Association of Gemella morbillorum Endocarditis with Adenomatous Polyps and Carcinoma of the Colon: Case Report and Review

Gemella morbillorum has been recently transferred from the genus Streptococcus to the genus Gemella. It is considered a commensal bacterium and has been implicated as a causative agent of endocarditis [1–4], septicemia [5], meningitis [6], and arthritis [7]. Infective endocarditis has been reported as the most frequent infection caused by G. morbillorum [8]. After a MEDLINE search of the literature, we found no report of G. morbillorum endocarditis associated with carcinoma of the colon, as has been described for Streptococcus bovis. To our knowledge, this is the first well-documented case of multiple native valve endocarditis caused by G. morbillorum that was associated with carcinoma of the colon.

A 73-year-old woman was admitted to our hospital with a 3-month history of asthenia, anorexia, malaise, fever, and weight loss. Physical examination revealed splenomegaly and a systolic murmur at the apex of the heart and the left sternal border. Laboratory studies disclosed the following values: hemoglobin, 8.7 g/dL; hematocrit, 27%; WBCs, 3,700/mm^3 (70% neutrophils); platelets, 97,000/mm^3; and erythrocyte sedimentation rate, 115 mm/h. A presumptive diagnosis of infective endocarditis was made, and after nine specimens of blood for culture were drawn over several days, she was empirically treated with iv benzyl penicillin (12 million units per day in divided doses at 4-hour intervals for 1 month) and gentamicin (1 mg/kg every 8 hours for 2 weeks).

Cultures of three separate blood specimens drawn over 48 hours yielded gram-positive cocci. The isolated organism was identified as G. morbillorum by the MicroScan System (Baxter Diagnostics, MicroScan Division, West Sacramento, CA). Microtiter dilution testing (Dried MicroScan Panels Pos Combo type 41; Baxter Diagnostics, Deerfield, IL) revealed the following MICs: penicillin, <0.06 μg/mL; vancomycin, <1 μg/mL; and gentamicin, <1 μg/mL. MBCs were not determined. A transthoracic echocardiogram showed severe insufficiency of the aortic and mitral valves, with a slight vegetation on the mitral valve. Transesophageal echocardiography confirmed the presence of vegetations on the mitral valve, with disruption of the valve cords and revealed several aortic vegetations with leaflet disruption. Colonoscopy showed two adenomatous polyps with mild dysplasia in the rectum and adenocarcinoma in situ in the transverse colon.

The patient's condition improved clinically after antibiotic treatment was started, and cultures of blood drawn after completion of benzyl penicillin therapy were negative. She underwent valve replacement surgery because of severe insufficiency of multiple valves and died 1 week after cardiac surgery of refractory cardiac insufficiency. Histologic examination of the removed valves showed evidence of endocarditis. Culture of a tissue specimen was negative for bacteria; gram staining of the tissue was not done.

This case illustrates the association of G. morbillorum endocarditis with carcinoma of the colon and the serious course of an apparently mild infection despite adequate antibiotic therapy. Infections caused by Gemella species are uncommon in humans. G. morbillorum was transferred from the genus Streptococcus to the genus Gemella in 1988 on the basis of DNA homology [9]. It is part of the commensal flora of the mouth, gastrointestinal tract, and genitourinary tract in humans. Endocarditis is the most frequent infection caused by G. morbillorum; in most cases, the course is subacute, and there is significant underlying valve disease. Our patient's infection had a subacute onset, and she had no previous valvular abnormality; however, she finally underwent valvular replacement surgery because of serious damage to multiple valves.

Dental instrumentation is usually the likely source of infection [8]. Some diagnostic procedures in the gastrointestinal tract as well as colonic malignancies have been implicated as sources of bacteremia in patients with infective endocarditis caused by enterococci, Enterobacteriaceae, and, especially, S. bovis. Maxwell [10] reported that previous anal surgery was the likely gastrointestinal source of bacteremia in a case of G. morbillorum endocarditis. We report the first case of G. morbillorum endocarditis associated with carcinoma of the colon. There have been many reports linking S. bovis endocarditis with colonic carcinoma. It is not clear how colorectal cancer predisposes to an increased risk of enterogenous infection by some bacteria such as S. bovis. G. morbillorum is another commensal bacterium of the gastrointestinal tract, and, in certain circumstances, colonic carcinoma might also serve as a portal of entry.

Most G. morbillorum isolates tested have been highly susceptible to penicillin, and synergy has been demonstrated with combination therapy with gentamicin and penicillin or vancomycin. Relative resistance of some strains of G. morbillorum to penicillin has been rarely reported [2, 10]. On the basis of these findings, we recommend combination therapy with penicillin and gentamicin for endocarditis caused by viridans streptococci.

