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Case Report

HIV Enteropathy in an Adolescent Bangladeshi Girl: A Case Report

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Abstract:

We report a case of 14 years old girl who presented with intractable diarrhoea, low-grade irregular fever, multiple painful oral ulcers, recurrent boils over different parts of the body for 1 year, and weight loss for 6 months. Previously she was erroneously diagnosed as intestinal tuberculosis. The patient did not respond to antitubercular drugs. She also got prednisolone and mesalamine as the treatment of inflammatory bowel disease. Now she is diagnosed as a case of AIDS-stage 3. We describe the case and discuss its clinical and biochemical findings with treatment.

Key words: Bangladesh, Case report, Enteropathy, HIV.

Introduction:

Chronic diarrhoea is the most common manifestation of acquired immunodeficiency syndrome (AIDS), resulting in significant morbidity and mortality[1-3]. Diarrhoea in HIV infected individuals is caused by both classic enteric pathogens and also different opportunistic infectious agents due to defective immunity[1,4,5]. According to World Health Organization 36.7 million individuals worldwide were HIV infected at the end of the year 2016. Of these, 2.1 million were below 15 years of age and the number is continuing to increase worldwide[1]. In developing countries, persistent diarrhoea affects up to 95% of individuals with AIDS, causing malabsorption, significant weight loss, higher rates of extra-intestinal opportunistic infections, and increased morbidity and mortality[4,5,7]. The origin of these symptoms is still uncertain as we fail to identify an enteric pathogen in as many as 30-40% of all cases[2]. Shigellosis, Campylobacter infection, Cryptosporidiosis, Mycobacterium avium complex, Cytomegalovirus, and HIV enteropathy occur more frequently in HIV-1 infected persons[4]. AIDS enteropathy is defined as chronic, well-established diarrhoea persisting for more than one month, for which no infectious cause can be identified after a complete evaluation in patients with documented advance HIV infection[2,6]. Pharmacologic options for the treatment of non-infectious diarrhoea in patients with HIV are primarily supportive e.g. hydration via intravenous and oral routes, repletion of electrolytes, and treating the underlying cause, if possible[8,9].

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Case Report:

A 14 years old girl, 2nd issue of her deceased parents was admitted to the Paediatric Gastroenterology department for evaluation of intractable diarrhoea for 1½ months, low-grade irregular fever, multiple painful oral ulcers, recurrent boils over different parts of the body for 1 year, and weight loss for 6 months. The patient complained of chronic, painless, nonbloody, profuse watery diarrhoea with a weight loss of 5kg. She had no complaints of cough or expectoration. Previously for similar type of illness, she was hospitalized and was diagnosed as a case of intestinal tuberculosis 1½ year back and was treated with antitubercular drugs with good compliance for 6 months. There was mild symptomatic improvement following treatment. But after 2 months she again developed diarrhoea along with the above complaints. Then she was evaluated 1st in chest disease hospital and then in DMCH and diagnosed as a case of IBD, treated accordingly, without any improvement. Her parents had died of tuberculosis in spite of getting proper medication about 2 years back.

Physical examination revealed she was ill-looking, emaciated, having no signs of dehydration with vital signs within normal limit, severely underweight, severely wasted, and severely stunted. She had multiple boils over different parts of the body and tender oral ulcers over the soft palate and buccal mucosa.

Laboratory data showed slightly reduced leukocyte (3650 cells/cumm) and total lymphocyte (620 cells/cumm) counts with high neutrophil count and normal hemoglobin, leading to a low absolute CD4+ count (146 cells/μL). Anti HIV 1 & 2 was positive and her plasma HIV-RNA levels reached 2,000,000 copies/mL, leading to the diagnosis of HIV infection. Her kidney functions, ALT, TTG- IgA, Serum IgA, IgM, IgG were normal. Urine R/M/E was also normal. Stool examination showed no red blood cells or leukocytes but trophozoites of E. Histolytica was observed. Her chest radiograph was normal and sputum for AFB and GeneXpert were negative. Colonoscopic findings were normal macroscopically up to terminal ileum and histopathological findings were normal.

The child was diagnosed as a case of AIDS-Stage 3 and was treated with Tenofovir, Lamivudine, Efavirenz, Co-trimoxazole. In the hospital, she was also given supportive care with oral rehydration solution and a nutritious diet.

