

A case of *Salmonella paratyphi* endocarditis; a rare complication of paratyphoid fever

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Introduction

Enteric fever is a common and serious health problem in many regions of the world. The causative organisms are *Salmonella typhi* causing typhoid fever and *Salmonella paratyphi* causing paratyphoid fever, the latter being less common. Endocarditis is an uncommon complication of enteric fever. The most frequently observed species is *Salmonella typhi* (1-4). There are only five cases of endocarditis caused by *Salmonella paratyphi* reported in the literature (5-9). We report a case of an endocarditis caused by *Salmonella paratyphi* in a patient with apparently normal heart valves. Patient made a complete recovery after appropriate antibiotic therapy.

Case report

A 25-year old previously healthy man was admitted with a five day history of fever, constitutional symptoms, and diarrhea which appeared during the initial three days of the illness. There were no other specific symptoms in the history. On admission, he was febrile but the rest of the physical examination was unremarkable. No cardiac murmurs or splenomegaly was noted.

His initial lab tests were as follows:

Hb; 15.1g/dL, PCV; 43.5%, WBC; $5.5 \times 10^9/L$ (N-69%), Platelet; $136 \times 10^9/L$ which dropped to $95 \times 10^9/L$. AST; 54u/L, ALT; 76u/L, CRP; 5.3mg/dL, ESR; 12mm

He was initially managed as a case of dengue fever with a particular attention to fluid intake. Dengue IgM antibodies, however, were negative. He continued to have high fever spikes well into the second week of the illness, and further laboratory evaluation revealed the followings.

Malarial Antigen - Negative

SAT - *Salmonella typhi* 'H'- Negative 'O'- Negative

Salmonella paratyphi A 'H'- 1/20

Of the six sets of blood cultures sent, *Salmonella paratyphi* A was isolated from one sample. Trans-thoracic 2D-Echocardiogram revealed the possibility of a vegetation on the mitral valve. Trans-esophageal echocardiogram, later, showed a small vegetation on the tip of the anterior mitral valve leaflet. There was no valvular regurgitation. Ultra-sound scan of the abdomen revealed mild splenomegaly.

The diagnosis of salmonella paratyphi endocarditis was made and he was managed with IV ceftriaxone for four weeks and IV gentamicin was added during the first week. He made an uneventful recovery and the repeat trans-thoracic echocardiogram after 4 weeks showed that the vegetation had almost regressed. He was discharged on oral cefixime for two weeks.

Discussion

Enteric fever is suspected as a cause of prolonged fever in Sri Lanka. Endocarditis is an uncommon complication of enteric fever. There are only five cases of endocarditis caused by *Salmonella paratyphi* reported in the literature (table). All cases had been caused by *Salmonella paratyphi* A serotype and all showed definite vegetations in the endocardium.

In summary, though cardiac complications are rare in paratyphoid fever, the possibility of endocarditis must be considered in patients with underlying heart disease and even in patients with healthy hearts when the clinical presentation is unusual.

Table: Reported cases of endocarditis caused by *Salmonella paratyphi*

Year (Authors)	Age	Sex	Preexisting Disease	Involved Endocardium	Outcome
1975 (Johnson)	11 Months	Male	None	TV	Death
1994 (Gupta)	31 Years	Female	None	AV	Recovery
2002 (Pancharoen)	8 Years	Male	TOF	IVS	Recovery
2005 (Vaisbein)	24 Years	Male	None	AV	Recovery
2010 (Subasinghe)	25 Years	Male	MVP/MR	MV	Recovery
Our case	25 Years	Male	None	MV	Recovery

TOF- Tetralogy of Fallot, MVP- Mitral valve prolapse, MR- Mitral Regurgitation, TV- Tricuspid Valve, AV- Aortic Valve, IVS- Interventricular Septum, MV- Mitral Valve

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