

Letter to the Editor

In response to

Sathiakar Paul Collison, Naresh Trehan. Native double-valve endocarditis by *Mycobacterium fortuitum* following percutaneous coronary intervention. *J Heart Valve Dis* 2006;15:836-838

We read with interest the article by Collison SP and Trehan N (1) in the November 2006 issue of the *Journal of Heart Valve Disease*.

Although the patient was reported to have made an uneventful recovery and was discharged from the hospital, he presented to us on 13 October 2006, with several weeks' history of high-grade fever. He also had anemia and features of congestive heart failure. Three blood cultures were positive for a non-tuberculous mycobacterium which was identified as *Mycobacterium chelonae* on the basis of carbohydrate utilization and other standard mycobacterial tests such as aryl sulfatase, nitrate reduction, and iron uptake. Antimicrobial susceptibility tests were performed using the Clinical and Laboratory Standards Institute (CLSI) -recommended method of broth microdilution for routine growth medium (2). The isolate was susceptible to imipenem, clarithromycin, moxifloxacin, and amikacin. Transthoracic echocardiography revealed large vegetations on the mitral and aortic valves. Treatment with imipenem, clarithromycin, moxifloxacin, and amikacin was started. As the patient had recurrence of prosthetic valve endocarditis, persistent fever and persistent bacteremia, the causative organism was difficult to treat and the patient was hemodynamically unstable; thus, he was considered for repeat valve surgery. Coronary arteriography showed obstruction of the stent in the left anterior descending artery. We believed that this infection had originated with angioplasty and stent insertion, and had led to bacteremia which infected the mitral and aortic valves. It was considered not feasible to excise the segment of the left anterior descending artery bearing the stent. However, we considered that the antimicrobial agents would sterilize the possibly infected stent and so offered mitral and aortic valve replacement as the only hope of cure.

Mitral and aortic valve replacement with mechanical valves was undertaken and coronary artery bypass grafting performed. The patient developed a large left middle cerebral artery territory infarct soon after surgery, and remained hypotensive despite inotropic support and 'effective' antimicrobial treatment.

Unfortunately, the patient died at four weeks after surgery. A blood culture performed at three weeks after surgery was still positive for *M. chelonae*. The excised valve and vegetation revealed granulomatous inflammation with occasional acid-fast bacilli and *M. chelonae* on culture.

We wish to emphasize the following issues:

- Cultures performed for infective endocarditis should take into consideration fastidious and slow-growing organisms such as non-tuberculous mycobacteria.
- Species identification of non-tuberculous mycobacteria is required.
- Methods for susceptibility testing as approved by CLSI must be followed.
- Combination therapy is always necessary for non-tuberculous mycobacteria, for example with imipenem, clarithromycin, and moxifloxacin. Therapy should be administered for at least six months (3).
- Identification and resection of the focus of infection, and removal of all foreign material must be undertaken if this infection is to be cured (3).
- Good infection control practices to prevent such disastrous nosocomial infections should receive top priority.

References

1. Collison SP, Trehan N. Native double-valve endocarditis by *Mycobacterium fortuitum* following percutaneous coronary intervention. *J Heart Valve Dis* 2006;15:836-838
2. Woods GL, Brown-Elliott BA, Desmond EP, et al. Susceptibility testing of *Mycobacteria*, *Nocardia*, and other aerobic actinomycetes: Approved Standards, 2nd edn. NCCLS Publications, Vol. 20. NCCLS, Wayne, PA, 2003:M24A
3. Brouqui P, Raoult D. Endocarditis due to rare and fastidious bacteria. *Clin. Microbiol. Rev.* 2001;14:177-207

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Reply

We thank the readers for their interest in our case report (1). The records in this hospital reveal that the last visit of this patient was on 3rd September 2006. He was asymptomatic, afebrile and transthoracic echocardiography showed normally functioning prosthetic valves, good ventricular function and no evidence of endocarditis. He had received 3 months of both imipenam and ciprofloxacin and 2 months of intravenous amikacin, and antibiotics were stopped, on advice of our infectious department staff. The subsequent course of events as presented by Soman et al raise certain important issues, as discussed by them.

1. Was our diagnosis of *M Fortuitum* incorrect initially? Although the microbiological differentiation between the various species of atypical mycobacteria is somewhat standardized (2), as discussed in the discussion of our case report, molecular techniques are often needed to make a definite diagnosis.

2. Could this have been a case of mixed infection with atypical mycobacteria? This is known to happen occa-

sionally (3), although it is much more commonly associated with immunocompromised patients.

3. Was the duration of antibiotic therapy inadequate? Clearly this appears to be the case. The duration of therapy for life-threatening atypical mycobacterial infections has not been standardized. However, some recent authors have stressed that long term antibiotic therapy may be needed.

Reference

1. Collison S, Trehan N. Native Double-Valve Endocarditis by *Mycobacterium fortuitum* following Percutaneous Coronary Intervention. *J of Heart Valve Dis* 2006;15:836-838

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