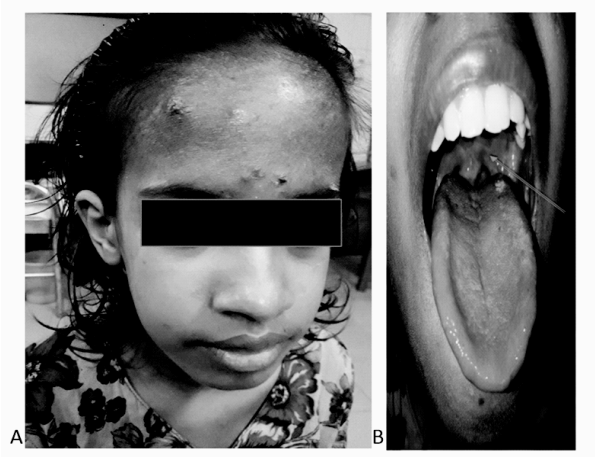

Figure-1: A- Boils on forehead. B-oral ulcers

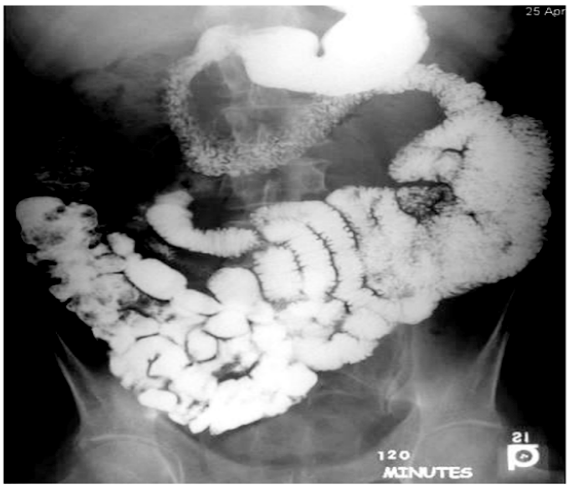

Figure-2: Barium follow through of small bowel

Discussion:

Chronic diarrhoea is the hallmark of advanced HIV infection and it is caused by intestinal infections. As a mucosal surface, the Gastrointestinal (GI) tract serves as an important barrier between pathogens in the external environment and the body's sterile internal environment[11]. The tight epithelial junctions, as well as the local immune system of the GI tract, protect against pathogenic organisms. However, in the face of HIV infection, normal defenses are disrupted, leading to a wide range of clinical and pathogenic consequences. Although the mechanisms responsible for the abnormalities remain unknown, several explanations have been put forward, from a virotoxic effect of HIV itself on enterocytes to local activation of the GI immune system[12,13]. However, a major risk is likely associated with the HIV transactivator factor (Tat)[12].

GI symptoms are reported by 50-70% of HIV-infected persons, with even higher percentages among those residing in the developing world.[14,15] Diarrhoea, the most common GI complaint can occur during both acute HIV infection and advanced disease. Within days of HIV infection, an intense infiltration of virus-laden lymphocytes is present within the bowel wall and may manifest as diarrhoea during seroconverting illness[16,17]. Over time, chronic changes ensue with diminution of the protective mucosal barrier with villous atrophy and crypt hypertrophy. Opportunistic infections may occur as the CD4 T cell count falls below 100-200 cells/mm3 including a myriad of viral, bacterial, fungal, and parasitic pathogens[1,5,6]. Patients with AIDS develop an enteropathy. This enteropathy is characterized by bacterial overgrowth, particularly anaerobes in the small intestine, resulting in severe malabsorption. Intestinal dysfunction is a specific HIV related syndrome in children[18].

Candida and Herpes commonly involve the upper GI tract including oral cavity, oesophagus, and stomach. Candidiasis of the mouth and distal oesophagus are associated with loss of appetite, dysphagia, and weight loss. Herpes, CMV, intracellular M. avium can cause similar ulcers. Severe candidiasis may cause necrotizing oesophagitis, bleeding, and occasionally perforation. Although the rate of diarrhoea has been reduced significantly after the introduction of ART, HIV patients are at higher risk of prolonged and severe lower GI infection from Campylobacter jejuni and invasive nontyphoid salmonella infections. Rotavirus is the major cause of viral diarrhoea where the universal rotaviral vaccine is not routinely given on the contrary Norovirus causes most acute diarrhoea in HIV infected children in developed countries with rotavirus vaccination coverage. CMV may cause severe intractable diarrhoea, enterocolitis, chronic diarrhoea,

