ENTEROBIUS VERMICULARIS: ENDOSCOPIC OPPORTUNISTIC DIAGNOSIS IN A POORLY SYMPTOMATIC INFECTION.

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Abstract

Enterobius vermicularis gastrointestinal infestation is considered as the most common helminthes infection worldwide and is promoted by inadequate personal and community hygiene. The parasite has a hand-to-mouth transmission resulting from scratching of perianal region, where the female parasite lays its eggs. Usually there are few symptoms as the infection is well tolerated. More frequently in children this infestation may be responsible for several non-specific (loss of appetite, abdominal pain, irritability, and pallor) and peculiar symptoms (anal itching, sleep disorders, restlessness and irritability). Scratching often causes skin irritation that, in more severe cases, arises through eczematous dermatitis, haemorrhage or secondary bacterial infections. Sometimes the infection can reach the female genital tract causing pelvic manifestations. When oxyuriasis is suspected, the confirmation is obtained by cello-tape test and the mebendazole-based treatment is usually effective. Coproscopic tests may establish the diagnosis also in unclear
cases without typical symptoms. Treatment includes an antihelminthic agent for the patient and household members as well as home hygiene measures. The diagnosis in adult patients is infrequent as the appearance of specimens during colonoscopy and endoscopists may not suspect its presence. However, the association of Enterobius vermicularis infestation with acute appendicitis varies from 0.2–41.8%. Thus, the early differential diagnosis can exclude surgery and post-operative complications caused by the abdominal cavity parasitic contamination. We report about an endoscopic diagnosis of oxyuriasis in a poorly symptomatic patient who had undergone colonoscopy as polypectomy follow-up.

Abstract

L’infezione intestinale da Enterobius vermicularis è considerata essere una delle più diffuse elmintiasi ed è frequentemente associata ad una inadequate igiene personale e di comunità. Questo parassita si trasmette per via oro-fecal infestando la regione perianale ove gli esemplari femminili adulti depositano le uova. Tipicamente l’infezione viene ben tollerata vista la scarsità dei sintomi provocati. Più frequentemente nei bambini il parassita può essere responsabile di sintomi aspecifici (anoressia, dolore addominale, irritabilità e pallore) e specifici (prurito anale, disturbi del sonno). Le lesioni da grattamento, provocando una irritazione cutanea costante, nei casi più severi portano alla comparsa di dermatite eczematosa, emorragia e superinfezione batterica. Talvolta l’infezione può raggiungere il tratto genit-urinario femminile causando manifestazioni pelviche. Qualora l’enterobiasi venga sospettata, lo Scotch Test rappresenta un metodo mininvasivo per la conferma diagnostica, anche nei casi senza manifestazioni tipiche, ed il trattamento mediante Mebendazolo una cura efficace. La diagnosi endoscopica, così come il sospetto diagnostico nell’adulto non è frequente, così l’endoscopista potrebbe sotto pesare la possibile infestazione. Tuttavia, l’associazione tra enterobiasi ed appendicite è dimostrabile nello 0.2–41.8% dei casi. Così, la diagnosi differenziale, in questi casi, se precocemente effettuata, può escludere il trattamento chirurgico e conseguentemente le possibili complicanze postoperatorie ad esso collegate. Nel nostro caso, viene descritto un caso di diagnosi esclusivamente endoscopica di ossiuriasi colica in un paziente paucisintomatico, sottoposto a colonoscopia totale per controllo in una pregressa polipektomia.

Background

Enterobius vermicularis (Ev) gastrointestinal infestation is considered as the most common helminthes infection (1) with a high prevalence in developing countries (2). The fecal-oral route is the most common infection route for human. Poor sanitation is closely linked to the dissemination of this parasite and young children are particularly at risk. More frequently in children, the Ev infection may be responsible for loss of appetite, abdominal pain, irritability, and pallor, but the most common symptom is sleep disturbance caused by pruritus ani (anal itching), reported in 33 percent of patients (3). Thus, the parasites have a hand-to-mouth transmission resulting from scratching of perianal region, where the female parasite lays its eggs (4). Usually there are few symptoms as the infection is well tolerated. However, rare complications, primarily caused by the worms migrating into the genital and urinary tract, have been reported (5, 6, 7, 8, 9). When oxyuriasis is suspected, the confirmation is obtained by cello-tape test. This is an effective and minimally invasive method that is performed in the morning pressing the tape onto the perianal area before bathing or defecation. The microscope slide examination may reveal the eggs which are rarely found in the stool. The examination should be repeated for three consecutive days to be effective. While in children the diagnosis is easy, sometimes in adults, considering the embarrassment caused by this topic, the diagnosis is delayed (10). Furthermore, bowel preparation (BP) prior to a colonoscopy examination frequently lowers the chances of detecting the worms macroscopically (11). Thus, endoscopic diagnosis is infrequent as the endoscopist may not suspect its presence. In our case, we describe an oxyuriasis in an apparently asymptomatic adult patient.
Case Report

