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Case Report

Case Report: Infection by *Strongyloides stercoralis* Associated with Empty Sella Syndrome

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ABSTRACT

Presenting the clinical case of a 76 years old woman diagnosed with: diabetes, hyperthyroidsm, arterial hypertension, obesity, empty sella syndrome and panhypopituitarism; which led to multiple treatments with prednisone among them. Shortly after beginning of the treatment with steroids a significant elevation of eosinophils (hypereosinophilic syndrome) was detected. After not having a favorable response to the treatment, the patient was transferred to the Faculty of Medicine of UNAM. Her laboratory exams showed a great amount of rhabditiform larvae revealed in a standard stool examination, this finding led to a treatment scheme with ivermectin. In the subsequent laboratory results the plasmatic levels of eosinophils were reported normal and the stool examination results were negative, therefore the patient is discharged after several control exams. A cause-effect relationship is established between the inmunosupresion caused from the treatment with steroids in addition to the risks factors and the poor cleaning habits, which caused the hyperinfection syndrome by *Strongyloides stercoralis*.

Keywords: Hypereosinophilic syndrome; Empty sella syndrome; *S. stercoralis*

INTRODUCTION

When in radiological tests, an invagination of the subarachnoid spaces is found inside the turkish seat, filling it with total or partial cerebrospinal fluid, Empty Sella Syndrome (ESS) must be used as definition; which implies free communication between the intrasellar fluid and that of the suprasellar cistern. ESS is predominant in women, generally in adult patients (40 to 60 years old), typically in obese, hypertensive and multiparous women, in 16.6% [1]. Among the endocrinological alterations that ESS can present is panhypopituitarism [2], this clinical picture can be solved by administrating the deficits, including steroids [3]. The chronic use of steroids generates a state of immunosuppression in patients, which makes them more prone to infections by opportunistic microorganisms [4]. The parasite *S. stercoralis*, is an opportunistic geohelminth, favoring its presence, poor hygienic-dietary habits and immunosuppression [5]. It is estimated that there are 50 to 100 million people infected worldwide by this parasite, with higher prevalence in tropical and subtropical regions, mainly in Latin America and the Caribbean, including Mexico [6]. Given its characteristics of being able to present internal and external autoinfection, it can remain indefinitely in the body, causing hyperinfections that they put life at risk [5]. This nematode is located in the human small intestine. It has two types of larvae, filariform larvae and rhabditiform larvae, the first are the infecting forms, they measure around 600 µm in length and their caudal end presents a bifurcation that allows us to differentiate them; whereas the rhabditiform larvae are the diagnostic forms, they measure 300 µm in length, they have a large esophagus in the anterior portion and a bulb in the posterior part [5]. Particularly, the administration of systemic corticosteroids precipitates the molt of intestinal rhabditiform larvae to invasive filariform larvae [7]. The clinical picture can be diverse, ranging from asymptomatic infections, mild diseases or even chronic parasitosis. Infections in immunocompromised patients present greater severity and tend to chronicity; they are even located very frequently extraintestinally in the form of larva migrans (larva currens), causing dissemination to different organs [5]. Among the risk factors for this type of presentation is treatment with steroids and other immunosuppressive drugs [8]. Clinical manifestations can be: cramping abdominal pain in epigastrium and mesograstria, nausea, vomiting and diarrhea. These clinical manifestations are accompanied by significant eosinophili.

