

CASE REPORT

INTESTINAL MICROSPORIDIOSIS : FIRST REPORTED CASE IN THAILAND

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Intestinal microsporidiosis is an enteric parasitic infection caused mainly by *Enterocytozoon* species. The organism is unicellular and has characteristic spores containing an extrusible tube which serves as a passage for inoculating host cells. Intestinal microsporidiosis was first reported in AIDS patients in 1985 (Dobbins and Weinstein, 1985; Desportes *et al*, 1985) and is being diagnosed with increasing frequency from various parts of the world (Molina *et al*, 1993; Schattenkerk *et al*, 1991; Orenstein *et al*, 1990). Molina *et al* (1993) had reported rather high prevalence of intestinal microsporidiosis as high as 50% in AIDS patients who had chronic unexplained diarrhea. The diagnosis of this organism has been solely on the ultrastructural identification of this intracellular parasite in biopsy specimens of the small intestines. Later on there were many authors reported various techniques for diagnosing the organism under light microscopy by using stool specimens and duodenal aspirates (Kotler *et al*, 1993; Weber *et al*, 1992; Orenstein *et al*, 1990; Gool *et al*, 1990). Kotler *et al* (1993) were the first to report the sensitivity and specificity of the light microscopic diagnosis of microsporidium by using biopsy specimen. But Orenstein *et al* (1990), and Gool *et al* (1990) reported the practical procedures to diagnose this organism under light microscope.

Here we report a case of intestinal microsporidiosis diagnosed under light microscopy. To the best of our knowledge, it is the first case reported from Thailand.

A 34 years old married male was admitted at Pramongkutklao hospital with the complaint of left hip pain which later was diagnosed as septic hip joint and was found to be HIV positive. His performance status on admission was 70 (Karnofsky score). He also complained of watery diarrhea for indeterminate period with a frequency of 3-4 times a day but refused history of weight loss. On examination the patient was thin but not cachectic, oral thrush was

present. Other associated opportunistic infection was pulmonary and extrapulmonary tuberculosis. Stool was sent for extensive investigation for ova and parasites as described in the method including culture. His total lymphocyte was 1,105 cells/dl and CD₄ count was 28, other biochemistry laboratory findings were still normal at the time of report.

Stool was examined in triplicate by the following methods : simple smear, smear after concentration method using formaline ether, culture for *Strongyloides stercoralis* by Harada and Mori, staining by modified acid fast for cryptosporidium. Smear for microsporidia was prepared separately by preparing from 10 µl of a suspension of unconcentrated liquid stool in 10% formalin (1:3) and allowed to dry at room temperature. The slides were fixed in 70% ethanol and stained with modified Gomori's trichrome for 30 minutes, rinsed with acidified alcohol, absolute ethanol and then mounted in permount (modified from Weber *et al*, 1992). The slides were examined under light microscope using oil immersion field. The slides were compared and confirmed by comparison with slides sent by Drs Ralph and Wahlquist, Department of Health and Human Services, Public Health Service, Centers for Disease Control, Atlanta GA, USA.

Stool was negative for cells, mucus and blood. Culture was also negative; *Cryptosporidium*, *Cyclospora* and *Isospora* were not found. Stool smears prepared by the above method revealed characteristic microsporidian spore of 0.5-1.0 × 1.1 µm, oval in shape stained bright pinkish-red with a pinkish red belt like stripe upto 10 spores were seen (Fig 1).

The patient had been diagnosed as intestinal microsporidiosis after discharge. The patient's diarrhea dissolved without treatment after two weeks of follow up. His performance score at discharge was 90 and is still followed regularly at outpatient clinic at Pramongkutklao Hospital.

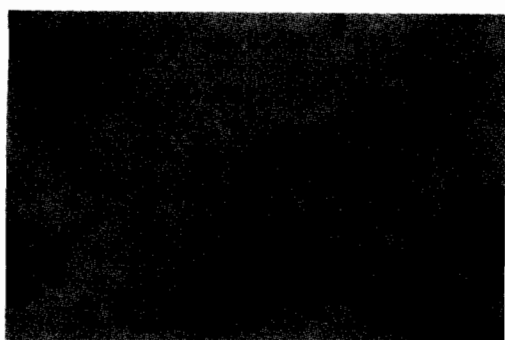


Fig 1—Microsporidium spore of the patient using modified Gomori trichrome stain (100x).

Intestinal microsporidiosis has been reported recently in higher percentage in HIV positive patients. Up to 7%, 33% and 50% had been reported from Africa, Australia and France respectively (Bretagne *et al*, 1993; Field *et al*, 1993; Molina *et al*, 1993). As a result of improvement of various staining techniques for spores in the stool specimens and alertness of its presence, this new organism now is being recognized as one of the major causes of unexplained chronic diarrhea.

Clinical significance of this infection in HIV positive patients with chronic diarrhea has been reviewed with some controversy. Schattenkerk *et al* (1991) and Bretagne *et al* (1993) have reported the relationship between intestinal microsporidiosis and chronic diarrhea, especially in individuals with pronounced cellular immune deficiency (low CD₄ cell counts). Asmuth *et al* (1993) reported clinical features of 20 cases of microsporidiosis induced diarrhea as follows: the mean duration of diarrhea was 8.5 ± 6.9 month, stool frequency was about 5.7 ± 2 per day, the consistency varied from loose to watery. The other associated gastrointestinal symptoms were bloating and anorexia. But Field *et al* (1993) reported only 33% (36/109) of patients with microsporidia had diarrhea and one of 71 patients who came with other indications had no diarrhea. Cotte *et al* (1993) reported one patient with microsporidia had severe malabsorption but no diarrhea. Lastly Rabeneck *et al* (1993) conducted a case-control study to determine whether there was an association between the microsporidian parasite (*Enterocytozoon bienersi*) and chronic diarrhea in 106 HIV infected men (55 with chronic diarrhea and 51 without). There was no significant difference in the incidence of microsporidiosis between the two groups. In conclusion,

patients with intestinal microsporidiosis sometimes present with chronic diarrhea but may not always be the cause of symptoms, like the case reported here. However it warrants further investigation about the role of this microsporidia contributing to disease in HIV positive patients.

Since the number of AIDS cases is increasing in Thailand and nearly half of them presents with diarrhea, the prevalence of this organism is expected to be high in this country. So the first case reported here was just a good start for further evaluating exact prevalence of this infection in this group of population. Usually the invasive procedure is needed to get biopsy specimens for definitive diagnosis of this organism. But unfortunately the endoscopy is done in this country only when highly indicated especially in AIDS patients so the method used here is a practical method using only stool for the diagnosis.

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