An Italian 51-year-old man presented to our endoscopic unit for a colonoscopy as follow-up to a previous right colon polypectomy for a tubulo-villous adenoma with a low-grade dysplasia, three years before. He denied any alarm symptoms, or change in bowel habits. The examination was performed under conscious sedation by midazolam (0.07 mg/kg). The cecum was easily reached, although the 4L-PEG based BP of the right colon was suboptimal because of the presence of copious liquid faecal residues. We tried to aspirate the residues in the right colon in order to obtain an optimal mucosal visualization. Thus, during the cecum exploration a single Ev specimen was seen protruding from fecal residues firstly (Fig. 1) and then clearly detected (Fig. 2). When questioned for possible symptoms, he reported only the presence of mild anal itching. Moreover, until then the presence of II grade hemorrhoids justified the symptom. A single oral dose of 100 mg mebendazole, which was repeated 10 days later, was prescribed and a cello-tape test was performed for all household members. A subsequent diagnosis of oxyuriasis was performed in two household members (wife and 9- years-old daughter).

Fig. 1 - A white pinworm hiding among the fecal residue (black circle).
Enterobius vermicularis: endoscopic opportunistic diagnosis in a poorly symptomatic infection

**Fig. 2** - Adult Ev female pinworm (8-13mm) with developed reproductive organs (white area) in ascending colon. The males, expelled immediately after copulation, are frequently not visible because they have smaller size of females (2-5 mm).

**Discussion**

Oxyuriasis is mainly seen in children between five and fourteen years and is frequently treated by medication. However, this disease may also be of surgical interest because of some atypical manifestations. One of these unusual manifestations is represented by acute or chronic appendicitis. Appendectomy is one of the most frequently performed operations worldwide and the association of Enterobius vermicularis infestation with acute appendicitis varies from 0.2–41.8% (12), whereas not all appendicitis are surgically treated. In a review concerning unusual histologic findings during appendectomy, Akbulut et al (13), described a 0.5% of appendicitis caused by Ev in 80,698 appendectomies. The parasite can creep into the appendix and cause the obstruction, a tissue reaction or actively penetrate the intestinal wall. However, despite the presence of Ev is associated with chronic inflammatory infiltrates and eosinophilia (14, 15), we cannot determine if inflammation is already present before infection. However, the early differential diagnosis, in these cases can exclude surgery and post-operative complications caused by the abdominal cavity parasitic contamination.

Although enterobiasis is mainly seen in tropical countries with lower socioeconomic levels, endoscopists practicing in industrialized countries, must be aware of this condition in their differential diagnosis (10, 14). Furthermore, the symptoms linked to the pinworms infestation is common to many benign pathologies of the anal region, which may justify an endoscopic examination. Thus, the possibility of being faced with a case of undiagnosed oxyuriasis, also if usually unexpected (16), is higher in the case of a digestive endoscopy, especially if the patient is in direct contact with school-age children. In our case, the endoscopic diagnosis has allowed an immediate patient treatment and the subsequent diagnosis of oxyuriasis in two household members (wife and daughter). Moreover, considering the family history, there is a high probability for the initial infection to be in the 9-year old daughter. Patients with intestinal parasitic infestation would have undergone a previous medical examination for non-specific abdominal symptoms. The association of anal itching, previous abdominal pain episodes, eosinophilia and proximity to a school-age child, should suggest the presence of a parasitic infection. In this case, a cello-tape test can prevent the unjustified endoscopy or surgery.
Conclusions

Usually, the endoscopy cannot be considered an appropriate test for the oxyuriasis diagnosis for its lack of sensitivity. However, considering the similarity of the symptoms manifested with other anorectal benign pathologies, the endoscopists should always give proper weight to the factors that may predict a possible parasitic infestation.

References


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