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CASE REPORT

PORTRAYED: *Urbanorum spp*: first case report in pediatrics in Brazil

Allydson Döhl Simes¹, Vanessa Borges Platt²

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Abstract

This is the first case report of *Urbanorum spp*. in a child in Brazil, a rare parasite, not much described in the literature. It was found in a parasitological examination of the feces, performed by the Ritchie/Hoffmann method requested in the laboratory routine exam of a 2-years old male child, in an outpatient care ward in 2018; treated with Albendazol 400mg for 5 days. This study reveals the importance of further investigations on the parasite just described in the Brazilian literature, in order to study its possible pathogenicity and consequent eradication by drug treatment.

¹ Federal University of Santa Catarina, Medical School - Florianópolis - Santa Catarina - Brazil.

² Polydoro Ernani de São Thiago University Hospital, Pediatrics - Florianópolis - Santa Catarina - Brazil.

Correspondence to:

Allydson Döhl Simes.

Universidade Federal de Santa Catarina. Rua R. Eng. Agrônomo Andrei Cristian Ferreira, s/n - Trindade, Florianópolis, SC, Brazil. CEP: 88040-900.

E-mail: allydson1@gmail.com



INTRODUCTION

The first case of infection caused by the *Urbanorum* spp. parasite was described in 1991. However, the first scientific record occurred in 1994¹. The parasite has a rounded structure with several pseudopods and a yellowish coloration when fixed with Lugol. It is characterized by the presence of an exoskeleton with double membrane and pores through which the hyaline structures that aid its locomotion exit^{2,3}.

CASE REPORT

Two-year-old male patient brought by the father in May 2018 to be followed-up in pediatrics at the Pediatrics outpatient clinic in a University Hospital in Brazil.

Born with 40 weeks and three days by vaginal delivery at the maternity ward, with a birth weight of 3.775g, length of 51.5 centimeters and APGAR of 9/9. Screening tests performed in the delivery room were Ortolani, red reflex, hearing screening, and oximetry, with no alterations. The child received exclusive breastfeeding up to 6 months and supplementary breastfeeding until up to 1 year of age. Current vaccination schedule complied with the Brazilian Ministry of Health's vaccination schedule.

The mother is a 32-year-old from Colombia, and the father is a 35-year-old Brazilian. The child has a 3-year-old Brazilian sister. The family lives in a wooden home, with drinking water and sewerage. Parents are unemployed and rely on a social welfare program cash benefit called "Bolsa Família" (Family Grant) provided by the Federal Government. No known disease history in the family has been reported.

Childcare last visit was performed in January 2018, when the following routine laboratory exams were requested: complete blood count, partial urine and parasitological stool exam. The patient returned after four months to show the results. During this visit, he was accompanied by his father, who reported no complaints and no alterations in bowel movements since the patient's last visit.

The physical examination revealed that the patient was in good general condition, anicteric, NON-cyanotic, normal color, hydrated, afebrile and eupneic. There was no palpable lymphadenopathy, and cardiac and pulmonary auscultation did not show any alterations. The abdominal examination showed flat, depressible abdomen with hydro-aerial noises, and no pain upon palpation, no signs of peritonitis and no masses or visceromegaly were found. Anthropometry: Weight of 13.8kg (Z score: 0), height of 90cm (Z score: 0), BMI of 16.8, and head circumference of 48 cm.

Complementary exams performed at the clinical laboratory of the University Hospital: Blood count (05/15/18): Hemoglobin of 11.4g/dl, Hematocrit 34.4%, MCV (mean corpuscular volume) 75fl; MCH (mean corpuscular hemoglobin) 24.8pg, MCHC (mean corpuscular hemoglobin concentration) 33.3g/dl, RDW 14.4, Polychromasia + Leukocytes: 10.380p/mm3 (Segmented 28.3%, lymphocytes 60.2%, monocytes

7.4%, eosinophils 1.6%, basophils 0.5%), Platelets: 285,000. Partial urine (05/15/18): no significant alterations. The result of parasitological feces test performed by the Ritchie/Hoffmann method (05/15/18) was positive for *Urbanorum* spp.

