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Case Report

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CAMPYLOBACTER JEJUNI GASTROENTERITIS COMPLICATED BY SEVERE PANCYTOPENIA IN TWO NORMAL HEALTHY CHILDREN; A VERY RARE PRESENTATION.

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ABSTRACT

Campylobacters are comma-shaped gram-negative bacteria, known to cause mild gastrointestinal illness in form of diarrhea or vomiting. Meningitis, demyelinating encephalomyelitis, Gullian Barre syndrome, endocarditis and osteomyelitis are known to be caused by campylobacter jejuni in immune-compromised individuals. Severe pancytopenia following its mild gastrointestinal infection is very rarely reported in normal healthy individuals. We here report two previously healthy and normal children, who presented with severe pancytopenia following mild campylobacter jejuni gastroenteritis.

KEYWORDS: campylobacter jejuni, gastroenteritis, pancytopenia.

INTRODUCTION

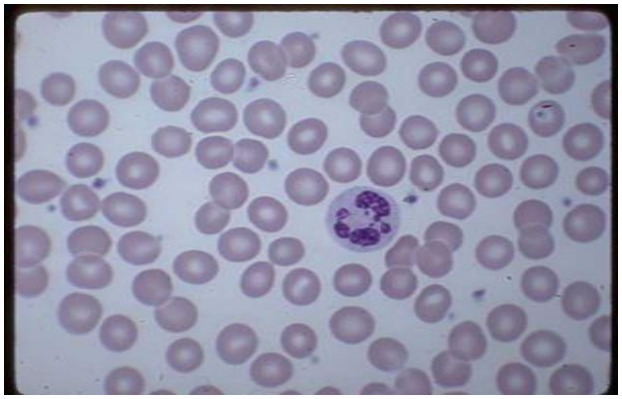
Campylobacters are spiral or comma-shaped gram-negative bacteria that are usually a common cause of diarrhea everywhere in the world and are the most frequently identified cause bacterial diarrhea in industrialized nations.[1] The potential sources of *Campylobacter* infection include unpasteurized milk, other foods of animal origin, contaminated water, and pets. This usually presents with self-limited diarrhea with vomiting, mild fever and abdominal pain. Gastrointestinal bleeding, meningitis, demyelinating encephalomyelitis, Gullian Barre syndrome, endocarditis and osteomyelitis are known to be caused by campylobacter jejuni, but severe pancytopenia is rarely known to occur.[2] To my best of knowledge literature reports only one case of pancytopenia in immunocompromised patient, but such a severe pancytopenia has not been reported in normally healthy children. We here report two such patients.

CASE REPORT 1

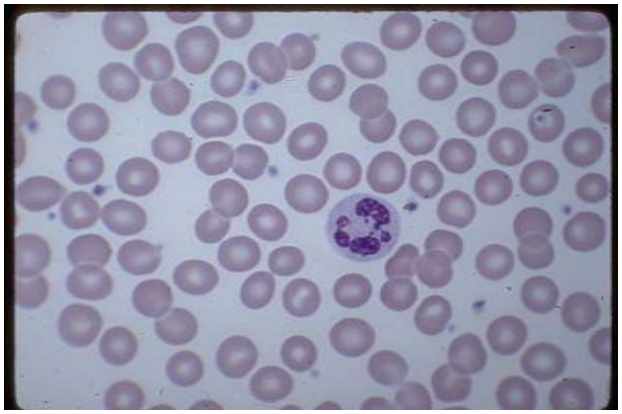
Eight year old boy second born of non-consanguineous marriage who presented with acute diarrhea mixed with blood, vomiting and mild fever. Compylobacter jejuni was grown from stool culture. Child improved after 2-3 days of conservative treatment in form of IV and oral rehydration. 4-5 days later on, he again presented with features of lethargy, sudden pallor, thrombocytopenia and features suggestive of pancytopenia. His Hb was 4 gm/dl, WBC 1800/dl(P 50, L 42,E4,M4 %), 50000 platelets, normocytic normochromic picture on peripheral smear [figure 1a] with no blasts, reticulocyte index of 2.3%. Patient's LDH level, comb's test, autoimmune profile B12, folic acid level, liver function test, USG abdomen, chest x ray, bone scan were normal . Bone marrow study[figure 1b] revealed erythroid hyperplasia with few erythrocyte precursors with normal cytogenic study. Patients received conservative treatment in form of blood products and improved after 3 weeks of conservative treatment with normal blood count and bone marrow study. Child is doing well at six months follow-up.

