

## Isolation of *Shewanella putrefaciens* from a Rheumatic Heart Disease Patient with Infective Endocarditis

*Shewanella putrefaciens* is a gram-negative bacillus belonging to the family *Vibrionaceae* (7). It is widely distributed in nature; its natural habitats are water and soil (11). This organism has rarely been isolated from clinical material. We report here a case of bacteremia with *S. putrefaciens* in a rheumatic heart disease patient with infective endocarditis in which an etiological association was made due to the organism's isolation twice from blood and echocardiographic evidence of a vegetation on the anterior mitral leaflet.

An immunocompetent 24-year-old female with rheumatic heart disease and mitral and aortic valve insufficiency presented with high-grade fever of 15 days' duration. On examination of the patient, no evidence of congestive heart failure was found.

Two complete sets (one aerobic and one anaerobic culture bottle each) of blood for cultures were collected at an interval of 30 min for aerobic and anaerobic bacterial isolation. *S. putrefaciens* and *Streptococcus viridans* were isolated from both sets of blood culture bottles after 24 h of aerobic incubation. No anaerobic organisms were isolated.

*S. putrefaciens* was identified by its biochemical reactions at 24 h (5). This organism produced nonhemolytic tan colonies on 5% sheep blood agar. Salmon pink colonies were seen on MacConkey agar. The organism was motile and produced hydrogen sulfide on triple sugar iron agar. It was positive for ornithine decarboxylase, gelatin, oxidase, and citrate. It failed to ferment sugars and was negative for *O*-nitrophenyl- $\beta$ -galactase, arginine decarboxylase, lysine decarboxylase, tryptophan deaminase, and indole and in the Voges-Proskauer test. Identification of the isolate as *S. putrefaciens* was confirmed by the API 20E system (bioMerieux Vitek, Inc., Hazelwood, Mo.). In a standard Kirby-Bauer sensitivity test (8), the organism was sensitive to amikacin, gentamicin, cefotaxime, and piperacillin.

Echocardiography revealed the presence of a vegetation on the anterior mitral leaflet, thus confirming the diagnosis of infective endocarditis. Treatment with parenteral gentamicin and penicillin was begun and continued for 3 weeks. The patient improved once the treatment was started and was discharged at the end of the treatment period.

Viridans streptococci are the most common infectious agents in subacute bacterial endocarditis and may occasionally be accompanied by other bacteria (2), as was seen in this case. Infections due to *S. putrefaciens* include chronic leg ulcers (1), infections of the ear (10), abscesses (12), and septicemia (4, 6, 9).

The possible risk factors for bloodstream infection by *S. putrefaciens* are (i) prematurity and congenital pneumonia, (ii)

ulceration of the lower extremities, and (iii) an underlying debility (3). In our patient, the source of infection could not be documented.

A high incidence of polymicrobial bacteremia with *S. putrefaciens* has been reported (3, 4, 6), as was observed in our case. The association of *S. putrefaciens* with subacute bacterial endocarditis in an immunocompetent patient further extends the clinical spectrum of this opportunistic pathogen.

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