Cholestatic hepatitis in a patient with typhoid fever – a case report

E.C. Ratnayake, C. Shivanthan, B.C. Wijesiriwardena

National Hospital of Sri Lanka, Colombo, Sri Lanka.

To the Editor,

Typhoid fever is known to cause a wide range of hepatic complications (1). However, cholestasis secondary to typhoid fever has been reported only in a very few instances (2,3). We recently came across a young patient who presented with fever and jaundice and found to have cholestatic hepatitis secondary to typhoid fever.

He was a 33 year old male who sought hospital care after anorexia, and fever for 10 days followed by a vague right hypochondrial discomfort, vomiting and jaundice for 3 days duration with dark urine with some reduction in the output. There was an associated diarrhea with yellow stools. He did not complain of pruritus. He did not give a contact history with muddy water and denied blood transfusions, promiscuity or intravenous drug abuse. Examination revealed an ill looking patient with deep icterus with mild dehydration but without any scratch marks. He had no stigmata of chronic liver disease or evidence of encephalopathy. Fever was documented and no lymphadenopathy was detected. There was a tender firm hepatomegaly with a moderately enlarged soft spleen. The gall bladder was not palpable. Cardiovascular, respiratory and neurological examination was normal. The urine full report showed bile in the urine with normal levels of urobilinogen. Full blood count showed a borderline leucopaenia – $4.8 \times 10^3/\mu l$ with 51% neutrophils and 44% lymphocytes. The platelet count was $175 \times 10^3/\mu l$ and never dropped significantly during his hospital stay. The initial ESR was 35 mm/h and the CRP was elevated 96 mg/l. The blood picture showed only mild rouleaux formation. The liver biochemistry showed normal albumin levels with elevation of AST and ALT which were 120 units/l (Normal < 35) and 240 units/l (Normal < 45) respectively. The alkaline phosphatase was 1500 units/l (Normal < 350), indirect bilirubin was 1 mg/dl and the direct bilirubin was 10 mg/dl.

The ultrasound scan of the abdomen showed an enlarged liver at 17.5 cm with a coarse echo pattern and a markedly dilated gall bladder with normal wall thickness. The intra and extrahepatic bile ducts were not dilated nor were any calculi visualized. There was splenomegaly at 15.5 cm. The Letospira microscopic agglutination test was equivocal and hepatitis serology was negative for Hepatitis A, B and C. The Dengue IgG was positive in low titres however with a negative IgM. His blood culture yielded a growth of *Salmonella typhi* after 5 days incubation, with antibiotic sensitivity to Ciprofloxacin and Cefotaxime. He was started on IV Cefotaxime. Oral Azithromycin was also included as per local microbiology protocols. He demonstrated marked clinical improvement with defeverence in 48 hours and gradual resolution of jaundice and constitutional symptoms. The liver biochemistry done subsequently showed decline of cholestasis with improvement of transaminases.

Hepatic involvement of typhoid fever was reported by William Osler in 1899 (5). The pathophysiological mechanism by which salmonella produces hepatic dysfunction is either by direct invasion or by endotoxemia with immune mediated liver damage. The liver involvement can vary from mild elevation of aminotransferases and alkaline phosphatase to levels indistinguishable from acute viral hepatitis (3). A predominantly cholestatic picture however has been only documented in literature very rarely (2,3). The exact pathophysiology of cholestasis in preference to hepatitis needs in depth evaluation and tissue studies of patients with typhoid fever with hepatitis and cholestasis.

We conclude that, although rare, cholestatic hepatitis should be recognized as an associated manifestation of typhoid fever, especially in prevalent countries such as those in South Asia.

Acknowledgements

The authors thank the departments of microbiology and biochemistry at the National Hospital of Sri Lanka for providing help in diagnosing and managing the patient mentioned in the case report.

References

1. KHOSLA S.N., SINGH R., SINGH G.P., TREHAN V.K. The spectrum of hepatic injury in enteric fever. *Am. J. Gastroentrol.*, 1988, **83** : 413-16.
2. ARABACI F., IRMAK H., AKDENIZ H., DEMIRÖZ A.P. Jaundice with cholestasis : a case of typhoid hepatitis. *Turkish Journal of Infection*, 2003, **17** : 99-102.
3. ALBAYRAK A. *et al*. Cholestatic hepatitis due to *Salmonella typhi*. *Clinics and Practice*, 2011, volume 1 : e13.

Correspondence to : Ratnayake E.C, MBBS, Registrar in Medicine, Wards 45 and 46 A, National Hospital of Sri Lanka, Regent Street, Colombo, Sri Lanka. E-mail : chamara.ratnayake@gmail.com

Submission date : 09/08/2011
Acceptance date : 20/09/2011