Endocarditis caused by *Salmonella enteritidis*

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SUMMARY A case of endocarditis caused by *Salmonella enteritidis* is reported in a 20-year-old African woman. This is only the fourth published case. The development of this rare infection in the patient reported here probably resulted from a reduction in immunity caused by pregnancy and a past splenectomy.

Salmonella enteritidis is a relatively common bowel pathogen, but is an exceedingly rare cause of endocarditis. Only 3 cases have been previously recorded, and only one (an infected prosthesis) was absolutely proven by culture of vegetations. This paper records a further definite case involving infection of a rheumatically damaged mitral valve in an African woman.

Case report

During her first pregnancy a 20-year-old Zambian woman became ill with fever, vomiting, myalgia, and cough. Eight years previously she had undergone splenectomy for an obscure haemolytic anaemia. There were no other details available and she had remained well after operation. Examination disclosed a sick looking girl with a 24-week size uterus. She was moderately anaemic and icteric, and her temperature was 39°C. She also had signs of moderately severe pure mitral regurgitation, with left ventricular hypertrophy. Her liver was enlarged 5 cm but there were no other signs of heart failure. Investigations showed a haemoglobin of 9.4 g/dl, white cell count 37 400 mm³ (80% neutrophils), and a blood film revealed polychromasia, nucleated red cells, macrocytosis, and Howell-Jolly bodies. Repeated malarial slides were negative as was a Coombs test. Haemoglobin electrophoresis was AA, and glucose-6-phosphate dehydrogenase level was normal. Serum bilirubin was 117 µmol/l (reference range 1.7-17 µmol/l), with 92 µmol/l unconjugated and 25 µmol/l conjugated. Alkaline phosphatase and aspartate transaminase levels were normal. A high vaginal swab and stool culture were sterile, but blood and urine cultures grew *S. enteritidis*.

A diagnosis of rheumatic mitral regurgitation with acute endocarditis due to *S. enteritidis* was made. Because of the septicaemia and past splenectomy it was felt that no firm evaluation of the haemolytic anaemia could be made. Treatment was begun with parenteral gentamicin 240 mg/day, ampicillin 2 g/day, and chloramphenicol 2 g/day. Digoxin and diuretics were later added when signs of overt heart failure appeared. She slowly improved, and treatment was stopped 4 weeks later, though she still had a mild fever and anaemia. Her recovery was further complicated by premature labour, which was suppressed with sedation, bedrest, and salbutamol. Two months after her original presentation she suddenly deteriorated, developing a high swinging fever, increased anaemia, and severe heart failure. She died 2 days later in refractory heart failure, and 4 blood cultures taken before her death subsequently grew *S. enteritidis*.

At necropsy the mitral valve was found to be fibrosed and regurgitant with extensive vegetations, which grew *S. enteritidis* on culture.

Discussion

Endocarditis caused by *S. enteritidis* was first recorded by Saphra and Winter (1957) in their review of 7779 salmonella infections; but apart from the illness being fatal no other details were given. Yamamoto *et al.* (1974) reported a probable case in a woman with a mitral valve prosthesis, but though blood cultures were positive and the illness typical, the valve did not grow *S. enteritidis* when cultured after surgical removal. Both these reports were from North America, but the third case was from Britain and involved a man with a prosthetic aortic valve in whom *S. enteritidis* was isolated from blood cultures as well as the valve when it was removed *post mortem* (Shanson *et al.*, 1977).

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In the case reported here it was interesting that there was apparently no preceding bowel infection with *S. enteritidis*, which occurred in the reports of Yamamoto *et al.* (1974) and Shanson *et al.* (1977). Presumably the immuno-suppressant effects of pregnancy and splenectomy led to the development of this unusual infection, though the route of entry is obscure. Of the 4 cases now recorded only the patient of Yamamoto *et al.* (1974) survived, emphasising the seriousness of the condition. These workers used valve replacement with high dose parenteral ampicillin before and after operation. Shanson and his colleagues (1977) consider that the addition of mecillinam to this regimen provides the present optimum treatment.

References

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