
An uncommon complication of *Salmonella paratyphi A* infection

S Subasinghe¹ and J Indrakumar²

(Index words: Infective endocarditis, enteric fever, *Salmonella paratyphi*)

Introduction

Infective endocarditis (IE) is a rare complication of enteric fever. *Salmonella typhi* is the organism that causes enteric fever in most patients. Although IE due to *Salmonella typhi* has been reported [1,2] only four cases of IE due to *Salmonella paratyphi* have been documented [3-6]. Of these four cases, two were in the paediatric age group and one had a pre existing cardiac lesion. In Sri Lanka IE caused by *Salmonella typhi* has been reported [7] but not by *Salmonella paratyphi*. We report a case of an infective endocarditis due to *Salmonella paratyphi A* with full recovery after appropriate antibiotic treatment.

Case report

The patient was a 25-year old man admitted with intermittent fever of 10 days duration. He had been well until 10 days before when he developed fever. The fever was associated with chills, malaise, headache and body aches. He did not have any other symptoms attributable to specific organ system. On the third day of the fever he consulted a general practitioner and a 3-day course of antibiotics had been given. The fever persisted in spite of this treatment. He was already diagnosed to have a mitral valve prolapse with mitral regurgitation when he was

investigated for an incidental murmur one year ago. He had no significant illnesses in the past.

On admission he had high fever of 104°C. He was not pale or icteric. There were no signs of heart failure or evidence of any embolic phenomena. His pulse rate was 100 beats per minute and blood pressure was 100/70 mmHg. Cardiac examination revealed a grade 2 late systolic murmur over the apex and left lower sternal border consistent with a mitral valve prolapse. On abdominal examination he had a 3 cm, non-tender liver and a mild splenomegaly.

Laboratory tests showed an elevated white cell count of 17 000/mL with neutrophils of 73.5%; a haemoglobin level of 11.9 g/dl; an elevated ESR level (55 mm/1 hr) and raised AST and ALT of 86 and 87 IU/L respectively. Renal functions, urine full report, chest radiograph and abdominal ultrasound scan were normal. Transthoracic echocardiography showed definite vegetations on the anterior leaflet of the mitral valve and moderate mitral regurgitation. The ejection fraction was normal (60%). Of the three blood cultures taken on the second day only one yielded a growth of *Salmonella paratyphi A*. This organism found to be sensitive to ampicillin, cefotaxime, cotrimoxazole and chloramphenicol. Based on clinical and laboratory findings (vegetation on the mitral valve, fever, predisposing heart valve condition and microbiological

¹University Medical Unit, Colombo South Teaching Hospital, and ²Department of Medicine, Faculty of Medical Sciences, University of Sri Jayawardenepura, Sri Lanka.

Correspondence: JI, e-mail <sathrika@sltnet.lk>. Received 28 August and accepted 26 December 2009. Competing interests: none declared.

evidence) a diagnosis of infective endocarditis was made according to the modified Duke criteria [8]. Accordingly he had one major and 3 minor criteria to be categorised as definite IE.

Following the echocardiography the patient was started on benzyl penicillin (2.4g, 4 hourly) and gentamicin (80 mg, 12 hourly). His fever subsided 4 days after starting antibiotics and the splenomegaly which was evident clinically on admission regressed after one week. After 8 days of starting treatment benzyl penicillin was replaced by cefotaxime (1 g 8 hourly) based on the sensitivity tests of an unexpected growth of *Salmonella paratyphi A*. Three weeks after commencing treatment, echocardiography was repeated. The vegetation was almost cleared. After completing 3 weeks of intravenous antibiotics the patient was sent home on oral cefixime for one week.

Discussion

Enteric fever is one of the major causes of prolonged fever in patients admitted to hospitals in Sri Lanka [9]. The causative organisms are commonly *Salmonella typhi*, and less commonly *Salmonella paratyphi*. Both infective endocarditis and enteric fever are well recognised causes of prolonged fever. Although infective endocarditis is an extremely rare complication of paratyphoid fever it has a good prognosis if diagnosed early as a longer period of antibiotics (4 weeks) can be given instead of the 7-10 day course that is given for uncomplicated enteric fever. It is easy to miss an infection of the heart valves in patients

especially when they are already known to have a valve lesion such as the one we described here. Therefore IE must be considered in every patient with enteric fever who has an underlying heart valve disease as failure to do so can lead to irreversible cardiac complications.

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