This case suggests that patients with G. morbillorum endocarditis who have no other source of bacteremia should undergo a workup to exclude a colonic neoplasm. In addition, patients with G. morbillorum endocarditis should be closely followed up because some may need cardiac surgery despite an apparently mild infection.

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References
Late Failure of Surgical Treatment for Bioprosthetic Valve Endocarditis Due to Candida tropicalis

Late treatment failures may occur after surgical treatment of endocarditis due to Candida species [1, 2] and Pseudomonas species [3]. This finding suggests that cure should not be assumed until long-term follow-up has been completed. Failures occurring from 9 months [1] to 7 years [2] after surgical treatment have been reported for intravenous drug users, and such failures have occurred after 6 months in patients who did not use intravenous drugs [1]. We report a case of Candida tropicalis endocarditis in a patient who was not an intravenous drug user; this patient had a probable relapse 44 months after surgery.

A 50-year-old man with chronic rheumatic valvular disease underwent aortic valvuloplasty and mitral valve replacement with a bovine pericardial bioprosthesis. Routine culture of the implanted prosthesis was sterile. After the operation, mild aortic insufficiency was noted; fever, pericardial and pleural friction rubs, and atrial fibrillation ensued. The diagnosis of postpericardiotomy syndrome was made, and treatment with indomethacin (150 mg daily) was initiated. The patient defervesced and was discharged.

The fever relapsed after therapy with indomethacin was discontinued, and the patient was readmitted to the hospital 73 days after discharge (81 days after surgery). On physical examination, aortic insufficiency and splenomegaly were observed. Findings on an echocardiogram were suggestive of vegetations on the prosthesis. After blood for cultures was drawn, therapy with penicillin and streptomycin was started; however, seven of eight sets of blood cultures later yielded C. tropicalis. Antibiotic therapy was changed to that with amphotericin B, and the patient underwent surgery 2 days later. At surgery, rupture of the bioprosthesis and vegetations on the atrial surface of the leaflets were detected; however, there was no involvement of the mitral annulus, and aortic valve insufficiency without endocarditis was noted. The bioprosthesis and the valve were replaced with two bovine pericardial prostheses. Culture of the excised prosthesis yielded Candida species, although culture of the aortic valve was sterile. Histologic examination of sections of the prosthesis revealed numerous hyphae and spores compatible with a Candida species. A total dose of 2.1 g of amphotericin B (50 mg/d) was administered over 6 weeks. The patient was discharged on the 59th postoperative day, and no evidence of metastatic infection was detected on follow-up.

Forty-four months after the surgery was performed, the patient was readmitted to the hospital because of a fever of 3 days' duration. On examination, regurgitation was present in both the aortic and mitral bioprostheses; hepatosplenomegaly and petechiae in the conjunctivae, arms, and legs were also noted. Five of five blood cultures yielded C. tropicalis, and an echocardiogram disclosed vegetations on the aortic prosthesis. Treatment with amphotericin B was started, and the patient again underwent surgery 11 days after this admission. At surgery, there were vegetations on the aortic and mitral prostheses that did not affect the sewing rings. The prostheses were removed, and two bovine pericardial bioprostheses were inserted. Routine cultures of the inserted prostheses were sterile. Histologic sections of the excised aortic prosthesis revealed hyphae suggestive of Candida species. The patient developed septic shock and died within the first 24 hours after surgery. Necropsy revealed encephalitis, CNS abscesses, membranoproliferative glomerulonephritis, and acute splenitis.

The actuarial risk of infective endocarditis following open heart surgery ranges from 3.3% [4] to 5.7% [5]. In one series, fungal endocarditis occurred in 5 (4.3%) of 116 patients who had undergone this procedure [6]. Candida species and Aspergillus species are the most common fungi that cause prosthetic valve endocarditis [4, 7], and in most series, the survival rate is poor [8]. The use of fluconazole in addition to amphotericin B and surgery, which is mandatory, has led to long-term suppression of the infection in a few patients [9]; new formulations of amphotericin B may be useful in the future [10].

Late treatment failures have been reported in cases of fungal and bacterial endocarditis [1–3]; most of these failures have occurred in drug abusers a few months after administration of antimicrobial therapy [7]. Hence, it has been suggested that a 2-year follow-up period be completed before reporting cures in cases of fungal endocarditis [1]. Our patient’s case reemphasizes the fact that cure cannot be confidently assumed for some patients with candidal endocarditis and that the possibility of relapse may extend far (e.g., 44 months) beyond this 2-year follow-up period.

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