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CASE STUDY

A 76-year-old female, originally from Mérida Yucatán, Mexico, who has lived in Texcoco, State of Mexico, for 20 years. Among the important antecedents, the patient is allergic to nifedipine and has been suffering from uncontrolled hypertension for 40 years due to poor adherence to treatment, grade II obesity, dyslipidemia, hyperuricemia and left renal cyst. Moreover, facts to outline of her clinical history are overcrowding, dirt floor in her dwelling, use of latrine, lack of potable water, home near to a sewage water, cohabitation with animals (dogs, pigs, roosters), use of open shoes. Four years ago she was hospitalized for presenting behavioral alterations consistent with hyperactive delirium. In the laboratory analyzes, the patient is identified as having: hyponatremia, hyperkalemia, primary hyperthyroidism, anti-peroxidase positive antibodies and adrenal insufficiency. Treatment was started with tiamazole (5 mg every 8 hours) and diagnostic protocol was continued CAT scan; in these imaging studies a diagnosis of Empty Sella Syndrome (ESS) was made; the patient was discharged of the Internal Medicine Service with reference to the services of Neurology and Endocrinology; cortisol, Adrenocorticotropic Hormone (ACTH) and Prolactin (PRL) were requested. Two months later, endocrinology reports that the patient was suffering from subclinical hypothyroidism, secondary adrenal insufficiency, and panhypopituitarism, which is why the dose of thiamazole was adjusted and starts treatment with prednisone. Derived from the aforementioned diagnoses, the patient is subjected to different laboratory studies, among which the hematic biometry (Bh) that presents important eosinophilia stands out. This was initially associated with the initiation of treatment with thiamazole, as it is a known adverse effect of said medication; ten months after concluding the treatment with thiamazole, the predominance of eosinophils continues to be observed (Figure 1), which is why it is sent to the Faculty of Medicine, UNAM, where an integral study is carried out. The anamnesis is asymptomatic, serial Coproparasitoscopic Examinations (CPS) of 3 coprological samples are performed, with sedimentation technique, flotation (Faust) and direct examination.

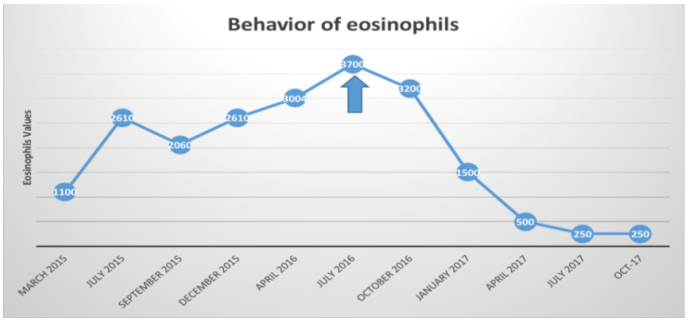

Figure 1: Behavior of eosinophils from the first evaluation of the patient. The arrow indicates the day on which treatment with ivermectin was started in July 2016, after which a significant decrease was observed, until reaching normal levels.

RESULTS

In the CPS a large amount of rhabditiform larvae of *S. stercoralis* were observed (Figure 2). Subsequently the diagnosis is corroborated by Baermann's examination and sedimentation tests in cups (Figure 3) [9,10].

Figure 2: Distal end of 40x rhabditiform larvae, CPS, Faust technique.

Figure 3: Stool culture (sedimentation cups in a water bath).

Once the diagnosis is confirmed by both procedures, the patient is administered pharmacological treatment, as well as preventive measures for their prompt recovery. It was managed with ivermectin 200 mcg/day/orally for two days, a dose that is repeated after three months because it remains positive despite the low persistence of eosinophils. The laboratory analysis of post-treatment follow-up consisted of a CPS study 15 days after the first dose of treatment and a blood count per month. From the first dose of ivermectin, a decrease in the percentage of eosinophils was observed until normal values are reached (1% to 4%); thus, negative CPS tests were obtained in the following three months, which is why the patient is discharged, after 6 months of control.

DISCUSSION

Geohelminthiasis in our environment, constitute one of the main reasons for medical consultation. Strongyloidosis prevails especially in immunosuppressed patients (use of steroids and other immunosuppressive drugs, HIV/AIDS).

In this case infection was manifested in a patient with empty sella syndrome, associated with panhypopituitarism who received treatment with prednisone. It is well known that steroid treatment generates a state of secondary immunosuppression that makes an individual more susceptible to opportunistic infections. We consider this case of medical importance due to the fact that, in our and other entities, there are important morbidity indexes owing to empty sella syndrome and panhypopituitarism that forces patients to receive treatment with steroids, causing susceptibility to some parasites, among them *S. stercoralis*. As a result, in patients with precarious hygienic habits, coupled with empty sella syndrome; it is advisable to closely monitor the response to the treatment to which they are subject. The above, in correspondence to the risk factors already mentioned and in conjunction with the administration of corticosteroids, cause immunosuppression in patients, leading to greater susceptibility to parasitic infections (*S. stercoralis*). It is expected that the information provided will allow the risk factors

to be assessed and analyzed carefully, because if they do not, the chances of the patient improving their eosinophil levels is difficult and, consequently, they are more likely to present complications that could be fatal.

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