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Case Report

STRANGE EVOLUTION IN A CHILD WITH PLURIMICROBIAL INFECTION: CASE PRESENTATION

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A R T I C L E I N F O

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A B S T R A C T

Parasitic infections are still prevalent in many areas, especially in developing countries. Ascariasis is the second most common parasitic infection worldwide. They can mimic different diseases and can remain undiagnosed or misdiagnosed. (1) Extraintestinal manifestation of ascariasis is pulmonary ascariasis which manifests as eosinophils accumulation in the lung, known as Löffler syndrome.

The patient was a 3 years old boy admitted to our pediatric department. He experienced fever, productive cough, dyspnea and loss of appetite two days prior to the admittance. Clinical examination at the admission pointed out average general condition, cyanosis, generalized pallor, respiratory distress, subcostal and intercostals retractions, prolonged expiration and bilateral crackling rales, signs of mild dehydration.

Initial findings: high immunoglobulin E level, negative oropharyngeal cultures, nasal cultures- Staphilococcus aureus (carrier). X-ray examination was consistent with interstitial pneumonia and pneumonic infiltrations.

In evolution, the patient became unable to walk or eat, was extremely torpid, asthenic and had a decreased urine output. During the hospitalization period the patient presented watery stools with massive elimination of Ascaris lumbricoides. Coprological examination revealed the presence of Giardia lamblia cysts, Rotavirus and, Candida. Antiparasitic treatment along with antifungal treatment was initiated.

INTRODUCTION

Parasitic infections are still prevalent in many areas, especially developing countries. Ascariasis is the second most common parasitic infection worldwide. According to CDC up to 1.2 billion people are infested with Ascaris lumbricoides. They can mimic different diseases and can remain undiagnosed or misdiagnosed.(1)

Extraintestinal manifestation of ascariasis is pulmonary ascariasis which manifests as eosinophils accumulation in the lung, known as Löffler syndrome. After ingestion of Ascaris lumbricoides eggs, larvae penetrate the mesenteric lymphatics and venules and enter the pulmonary circulation.(2)

Acar *et al*. suggested that "Loeffler's syndrome must be considered early in the differential diagnosis for community acquired pneumonia when peripheric eosinophilia is seen in patients if they live in an endemic area for parasitic disease" (3).

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Case report

Our patient was a 3 years old boy admitted to our pediatric department. Two days before the boy presented fever (38.3 Celsius degrees), productive cough, dyspnea and loss of appetite which justified the anti-inflammatory treatment.

Clinical examination at the admission pointed out average general condition, pale, encircled appearance, cyanosis, generalized pallor, nasal obstruction, respiratory distress, subcostal and intercostal rectractions, prolonged expiration and bilateral crackling rales, signs ofmild dehydration. The initial evaluation concluded that the most probable diagnosis was infectious pneumonia complicated with respiratory distress. The laboratory findings revealed: total leukocyte count 6.98 $x10^3/\mu l$, neutrophils $4.83x10^3/\mu l$, lymphocytes $1.57x10^3/\mu l$, monocytes 0.57 $x10^3/\mu l$, eosinophils $1,0x10^3/\mu l$, basophils $0.1x10^3/\mu l$, hemoglobin 12,4 g/dl, Hct 34 %, MCV 72.5 fl, MCH 26.4 pg, MCHC 36,5 g/dl, platelets 339.000x 10^3 /µl, "C" reactive protein 24 mg/l (mild elevation), alanine aminotransferase (ALT) 9 U/l, aspartate aminotransferase (AST) 26 U/l, creatinine 0,39 mg/dl, total serum IgE 32 UI/ml (mild elevation), oropharyngeal cultures- negative, nasal cultures- Staphilococcus aureus (carrier). Thoracic radiological examination was consistent with interstitial pneumonia and pneumonic infiltrations.

The evolution was good for the first 4 days, then the patient became unable to walk or eat, was extremely torpid and asthenic. Clinical examination did not reveal any other objective modifications. The biological reevaluation of the child was performed: total leukocyte count 14.76 $x10^3$/µl, neutrophils 11.58 $x10^3$/µl, lymphocytes 2.16 $x10^3$/µl, monocytes 1.0 $x10^3$/µl, eosinophils 0.1 $x10^3$/µl, basophils 0.1 $x10^3$/µl, hemoglobin 12,8 g/dl, Hct 36,4 %, MCV 73.4 fl, MCH 25.8 pg, MCHC 35,2 g/dl , platelets 241000/ µl, "C" reactive protein 38 mg/l, procalcitonin <0.5 mg/dl, alanine aminotransferase 60 U/l, aspartate aminotransferase 89 U/l, urine, blood cultures negative. The bacterial superinfection was suspected and the intravenous antibiotics (Cefuroxime), fluid therapy and hepatoprotectives were added, followed by a slightly favorable evolutionfor next 3 days. Afterwards, the patient experienced urinary dysfunction and the ultrasound performed revealed bladder globus. A urinary catheter was placed to ensure adequate urinary evacuation. Later that day, watery stools were associated. Stool samples were collected for viral, bacterial, fungus and parasitis examination. The next day, watery stools were followed, by a massive elimination of Ascaris lumbricoides. Coprological examination revealed The presence of Giardia lamblia cysts, Rotavirus and, Candida. Antiparasitic treatment (Albendazol 400 mg once a day, 5 days) along with antifungal (Stamicin 50.000UI/kgc/day) treatment was initiated In the light of these findings the final diagnosis was reviewed, the most probable diagnosis in this case being Loeffler syndrome due toparasitic infection with Ascaris lumbricoides. The patient had rapidly favorable evolution and was released after 18 days of hospitalization.

DISCUSSION

Löffler syndrome was first described by Löffler in 1932. It is defined as a transient respiratory illness, due to eosinophils infiltratates which accompany many parasitic infections and drugs. It is a pulmonary eosinophilia associated with blood eosinophilia and radiographic shadowing. The most common cause is infestation with Ascaris lumbricoides, but there is a large number of parasitic infestations that can generate this particular type of illness, such as: Necator americanum,, Strongyloides stercoralis, Ancylostoma braziliense, caninum and duodenale, Toxocara canis, cati. (4,5,6,7)

The diagnosis is often difficult, mainly because usually there are no abnormalities found on physical examination, but occasionally, crackles or wheezes may be heard on lung auscultation.(7)

Laboratoy and imagistic findings consist in blood eosinophilia, usually lower than 20%, but procentage can rise up to 40 %, high levels of total serum immunoglobulin E, transient pulmonary infiltrates and parasites in the feces. The lung aspirates, sputum and bronchoalveolar lavage liquid are helpful, but sometimes difficult to obtain, especially for pediatric patient. (7)

The plurimicobial association between different species of intestinal pathogens: Ascaris lumbricoides, Giardia lamblia, Rotavirus and Candida made the case even more challenging.

CONCLUSION

Loffler syndrome has to be considered in cases of respiratory illness not responding to standard treatment. Eosinophilia accompanied or not by high levels of immunoglobulin E, transient pulmonary infiltrates can point the diagnosis toward Loffler syndrome and make the right treatment possible.

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