Enterobius vermicularis (PINWORMS) infection and enuresis (bedwetting) case report

Infestatia cu Enterobius vermicularis si enurezisul nocturn raport de caz

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ABSTRACT

Pinworms are a common helminth infection with prevalence rates in some communities of as high as 30-50%. Pinworms generally live in the gastrointestinal tract but ectopic sites such as appendix are frequently mentioned for these nematodes. The female Enterobius vermicularis migrates nightly to the perianal area to deposit her eggs, but some worms find their way into adjacent orifices, most commonly the female genitourinary tract, producing an array of symptoms. We present a case report of a massive infestation of urinary bladder leading to nocturnal enuresis in a 20 years old otherwise healthy female.

Keywords: enuresis, intestinal parasitosis, antihelmintic drug.

Case report

In the Urology Department of Clinic Municipal Hospital Cluj-Napoca a 20 years old female came with the following complains: high frequency of miction, nocturnal enuresis (involuntary miction during night) an “pruritus anni”.

From patient history we found out that she has urinary sphincter control since 5 years ago when she started to present involuntary miction during night, especially those days when she was under physical or emotional stress. In the same time she had nocturnal “pruritus anni”. She was diagnosed as having Enterobius vermicularis (E. vermicularis) infection and prescribed Albendazole treatment. The treatment seemed efficient for a short period of time, after which the symptoms reemerged. The patient underwent several antiparasitic treatments, each time in monotherapy, without repetition of the dosages after 2-3 weeks.

There are no signs of enuresis within the patient family.

Patient physical examination shows no sign of abnormality either physical or mental. She was harmoniously developed according with age, only psychically depressed about her situation with the bed wetting. Renal and abdominal ultrasonography shows no signs of abnormalities in the structure or the function of the genitourinary system.

Based on patient history, physical examination and ultrasonography the following clinic diagnosis is established: “Secondary enuresis (Bedwetting). Intestinal parasitosis – Enterobiasis?” and further laboratory analysis of the urine and parasitological examination are prescribed.

The persistence of the E. vermicularis infection is a reason for sending of the patient to the Department of Microbiology - Parasitology of the UMP Cluj-Napoca in order to be checked with the above mentioned analysis. O & P examination is positive for the second sample, scotch test is also positive. At the analysis of urinary sediment we noticed “field filled with E. vermicularis (oxiur) eggs; calcium oxalate and urate crystals, rare desquamated cells” (Fig.1). Repetition of urine analysis shows every time lots of E. vermicularis eggs and even females.

The diagnosis is established as “Intestinal and genito-urinary infection with E. vermicularis”.

We prescribed a treatment with a combination of two antihelmintic drugs: Adipat de piperazin (Nematocton 3x2cpr/day, 7 days, repeat after 1 week) and Albendazol (Zentel) single dose: 2x2cpr, repeat after 2 weeks and
intravesical instillation with silver-nitrate and betadine solution performed by the urologist.

After the above mentioned treatment “pruritus anni” disappeared and no eggs or females of *E. vermicularis* are found at the O&P examination through scotch test, classic O&P examination or urine analysis.

One month after the treatment the patient substantial decrease of the enuresis (bedwetting) episodes, and in a 4 months period after the treatment the patient is cured because no enuresis episodes are present anymore.

**Discussions**

The originality of this case report is the advanced age of the female patient. We did not find any reported case in the literature with occurrence of enuresis episodes of parasitic etiology in such an advanced age.

Nocturnal enuresis is a clinic entity with multiple etiology: genetic, insufficient maturation of sphincter impulse transmission routes, sleep deficiency (non-REM dyssomnia) and organic causes, such as infections, urinary tract obstructions at any level, lumbosacral enervation deficiency in diabetes mellitus, diabetes insipidus, sickle-cell anemia, abnormal cycles for the secretion of antidiuretic hormone (DH) and psycho-emotional disturbances [1, 3]. Among the infectious causes of enuresis, *E. vermicularis* is sometimes cited. [4]

The debut of enuresis in the same time with the *E. vermicularis* infection in this patient was a clue for a possible relation of causality. In order to formulate an etiopathogenetic theory we performed repeated analysis of the urine, everytime finding almost the same huge amount of *E. vermicularis* eggs and sometimes female fragments in the microscopic field. Our conclusion was that the ectopic location of *E. vermicularis* infection lead to enuresis episodes everytime when a psycho-emotional factor was added. The frequent passage of the females through the urinary sphincter may be responsible for its abnormal response to stimuli and bedwetting.

The failure of antiparasitie therapy may be explained by the refuge found by the oxiur females within the urinary bladder. Urinary bladder was an “ecologic recess” for the parasites from which they were able to colonize again the intestine as soon as the concentration of the parasitic drugs allowed this action. Colonization was possible both by active return by new hatched larvae from the bladder or/and by other self-contamination modalities.

The treatment for *E. vermicularis* infection present both in the digestive and genitor-urinary tract must be always a combined therapy (not monotherapy), usually consisting by a benimidazole derivate (Mebendazol or Albendazol) and Ivermectin [2], and must be accompanied by local treatment with instillation at the level of urinary bladder with an antiseptic solution, performed by the urologist. Due to absence of Ivermectine in the drugstore in Romania we recommend a piperazine derivate.

**Conclusions**

1. *E. vermicularis* must be considered as a possible as etiologic factor in any female patient with primary or secondary enuresis.
2. Antiparasitic therapy must contain a combination of antihelminthic drugs accompanied by sterilization of the ectopic site by instillation.
3. The diagnostic protocol for the *E. vermicularis* infection has to include scotch test or Graham test, accompanied by the parasitological examination of the urine in all cases of enuresis.

![Figura 1. Ouă de Enterobius vermicularis în sedimentul urinar (40X)](image)
REZUMAT

Oxiuraza este o una dintre cele mai comune infecții, atingând rate de prevalență în unele comunități de 30-50%. Oxiurii sunt în mod obișnuit localizați la nivelul tractului gastrointestinal, dar pot avea și localizări ectopice, între care apendicele este cel mai frecvent citat. Femelele de Enterobius vermicularis migrează noaptea din intestin în zona perianală pentru depozitarea ouălor, majoritatea reîntorcându-se la nivel intestinal sau decedând și dilacerându-se. Unele însă pătrund în alt orificiu din apropiere, respective cel al tractului genitor-urinar feminine, producând o paletă largă de simptome în funcție de număr. Prezentăm un raport de caz cu infestare masivă, persistentă de-alungul anilor, la nivelul vezicii urinare, care a condus la dezvoltarea și întreținerea unui enurezis nocturn până la vârsta de 20 de ani, la o tânără fără alt tip de probleme de sănătate.

Cuvinte cheie: enurezis, parazitoze intestinale, medicamente antihelmintice.

Reference


