

Case Report :

Infective endocarditis due to *Gemella morbillorum* complicating hypertrophic obstructive cardiomyopathy

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This report documents successful medical treatment of endocarditis caused by an infrequently encountered and recently renamed organism, occurring four weeks post-dental extraction in a patient with pre-existing hypertrophic obstructive cardiomyopathy.

CASE REPORT

A 29 year old woman with hypertrophic obstructive cardiomyopathy was admitted to hospital in July 1992 with a history of persistent lethargy. Three weeks previously she had suffered a flu-like illness with night sweats and dry cough. The sweats had subsided but she still felt unusually warm at night. A week prior to this episode she had developed a swollen and tender left knee which had quickly settled on a non-steroidal anti-inflammatory drug. Three months prior to admission extraction of two wisdom teeth had been performed under oral antibiotic prophylaxis: this had comprised three doses each of 3g amoxicillin; (1hr before, 3 and 18 hr post-operation). Recovery following this procedure had been uneventful. She had been taking propranolol 40mg four times a day to increase exercise tolerance, and thyroxine 50µg daily to induce shrinkage of a goitre. The day before admission her general practitioner had prescribed vitamin B₁₂ 1000µg and ofloxacin 400mg twice a day. On examination she had a small goitre, temperature 37.5°C, heart rate 100/min, blood pressure 90/60mmHg; there was a loud systolic murmur at the left sternal edge radiating to all areas. Dental examination was unremarkable. The erythrocyte sedimentation rate was 45 mm in the first hour, white cell count 8,200/µL. Electrocardiography showed marked left ventricular hypertrophy, and a trans-thoracic echocardiogram showed severe hypertrophic obstructive cardiomyopathy. No vegetations were seen.

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On the second day blood cultures grew an α -haemolytic, nutritionally variant gram-positive coccus growing in chains, requiring serum and vitamin supplements in order to grow; this was biochemically identified by the APISrep identification system (BioMerieux, France) as *Gemella morbillorum*. Empirical treatment was started with intravenous benzylpenicillin 1.2g four times a day, and gentamicin 80mg three times a day. Both the minimum inhibitory concentration and the minimum bactericidal concentration of penicillin for the organism were subsequently shown to be less than 0.06 μ g/ml. The pyrexia resolved after four days. At this stage serological tests for Q fever, chlamydia, adenovirus, mycoplasma, legionella and brucella infection were reported to be negative. During the second week the patient gradually became lethargic, the erythrocyte sedimentation rate rose to 110mm in the first hour, her temperature rose to 38°C and a self-limiting left elbow arthralgia developed. She was thought to have become sensitised to penicillin and towards the end of the third week of treatment antibiotics were changed to oral erythromycin 500mg four times a day and oral rifampicin 900mg per day. The minimum inhibitory concentrations of the isolate were <0.25 and <0.5 μ g/ml respectively and in each case the minimum bactericidal concentration was equal to the minimum inhibitory concentration. Two days later her temperature had settled again. On day 26 a generalised itchy erythematous maculopapular rash developed which settled within 24 hours on oral chlorpheniramine. Treatment continued for a total of six weeks after which she was discharged. She remains clinically well to date.

DISCUSSION

Infective endocarditis is a rare complication of hypertrophic obstructive cardiomyopathy. Sixty-one cases were reported between 1961 and 1990.¹ The overall mortality rate of infective endocarditis associated with hypertrophic obstructive cardiomyopathy is reported as 39%, compared to 20-30% for other forms of endocarditis.^{2,3} Antibiotic prophylaxis is given for dental or other procedures which may cause bacteraemia in patients with underlying heart disease predisposing to endocarditis.

The British Society for Antimicrobial Chemotherapy recommendations for oral antibiotic prophylaxis for patients who are not allergic to penicillin and who undergo general anaesthesia for a dental procedure are 3g amoxycillin orally four hours before anaesthesia followed by a further 3g as soon as possible afterwards.⁴ *Gemella morbillorum*, formerly known as *Streptococcus morbillorum*,⁵ is an anaerobic to aerotolerant gram-positive coccus whose taxonomic position has been uncertain. The natural habitat of the organism is the human intestinal tract. It is a rare but important pathogen and has been associated with endocarditis and suppurative infections.⁶ As the dental antibiotic prophylaxis given in this case can be considered adequate, and the causative organism was fully sensitive to penicillin, infective endocarditis may have resulted from a spontaneous bacteraemia of gastro-intestinal origin occurring at a different time from the dental extraction; most cases of infective endocarditis follow seemingly 'spontaneous' bacteraemia⁷. This case illustrates the unpredictable nature of bacteraemia which may result in infective endocarditis in predisposed individuals, and underlines the role of hypertrophic obstructive cardiomyopathy as a risk factor.

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