



CYSTOISOSPORA INFECTION IN AN IMMUNO-COMPROMISED ADULT: A CASE REPORT

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ABSTRACT

Parasitic cause of diarrhea in healthy as well as immune-suppressed individuals is often neglected in developing countries. The common parasites causing diarrhea include amoebiasis, giardiasis and other coccidian parasites. Stool examination remains the commonest investigation to diagnose such infection. As the choice of treatment differs, a microbiologist plays vital role in identification and overall management.

KEYWORDS: Cystoisosporiasis, coccidia, intestinal parasite, ZN stain.

INTRODUCTION

Intestinal parasitic infection is the commonest opportunistic infection in immune-compromised individual causing diarrhea and weight loss. Of these, coccidian parasites namely *Cryptosporidium parvum* is more common as compared to *Cystoisospora* and *Cyclospora*. The oocysts of these parasites can be identified by morphological features on modified Ziehl Neelson stained smear preparation. In this study we describe a successfully managed case of *Cystoisospora* diarrhea.

CASE DESCRIPTION

A 43 year old individual reported to medical OPD with complaints of increase frequency of loose stools, generalized weakness and pain lower abdomen for past 4 days. The stools were semi-formed, not accompanied with blood or excess of mucous. There was no history of vomiting, fever or significant weight loss. He was diagnosed with HIV infection 14 months back and was managed with tenofovir, lamivudine and efavirenz based antiretroviral therapy. His last recorded CD4 cell count

was 434/ μ l. Our patient denied history of recent travel, exposure to any domesticated animals at home or consumption of untreated water.

Clinical examination showed features of mild dehydration and absence of pallor or significant lymphadenopathy. Abdomen was soft with no evidence of free fluid or hepato-splenomegaly. Hematological and biochemical parameters were within normal limits except for mild hyponatremia (Serum sodium: 132 mmol/L). Wet mount examination of stool specimen did not show any ova or cysts. However modified Ziehl Neelson stained smear prepared to rule out Cryptosporidiosis showed presence of ellipsoidal, approx 30 x 15 μ m size, multiple acid fast oocysts of *Cystoisospora belli* (Figure 1). He was managed with tablet trimethoprim 160 mg (TMP) and sulfamethoxazole 800 mg (SX) combination four times a day for two weeks. Patient recovered symptomatically by end of first week. Follow-up stool examination after two weeks was negative for any acid fast oocyst.

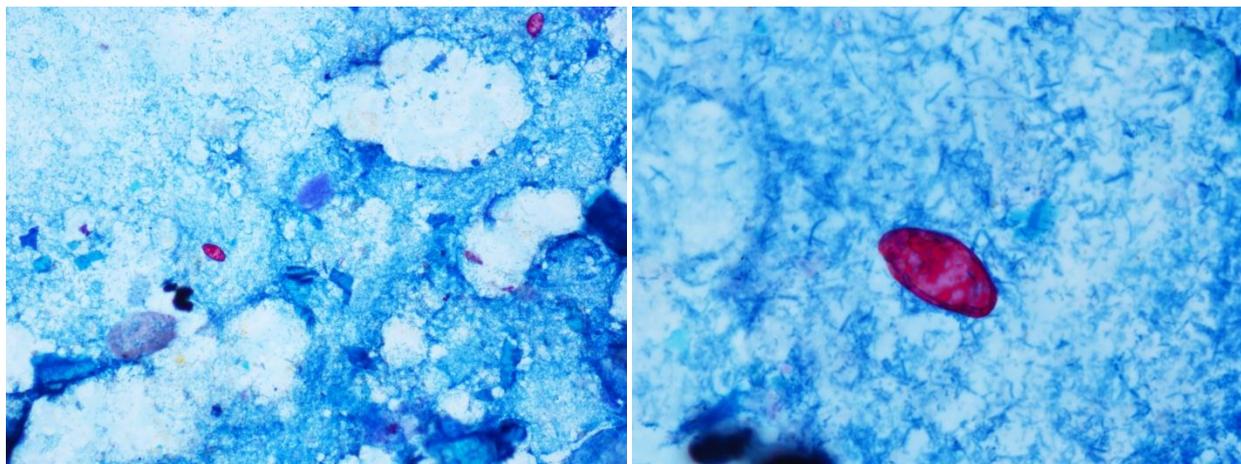


Figure 1: Low power (10X) and high power (40X) view of modified ZN stained stool smear showing immature acid fast ellipsoid oocysts measuring approx 30 x 15µ.

DISCUSSION

Although Cryptosporidiosis is much commoner, *Cystoisospora* or *Cyclospora* infection causing diarrhea has been reported from various parts of India.^[1-3] Factors contributing to these infections include poor sanitary conditions, exposure to infected pets or livestock, and consumption of food articles or water infected with oocysts. These are also commonest opportunistic infection causing diarrhea in HIV infected individuals and renal transplant recipients.

Oocyst of *Cystoisospora* can be identified by bright field microscopy by its typical ellipsoidal shape. These oocysts are larger than those of *cryptosporidium* or *cyclospora*, and measures 25-30µ by 10-20 µ. The cyst wall exhibits blue fluorescence when viewed under fluorescence microscope with 330-365 nm UV excitation filter. Double strength cotrimoxazole tablet (containing trimethoprim 160 mg and sulphamethoxazole 800 mg) twice daily for 8-10 days, is the choice of drug for *Cystoisosporiasis*.^[4] There is high recurrence rate in HIV infected individuals, thereby requiring increased frequency and duration of treatment.^[5] Other treatment option includes tab pyremethamine supplemented with folinic acid or tab ciprofloxacin.^[6]

Modified ZN stain is a cost effective method of identifying coccidian oocysts in stool specimen. Oocysts of *Cryptosporidium sp* are 4-5µ in size, whereas *Cyclospora* oocysts are spherical measuring 8-10µ diameter. Freshly passed *Cryptosporidium* oocysts in stool are infective, supporting human to human transmission. Outbreaks of *Cryptosporidium* diarrhea has been linked to contaminated water supply.^[7,8] Nitazoxanide is the choice of drug for symptomatic cases. *Cyclospora* oocysts require at least 7 days of sporulation outside human host to become infective, thus faeco-oral transmission is common. Cyclosporiasis responds to TMP and SX treatment.

To conclude, diarrhea caused by *Cryptosporidium* is clinically indistinguishable from that caused by

Cystoisospora or *Cyclospora*. Since, the treatment option varies; a microbiologist plays an important role in identification of parasitic oocysts in stool specimen.

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