontificia Universidad Católica, Eugenio Espejo Hospital, Ecuador
4General Medicine, ESPOCH University
5Medical Student, Universidad de las Americas UDLA, Ecuador

*Corresponding Author: Abarca P, Specialist in Internal Medicine, Gastroenterology, Central University of Ecuador, Eugenio Espejo Hospital, Ecuador.

Received: January 15, 2018; Published: March 20, 2018

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 affectionation.

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 affection 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 affection, 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**

<table>
<thead>
<tr>
<th></th>
<th>21/05</th>
<th>22/05</th>
<th>23/05</th>
<th>24/05</th>
<th>25/05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leuco</td>
<td>14200 cel/mm³</td>
<td>13010 cel/mm³</td>
<td>12000 cel/mm³</td>
<td>9020 cel/mm³</td>
<td>19930 cel/mm³</td>
</tr>
<tr>
<td>Neut</td>
<td>83%</td>
<td>90.5%</td>
<td>89%</td>
<td>85%</td>
<td>95%</td>
</tr>
<tr>
<td>Eos</td>
<td>0.01%</td>
<td>0.00%</td>
<td>0.00%</td>
<td>0.01%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Bas</td>
<td>0.03%</td>
<td>0.03%</td>
<td>0.02%</td>
<td>0.01%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Hb</td>
<td>6.8 g/dl</td>
<td>8.6 g/dl</td>
<td>9.7 g/dl</td>
<td>8.6 g/dl</td>
<td>7.9 g/dl</td>
</tr>
<tr>
<td>Hcto</td>
<td>19.4%</td>
<td>21.8%</td>
<td>26.9%</td>
<td>24%</td>
<td>22.5%</td>
</tr>
<tr>
<td>Plaq</td>
<td>215000</td>
<td>199</td>
<td>111</td>
<td>225</td>
<td>170</td>
</tr>
<tr>
<td>Crea</td>
<td>1.43 mg/dl</td>
<td>1.41 mg/dl</td>
<td>1.04 mg/dl</td>
<td>0.79 mg/dl</td>
<td></td>
</tr>
<tr>
<td>Albumina</td>
<td>1.5 g/dl</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

**Esofagitis by Lumbricoid Ascaris**

*Figure 4:* PAS staining.

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

**Helminth fragments**

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

---

**Citation:** Abarca P, *et al.* “Esofagitis by Lumbricoid Ascaris.” *EC Gastroenterology and Digestive System* 5.4 (2018): 269-277.
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 Löffler’s syndrome.

Figure 6: Helminth fragments.

Figure 7

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 15° - 50°, 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].

Esofagitis by Lumbricoid Ascaris

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 Loeffler 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 peritoneum, 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].](image)

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].

**Citation:** Abarca P, et al. “Esofagitis by Lumbricoid Ascaris”. EC Gastroenterology and Digestive System 5.4 (2018): 269-277.
Conclusions

In the present clinical case, the patient presents infestation by AL, eventually producing Löffler 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


Volume 5 Issue 4 April 2018
©All rights reserved by Abarca P., et al.