and bleeding in these children. Parasites that cause diarrhoea in these groups are Giardia Lamblia, Entamoeba Histolytica, Blastocystis Hominis, and Strongyloidesstercoralis which have also pathogenic activities in the general population. Cryptosporidium is the most common opportunistic parasite which causes severe dehydrating diarrhoea and abdominal pain. Besides Candida important funguses that causes GI infection in HIV infected children are Microsporidia and Histoplasma. HIV-associated GI malignancies such as Kaposi sarcoma may produce symptoms of diarrhoea and per rectal bleeding[17-19]. Because morbidity from infectious diarrhoea is significant and 70% of the pathogens can be isolated, it is important for adetailed evaluation to be performed. Stool culture should be done for Salmonella, Shigellaflexneri, and Campylobacter jejuni at least three times and assayed for Clostridium difficile toxins. The stool specimens (direct, concentrated) were examined for parasites using saline, iodine, trichrome, and acid-fast preparations. Mucosal biopsies are critical for the diagnosis of viral pathogens, such as cytomegalovirus with a detection rate of 45%[5]. Duodenal fluid aspiration is least helpful in yielding a diagnosis but may be useful in Microsporida. Stool culture and microbiological examination of the stool have facilitated the identification of pathogenic bacteria and parasites in as many as 68% of cases[15-16]. Evaluation of these patients may include a barium meal and follow through but for evaluation of oesophageal diseases, endoscopy is much more sensitive and specific. Candida presents grossly as white plaques that are friable to the touch with mycelium detected on potassium hydroxide staining on light microscopy. Cytomegalovirus presents as a single ulcer or diffuse esophagitis with inclusion bodies, and herpes simplex virus presents as vesicles or shallow ulcers with inclusion bodies in the epithelial cells. Viral serology for herpes simplex virus and cytomegalovirus in these patients is usually nondiagnostic and is not helpful colonic biopsy specimens are cultured for cytomegalovirus, adenovirus, mycobacteria, and herpes simplex virus. Duodenal fluid specimens are examined for parasites. If this is not helpful, then biopsy specimens are examined by electron microscopy for Microsporida (duodenal tissue) and adenovirus (colonic tissue)[19,20].

Patients with AIDS often are colonized with more than one pathogen. Therefore, if the response to adequate therapy is not achieved, proceeding with invasive diagnostics, such as endoscopy for additional pathogens, is recommended. Using this approach, many of the gastrointestinal infections that have been mentioned can be effectively treated or suppressed with appropriate antimicrobial therapy.

While the diarrhoea is being evaluated, patients would benefit from supportive therapy with rehydration, electrolyte supplementation, and medications that inhibit intestinal motility and secretion. The use of antimotility drugs in diarrhoea is controversial. Total parental nutrition is a therapeutic consideration in severe cases[19].

Enteric involvement by cytomegalovirus has been treated successfully with ganciclovir and phosphonoformate (foscarnet). There is no effective treatment for M avium-intracellulare but several drugs such as amikacin, ciprofloxacin, imipenem, rifampin, ethambutol, and clofazimine are being used; these drugs appear to reduce the mycobacterial load and systemic symptoms in these patients. Several new drugs such as spiramycin, diclazuril, bovine colostrums, and transfer factors are in clinical trials at this time[20]. Somatostatin has been used for secretory-type diarrhoea associated with cryptosporidiosis in some patients. These recurrences and the need for chronic suppressive therapy regimens eventually lead to these patients developing drug-resistant pathogens. Such examples include Shigella, Campylobacter, Cytomegalovirus, and Herpes simplex virus[13]. The emergence of herpes simplex virus and cytomegalovirus isolates that are resistant to acyclovir and ganciclovir respectively, hastens the need to do routine viral susceptibility testing if effective alternate therapies become available. It also should be noted that infections with several pathogens such as Cryptosporidium, Microsporida, and possibly M avium-intracellulare cannot be successfully treated and in these patients, supportive care should be implemented and participation in trials assessing a new therapy should be considered. Treatment of these patients also may be complicated by antibiotic-associated diarrhoea and Clostridium difficile colitis. In addition, the Centers for Disease Control and Prevention recently expanded its definition of AIDS, defining illnesses to include several of the infectious diseases mentioned. This would have a significant impact on the financial support in the management of this population. Nutritional management is also very important. Calculated calories should be ensured as well as supplementation of vitamin B12, folate, iron, zinc, and vitamin A and E. In vitro evidence demonstrated that zinc limits Tat induced fluid secretion and HIV related diarrhoea.

Conclusion:

In a country like ours which is an endemic area for tuberculosis and HIV prevalence is low, we can miss easily such type of cases as depicted here. So, we should carefully evaluate a patient who presents with chronic diarrhoea with meticulous history and physical examination before labeling with tuberculosis or MDR tuberculosis. HIV screening is to be done, where the cause of chronic diarrhoea is not identified.

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