

Strongyloidiasis during Pregnancy: Case Report

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Abstract

Background: Strongyloidiasis is a parasitic infection caused by a helminth, endemic in South America, can occur in immunocompromised patients such as pregnancy, transplant recipients, chronic use of corticosteroids. It can be asymptomatic or present as disseminated disease affecting heart, brain, kidney.

Case: A 32-year-old pregnant woman from South America, with a history of malnutrition in her second pregnancy at 28 weeks of gestation, presented digestive and pulmonary manifestations, standard treatment was established with a fatal maternal outcome.

Conclusion: This particular case is a challenge for the etiological diagnosis of malnutrition and the need for clinical suspicion for early diagnosis and specific management of the disease.

Keywords: *Strongyloides stercoralis*; Strongyloidiasis; Pregnancy

Introduction

Strongyloidiasis is an infection caused by the helminth *Strongyloides stercoralis*, a parasite endemic to tropical and subtropical areas [1], inhabiting precarious areas of tropical and subtropical regions [2]. There are other predisposing factors of the disease, such as pregnancy and malnutrition [3]. It should be suspected in any patient coming from an endemic area because clinical suspicion will bring us closer to the diagnosis, diagnostic tests are not fully validated [3].

Clinical Case

A 32-year-old Ecuadorian patient, pregnant at 28 weeks of gestation, with a clinical picture of four months of evolution characterized by nausea, asthenia, progressive weight loss, in recent days she presented with cramping abdominal pain followed by liquid stools, so she went to the emergency room. Without pathological history, with genetic load of diabetes mellitus, she worked as a housewife. She denies consumption of toxic substances.

She was admitted to the hospital because of severe malnutrition, with a body mass index of 16.98. Laboratory results Leukocytes 9.16, neutrophils 6.170, lymphocytes 2.360, eosinophils 0.240. Hemoglobin 12.4 gr, platelets 468,000. Abdominal ultrasound without report of any alteration.

The patient's clinical condition worsened, presenting fever, purulent cough, vomiting, tachycardia, tachypnea. The culture reports were negative, a respiratory panel reported rhinovirus. In the upper endoscopy, signs of distal esophagitis and duodenitis were reported. For fetal indication, they decided to terminate the pregnancy. Pneumonia progresses, requiring invasive mechanical ventilation. Intercurred with adult respiratory distress syndrome.

Duodenal mucosa biopsy report: *Strongyloides stercoralis* duodenitis, with extensive colonization of the crypts and lamina propria. Ivermectin treatment was started without favorable response.

Results and Discussion

According to data from the World Health Organization, approximately 1.5 billion people are with parasitic infections, with a mortality rate of 155,000 cases annually [4]. Strongyloidiasis is a disease caused by a nematode of the genus *Strongyloides*, within this genus there may be 40 species, the best known being *Strongyloides stercoralis*, *Strongyloides stercoralis* is one of the *Strongyloides* species that causes strongyloidiasis [2].

It affects 614 million of the world's population, affecting those who do not have adequate sanitary conditions [5]. There are situations that predispose to parasitosis such as pregnancy, infection by human immunodeficiency virus, human T-lymphotropic virus 1, alcohol and malnutrition [6]. A seroprevalence study of pregnant women living in Peru revealed that 1 in 10 was positive for strongyloidiasis [1].

Its life cycle is complex, having two cycles: free and parasitic. In the parasitic cycle, the larvae penetrate the skin that is in contact with the soil, migrate through the bloodstream or another route such as connective tissue and can settle in the lungs and small intestine to develop into adult female parasites that generate eggs that give rise to rhabditiform larvae that become filariform and could cause autoinfection when they penetrate the perianal skin or intestinal mucosa [2].

It usually presents asymptotically or even has a disseminated presentation. It is still unknown if pregnancy per se is a trigger due to the immunological contribution provided to the mother in this case by immunosuppression [5]. There are three clinical presentations: Acute due to recent exposure in an endemic area, it may be asymptomatic "Larva currens" which is the serpiginous rash in the affected area, anorexia, abdominal pain, constipation or diarrhea. Chronic is asymptomatic may present with nausea, vomiting, abdominal pain, constipation or diarrhea, bronchospasm, anal itching, urticaria. It is very rare, but may present as arthritis, cardiac arrhythmias, asthma, ileus, nephrotic syndrome. Hyper infection: It is not typical of immunocompromised patients; there are records of cases in immunocompetent patients [6]. Respiratory symptoms are usually the main presentation of the disease [3]. Cardiopulmonary manifestations may present as cough, chest pain, bronchospasm and dyspnea with pulmonary radiographs where they could be normal or where lobar infiltrates, pulmonary opacities, cavitations are evidenced. Digestive manifestations such as nausea, vomiting, abdominal pain, diarrhea or constipation, ileus, anal pruritus [6]. Neurological manifestations such as headache, nuchal rigidity, altered state of consciousness, convulsions [7]. Disseminated infection is the migration of the larvae beyond the organs that make up the life cycle of the parasite, such as liver, brain, heart, urinary tract [5].

The standard diagnostic method for strongyloidiasis in pregnant women is still questionable. Most studies used direct stool microscopy and the sensitivity of larva visualization is 21%. Due to the irregular amount of larvae in stool, sampling should be repeated up to 7 times, the opposite is true in patients with hyper infection [5]. Stool cultures are time-consuming, expensive and not widely available [5]. Serological tests have a negative predictive value ranging from 72 - 100% [6]. Duodenal biopsy of patients with strongyloidiasis was 71.4% positive [3].

According to the World Health Organization, the gold standard treatment is oral ivermectin [3]. There are no clear data on the safety of the use of ivermectin in pregnancy, even though it is class C according to the Food and Drug Administration (FDA) [5]. 200 ug/kg/day for two days is recommended for uncomplicated strongyloidiasis [3]. 200 ug/kg/day is indicated for complicated strongyloidiasis until resolution of clinical manifestations and absence of larvae in 3 consecutive samples or negative stool culture for two weeks. Parenteral ivermectin is not authorized for human use, only for veterinary use [8].

Mortality of patients with hyper infection was 60%, despite treatment with ivermectin was 47% [3]. There are case reports of perinatal death due to strongyloidiasis, low birth weight, premature delivery [5].

Conclusion

In the maternal population, nutritional risk assessment is essential as prenatal consultation, knowing the deficits in developing countries, problems like this are so frequent that looking for the cause of malnutrition could change the prognosis of each patient.

Conflict of Interest

Declare any conflict of interest exists.

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