Fecal samples were processed according to the Ritchie/Hoffmann protocol, stained with Lugol's and observed under light microscopy. The analyzed samples contained a rounded shape structure and several filaments, like pseudopodia (Figure 1).

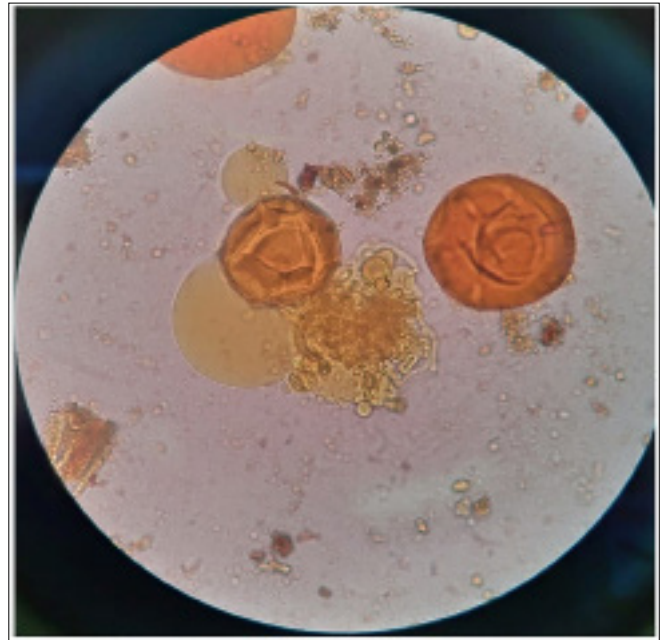


Figure 1. *Urbanorum* spp. viewed at the University Hospital in 2018.

The patient described was an infant with no prior comorbidities, with adequate neuropsychomotor growth and development for age, with social vulnerability, with no alterations in his physical exams and with a verminosis detected in a parasitological stool test.

He was prescribed Albendazole 400mg/10ml/day for five days and has yet to return to the outpatient clinic for medical follow-up.

DISCUSSION

Few studies are found on *Urbanorum* spp., and the first one was published in 1994 in Colombia. In 1991, 283 stool samples were analyzed, of which 16.6% contained this protozoan. Two years later, new analyses were performed with 143 samples, of which approximately 14.0% contained *Urbanorum* spp.¹. The researcher who published the first study conducted another study in the 1997-1998 period, reporting an incidence of 10.0% in 14,000 fecal samples¹. In 2006, another study carried out in Colombia showed the same incidence of 10.0% in the fecal samples studied².

The study conducted in Peru in 2016 showed, through the Graham and Hoffman, Pons and Janer test (HPJ) that 20.8% of a total of 96 children aged 3-14 years were infected by the *Urbanorum spp.*⁴ Health, environmental, economic and socio-cultural conditions were considered in one of the studies, which showed that these factors directly affect the epidemiology of this parasite⁴.

The first case of *Urbanorum spp.* was identified in the state of Maranhão, Brazil, in April of 2018 in an adult female patient with a history of diarrhea. The parasite was identified in the parasitological examination of the feces, processed as per the HPJ or the Lutz protocol, which was requested for diagnostic elucidation⁵. This study assisted in the diagnosis and treatment performed in the case reported in this study.

The parasite can be found in several different environments, and children are the most common host⁴. However, this is the first time that the parasite is described in infants in Brazil, denoting the medical relevance of more extensive studies. Therefore, the first reports of *Urbanorum spp.* in Brazil are recent. This study reports the first case of the parasite in an asymptomatic child, found during a routine childcare examination. It reveals the importance of further investigations on the parasite, recently described in the Brazilian literature, to

analyze its possible pathogenicity and treatment. The identification of the *Urbanorum spp.* also reopens the discussion on the prevention of parasitic diseases, the effectiveness of the efforts to improve basic sanitation, proper water treatment, the sewage system and the teaching of hygiene habits for the general population.

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