

Case Report

***Endolimax nana* and urticaria**

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Abstract

Endolimax nana is a commensal protozoan of the colon. We report a case of chronic urticaria associated with *E. nana* in a 34-year-old Italian woman. The patient suffered from abdominal pain, diarrhoea and weight loss. The disease appeared after a trip to Vietnam. Laboratory examinations showed mild blood eosinophilia. Three coproparasitological examinations were positive for cysts of *E. nana*. The patient was successfully treated with two courses of metronidazole (2 g/day for 10 days each). No antihistamines were used. Three coproparasitological examinations, carried out at the end of the therapy, were negative. Follow up (six months) was negative. *E. nana* can be responsible for very rare cases of abdominal pain, diarrhoea, polyarthritis and urticaria.

Key words: abdominal pain; chronic urticarial; diarrhoea; *Endolimax nana*; metronidazole; weight loss.

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Introduction

E. nana was first described in 1917 by Wenyon and O'Connor. In humans, *E. nana* is a commensal protozoan of the colon and appendix. Trophozoites are 8-30 µM long and feed exclusively on bacteria. They can survive in stool for one day at room temperature. The nucleus is spherical and vesicular, with a size of 2-2.5 µM. When mature, cysts of *E. nana* are oval and very small. The cyst wall is colorless and smooth. In the cytoplasm, no mitochondria, Golgi apparatus, rough endoplasmic reticulum, centrioles or microtubules are present. The cyst usually contains 4-8 nuclei. The cysts are excreted in faeces and can survive for up to two weeks at room temperature and for up to two months at lower temperatures [1]. *Endolimax* is transmitted through fecal-oral contamination of food and water [1,2] or by contact with infected animals [2]. Although *E. nana* is considered a non-pathogenic protozoan, it caused rare cases of abdominal pain, diarrhoea [2-9], polyarthritis [9,10] and urticaria [11]. We describe a case of chronic urticaria associated with *E. nana*.

Case Report

A 34-year-old Italian woman was admitted to our Dermatology Unit with a diagnosis of chronic urticaria of 4-month duration. The patient stated that the first wheals appeared just a few days after her return from a trip to Vietnam. The patient also declared occasional

abdominal pain, diarrhoea and weight loss (approximately 4 kg) in the last four months. The patient was unsuccessfully treated at other centers with cetirizine and bilastine. Dermatological examination showed numerous erythematous wheals, of different morphology and size, located mainly on the limbs. Laboratory examinations revealed mild blood eosinophilia [520 eosinophils/mm³ (7.3%)]. We perform stool examinations in all patients with acute or chronic urticaria returning from Tropical and Subtropical countries. In this patient, three coproparasitological examinations were positive for numerous cysts of *E. nana*. Stool bacteriological examinations were negative. The patient was successfully treated with two courses of metronidazole (2 g/day for 10 days each). No antihistamines were used. Three stool examinations, carried out at the end of the therapy, were negative. Follow up (six months) was negative.

Discussion

The prevalence of *E. nana* in human stool samples varies widely from country to country. In Prague, Czech Republic, in 1978, 5.7% of patients were infected [3]. *E. nana* was recorded in 40 out of 134 apparently healthy Finnish men who had sex with men in 1989 [4]. In 2001, *E. nana* was discovered in 15% of a total of 3,549 children with diarrhoea in Kuwait [2]. In 2005, in

Zambia, in a group of 93 children, the prevalence of *E. nana* was 64.3% [5]. In children from Colombia, in 2017, stool examinations were positive for *E. nana* in 33.2% [12]. Lastly, *E. nana* was found in 15% of pregnant women who lived in poor areas in Bogotá, Colombia [13]. In a previous study on pregnant women, carried out in the state of Minas Gerais, Brazil, the percentage was 2% [14]. Although *E. nana* is considered a non-pathogenic protozoan, it caused rare cases of abdominal pain, diarrhoea (sometimes chronic diarrhoea) [2-9], polyarthritis [9,10] and urticaria [11]. Eosinophilia is rather common [3,15] (8.1% of patients with eosinophilia in the previously cited Czech study) [3]. According to literature data, *E. nana* is sensitive to metronidazole [8,9]. Our case demonstrates that sometimes chronic urticaria can be associated with *E. nana*. In our patient, we observed the complete remission of urticaria by means of metronidazole, a drug that lacks antiallergic and anti-inflammatory action, without the use of antihistamines. We do not know the precise mechanisms by which *E. nana* is involved in this case of urticaria; however, there is evidence there is evidence about the association of *Ascaris lumbricoides* infestation and IL-2 / IFN- γ response [16].

We perform examinations for intestine parasites in patients with urticaria returning from Tropical and Subtropical countries [17]: as previously mentioned, our patient visited Vietnam, like a patient described by Burnstein and Liakos [9]. These examinations are probably unnecessary in patients with chronic spontaneous urticaria acquired in Western European countries [18].

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