CASE REPORT 2

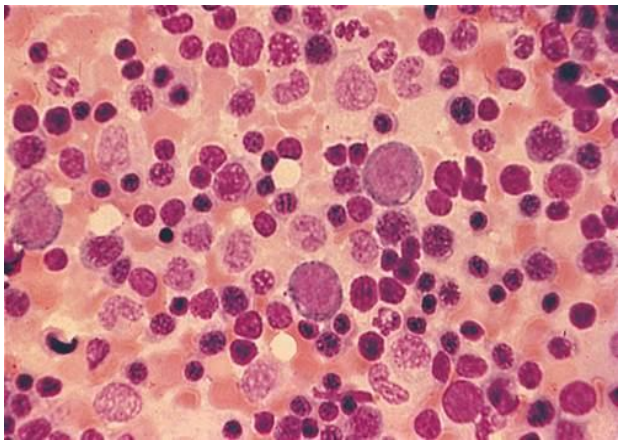
Six year old girl, third born of non-consanguineous marriage who presented with bloody diarrhea, vomiting and fever. Stool culture grown compylobacter jejuni. Child improved after 3-4 days of conservative treatment in form of IV fluids. 5-6 days later on, she again presented with features of lethargy, sudden pallor, thrombocytopenia and features suggestive of pancytopenia. His Hb was 5 gm/dl, WBC 1300/dl(P42, L 52,E4,M2 %), 42000 platelets, normocytic normochromic picture on peripheral smear[figure 2a] with no blasts, reticulocyte index of 3.1%. Patient's LDH level, comb's test, autoimmune profile B12, folic acid level, liver function test, USG abdomen, chest x ray, bone scan of this patient were also normal . Bone marrow study [figure 2b] revealed mild erythroid hyperplasia with few erythrocyte precursors with normal cytogenic study. Patients received conservative treatment in form of blood products and improved after 6 weeks of conservative treatment with normal blood counts and bone marrow study. Child is doing well at one year follow-up.



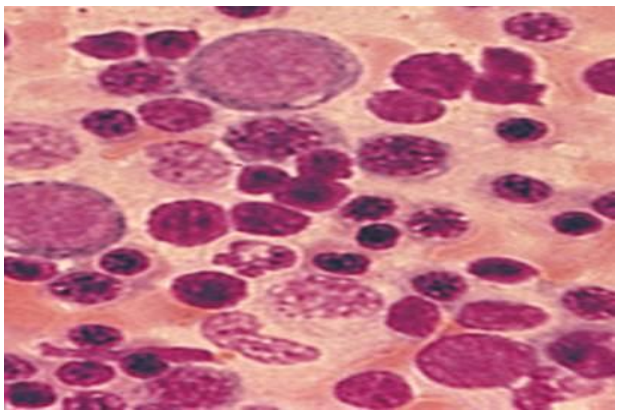
FIGURE[1a] peripheral smear: patient-1



FIGURE[2a] peripheral smear: patient-2



FIGURE[1b] bone marrow: patient-1



FIGURE[2b] bone marrow: patient-2

DISCUSSION

The typical infection with *C. jejuni* is characterized by an acute diarrheal illness associated with fever and abdominal cramps and is clinically indistinguishable from gastroenteritis caused by *Salmonella*, *Shigella*, or other enteric bacterial pathogens. Gastrointestinal bleeding, meningitis, demyelinating encephalomyelitis, Gullian Barre syndrome, endocarditis and osteomyelitis are the rare complications known to be caused by campylobacter jejuni. Immunocompromised patients with acquired or congenital hypogammaglobulinemia may develop severe, recurrent *Campylobacter* enteritis.[3,4] Hypogammaglobulinemic patients also are particularly susceptible to extra-intestinal *C. jejuni* infections (e.g., bacteremia, skin infections, osteomyelitis), suggesting that immunoglobulins are important in the defense against *Campylobacter* infections.[5,6] Indeed, in one study of 41 hypogammaglobulinemic patients, 5 (12%) had experienced at least one episode of documented *C. jejuni* septicemia.[7] Various viral and some bacterial infections have been reported in past to cause transient pancytopenia due to activation of T cell mechanisms.[8,9] The invasive potential of campylobacter may lead to major systemic complications, usually in immunocompromised patients or in patients at extremes of ages.[10,11] Though our patient was not immunocompromised but relative immune non-competitiveness is always a possibility in a young child. We pursued conservative management after a single red cell transfusion as bone marrow regeneration process reinstated normal full blood counts in three to six weeks in both the patients.

CONCLUSSION

We conclude that C. jejuni infection can cause severe systemic complications, including pancytopenia, in young children, and clinicians need to be aware of such rare possibility.

CONFLICT OF INTEREST: None

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