A Rare Case of Severe Hepatitis: Non Typhoidal Salmonella

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Introduction

- Non-typhoidal salmonella (NTS) are food borne pathogens that often result in self-limited gastroenteritis.
- Derangements in transaminases, indicative of acute hepatitis are seen in 1% to 26% of enteric fever cases caused by salmonella typhi and paratyphi species.
- There have been very few case reports of hepatitis in non-typhoidal species.
- We present a case of a young man with severe gastroenteritis and elevated liver enzymes, found to have non typhoidal salmonella enteritis, hepatitis, and bacteremia.

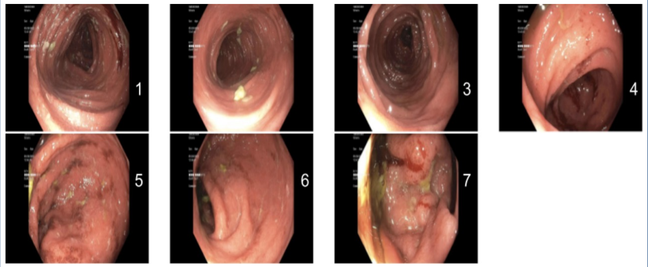
Case Presentation

- We report a 33-year-old man who presented to our emergency department with 1 week of nonbilious, non-bloody emesis with associated green watery diarrhea. He reported eating at a buffet in Jamaica one week prior, with his family having similar, yet milder symptoms.
- Physical exam was notable for scleral icterus and diffuse abdominal tenderness. CT of the abdomen and pelvis was unremarkable.
- Viral hepatitis serology was negative for hepatitis A IgM, Hepatitis B immune, Hepatitis C, Hepatitis E IgM and IgG negative. Trends of the patient's liver panel can be seen in table 1. Serum markers of autoimmune hepatitis were also negative.
- EGD and colonoscopy were performed on day 4 due to persistent symptoms which showed gastritis as well as inflammation throughout the colon. Stool PCR resulted positive for Salmonella enterica on day 4 of hospitalization despite two negative stool cultures.
- He was started on Ceftriaxone as blood cultures revealed pan-sensitive group D salmonella bacteremia. He was discharged home to complete a 14-day course of antibiotics with levofloxacin 500mg.

Table 1

	Day 1	Day 4	Day 7	Day 16
AST (unit/L)	253	258	712	155
ALT (unit/L)	276	454	1,593	569
ALP (unit/L)	74	68	130	109
Total Bilirubin (mg/dL)	1.2	1.0	1.5	0.9
Direct Bilirubin (mg/dL)	0.7	0.6	-	-

AST = Aspartate transaminase, ALT = Alanine Aminotransferase, ALP = Alkaline phosphatase



Colonoscopy demonstrating scattered moderate inflammation characterized by altered vascularity, congestion (edema), erythema, friability, loss of vascularity and serpentine ulcerations was found in the transverse colon (1,2), splenic flexure (3), descending colon (4,5), sigmoid colon (6), and rectum (7)

Discussion

- Salmonella hepatitis is a rare, yet well documented complication of typhoid salmonella and is hypothesized to occur due to direct invasion of the organism or endotoxin mediated immune liver injury.
- Salmonella hepatitis can often mimic viral hepatitis. An admission ALT/LDH ratio is a good discriminator between both entities. A ratio greater than 9 can demonstrate viral hepatitis, while less than 9 can be seen in typhoid hepatitis.
- Our patient is unique in that he demonstrated salmonella hepatitis with the non-typhoid serotype.
- We conclude that non-typhoid salmonella may have the same capacity for hepatic injury as does typhoid salmonella likely through a similar mechanism and should be suspected as the cause of hepatitis when other sources are ruled out in patients infected with salmonella enterica.

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