

Case of Triple Endocarditis Caused by *Rothia dentocariosa* and Results of a Survey in France

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This is the first case of endocarditis in which *Rothia dentocariosa* was cultured from three affected valves. In addition, the records of two microbiology laboratories in France showed that *R. dentocariosa* was rarely involved in severe infection and that positive blood cultures were not associated with endocarditis.

Rothia dentocariosa is a gram-positive bacterium that can normally be found in the human oral cavity. We report the first case of endocarditis in which *R. dentocariosa* was cultured from the affected valves. To gauge the importance of *R. dentocariosa* infection in humans, we reviewed the records of *R. dentocariosa*-positive cultures from two centers in France.

Case report. A 37-year-old man with persistent fever, anorexia, and shortness of breath was admitted to the referring hospital. He gave no history of congenital, familial, or acquired heart disease. His alcohol consumption was substantial: three liters of beer and two liters of wine a day. He denied intravenous drug abuse.

On physical examination, his temperature was 39.5°C, his pulse was 120/min, his blood pressure was 125/40 mm Hg, and a pansystolic murmur was present. The liver was enlarged, but there were no cutaneous stigmata of chronic liver disease. Several carious teeth were noted.

Transesophageal echocardiography demonstrated mitral, aortic, and tricuspid regurgitation with large vegetations on the tricuspid and aortic valves. An abdominal ultrasound scan revealed a 7-cm mass in the liver, a biopsy of which revealed a well-differentiated carcinoma; microbiological study results were negative. The alpha-fetoprotein level in his serum was significantly elevated, and he was positive for hepatitis B surface antigen and negative for human immunodeficiency virus.

The patient's hemodynamic status deteriorated despite medical therapy, and he was transferred to another hospital for emergency replacement of the three affected valves. A large, raspberry-size vegetation was attached to the atrial surface of the anterior mitral valve leaflet. Vegetations were found on all three cusps of the tricuspid valve and on the aortic valve prolapsing into the left ventricle. Histological examination of the resected aortic and tricuspid valves found numerous cocci, mostly staining gram positive. Blood cultures performed preoperatively and culture of the three valves were initially negative. Samples of the valves were sent to the Institut Pasteur (Paris, France) for further investigation, and 14 days later, *R. dentocariosa* was cultured from all three valves.

On solid media, *R. dentocariosa* forms dry and crumbly colonies. Morphologically, it appeared as ramified filaments, rods, and coccoid forms. Its cultural and biochemical characteristics

were tested at 37°C. The organism gave positive reactions for catalase, nitrite and nitrate, esculin, the *o*-nitrophenyl- β -D-galactopyranoside test, and Dnase; negative reactions were obtained for urease, indole, Tween 80-esterase, and starch hydrolysis. It fermented glycerol, D-glucose, D-fructose, D-mannose, α -methyl-D-glucoside, arbutin, esculin, salicin, sucrose, trehalose, melezitose, D-turanose, and L-arabitol. Lactic acid was the major metabolic product, whereas acetic acid and succinic acid were minor metabolic products. Disk diffusion susceptibility testing demonstrated sensitivity to penicillin, amoxicillin, imipenem, erythromycin, spiramycin, and rifampin. It was resistant to tobramycin, gentamicin, doxycycline, pristinamycin, sulfonamide, and pefloxacin.

Postoperative antibiotic treatment was continued with netilmicin and metronidazole for 3 weeks and with amoxicillin for 6 weeks. Two months later, the patient underwent a successful partial hepatectomy for hepatic carcinoma.

Positive cultures of *R. dentocariosa* in human infections in France. To explore the significance of positive cultures of *R. dentocariosa*, we reviewed records covering a period of 8 years (1987 to 1995) from the Institut Pasteur (Paris) and the Institut de Bactériologie (Strasbourg)—two clinical microbiology laboratories with the most experience with this bacterium in France. Table 1 shows the total numbers and sources of positive cultures. *R. dentocariosa* was grown from oropharyngeal secretions and sputum most frequently but also from blood, heart valves (our case report), and other (miscellaneous) sites—ascitic fluid, urine, bone, a pubic aspirate, and eye, pleural, and joint effusions. Positive blood cultures were not associated with endocarditis or severe infection; one patient with positive blood cultures died from a noninfectious disease.

Discussion. The pathogenic potential of *R. dentocariosa* has been documented infrequently. Since 1969, not including references to periodontal disease, there have only been 14 publications in which human infections were attributed to *R. dentocariosa*. In the eight cases of native or prosthetic valve endocarditis (1, 2, 4–8, 9), the diagnosis was based on the association of clinical signs, a positive blood culture, and echocardiographic demonstration of vegetations. Emergency valve replacement surgery was performed on two patients, but *R. dentocariosa* could not be cultured from the affected valves (5, 8).

The patient in our case report had risk factors for endocarditis: the presence of multiple carious teeth and the coexistence of a hepatoma (3). In contrast to other reports of *R. dentocariosa* endocarditis, the bacterium was grown from all three affected valves. The diagnosis was suggested by identifi-

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TABLE 1. Sources of cultures positive for *R. dentocariosa* at two centers in France

Source(s)	IPP ^a	IBS ^b
Sputum and oropharyngeal secretions	18	45
Blood	8	11
Bronchoalveolar lavage or bronchial aspirate	0	6
Heart valves (our case report)	1	0
Miscellaneous (see text)	10	4
Total	37	66

^a IBS, Institut de Bactériologie, Université Louis Pasteur, Strasbourg, France.

^b IPP, Institut Pasteur, Paris, France.

cation of the organism on microscopy and confirmed subsequently by extensive biochemical tests.

The records from two microbiology laboratories in France showed that *R. dentocariosa* was rarely involved in severe infection. Positive blood cultures were uncommon, were not associated with endocarditis, and appeared to be due to transient bacteremia.

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