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Letter to the Editor

Streptococcus sanguis bacteremia complicating endocarditis associated with colonic adenocarcinoma



Dear Editor,

Streptococcus bovis bacteremia is well known to be associated with colorectal tumor. But most physicians are unaware of the association between *Streptococcus sanguis* bacteremia and colorectal malignancy.^{1–3} In this case report, we highlight this association and discuss a case of *Streptococcus sanguis* bacteremia complicating endocarditis associated with a late stage invasive colonic adenocarcinoma.

A 54-year-old male patient has no underlying disease previously. He suffered from intermittently low grade fever, general malaise and body weight loss 6 Kg in recent 2 months. He also complained of bowel habits change and passage of bloody stool in recent two weeks. He visited outpatient clinic of colorectal surgery and the laboratory data showed severe anemia (Hemoglobin: 4.7 g/dL). So he received the examination of colonoscopy, which showed a huge mass lesion of descending colon (Fig. 1A). Biopsy confirmed infiltrating adenocarcinoma and the abdominal CT scan revealed a 10 cm fungating tumor with regional lymph node metastasis (stage III, T3N2M0). He was admitted to ward for preparedness of operation for colonic cancer. On admission, the physical examination revealed a grade II systolic heart murmur over apex, and the body temperature was 38.4 °C. So he received transesophageal echocardiography (TEE), which showed a 2 cm large vegetation attached to the mitral leaflet (Fig. 1B). Three sets of blood cultures grew *S. sanguis*. The isolate was identified as *S. sanguis* by conventional method and Phoenix NID card (Becton Dickinson, Diagnostic Systems, Sparks, MD, USA). The isolate was further analyzed by matrix-assisted laser desorption ionization-time of flight mass spectrometry (MALDI-TOF) using Bruker Biotyper (Bruker Daltonik GmbH, Bremen, Germany) and identified as *S. sanguis* (score value, 2.17). The susceptibility test revealed that this organism was all sensitive to penicillin (≤ 0.03 mg/L), amoxicillin (≤ 0.25 mg/L), cefotaxime

(≤ 0.5 mg/L), vancomycin (≤ 0.5 mg/L), levofloxacin (≤ 0.5 mg/L), erythromycin (≤ 0.06 mg/L), clindamycin (≤ 0.03 mg/L), and linezolid (≤ 1 mg/L). Assessment of the oral cavity revealed no dental caries. He received surgical repair of the mitral valve and a complete course of 4 weeks antibiotic therapy (ampicillin 2 g plus cefotaxime 2 g intravenously drip q 6 h). Repeated blood cultures were negative. He received surgical resection of colonic adenocarcinoma one month later and outpatient clinic followed up after discharge.

S. sanguis, an α -hemolytic gram positive coccus, is normally resident in oral cavity and occasionally in gastrointestinal tract.¹ Few previous reports suggest an association between *S. sanguis* bacteremia and colonic malignancy.^{1–3} Review of literature, the time interval between bacteremia and discovery of the colonic malignancy may range from days to several months following *S. sanguis* or *S. bovis* endocarditis or bacteremia.^{1,3} In our patient, the low grade fever persisted 2 months before the colonic adenocarcinoma was found. It is presumed that *S. sanguis* entered the blood via ulcerated tumor or colon, and an ulcerating colonic malignancy may allow the bacteria to penetrate the bloodstream with subsequent endocarditis. *S. viridans* is the most common cause of native valve endocarditis, and followed by staphylococcus spp, gram negative bacilli, and HACEK group.⁴ Most of the streptococcus endocarditis can be successfully treated by antibiotics only. But Lee reported that some *Streptococcus* spp had macrolide and quinolones resistant in recent years in Taiwan.^{5,6} The antibiotic susceptibility test of this isolate of our patient was sensitive to quinolone, macrolide and penicillin. For successful treatment of infective endocarditis complicating rupture of corda tendon and large vegetation, our patient not only received antibiotic therapy, he needed to perform cardiac surgery for removal of vegetation and combined antibiotic therapy.

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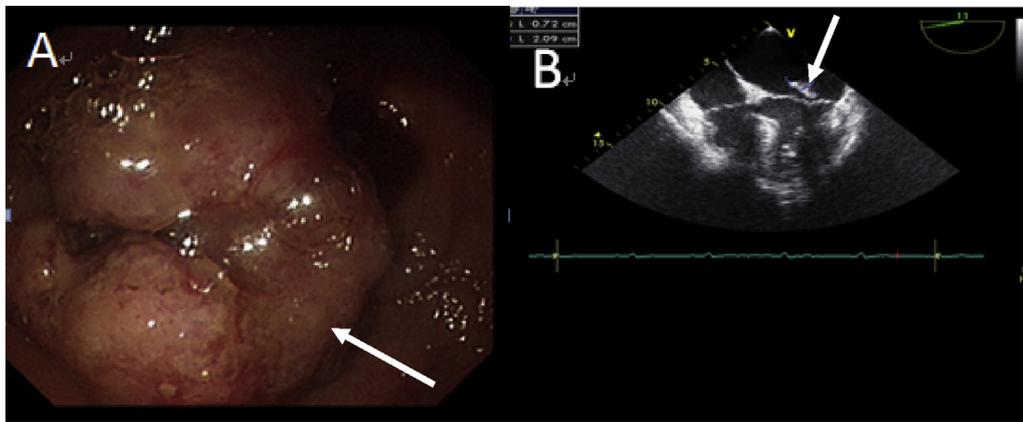


Figure 1. (A) The colonoscopy revealed a huge fungating mass (white arrowhead) at the descending colon (B) The transesophageal echocardiography (TEE) showed a 2 cm in diameter vegetation (white arrowhead) on the mitral valve leaflet.

In conclusion, this report suggests that patients with streptococcal bacteremia or endocarditis, particularly caused by unusual subspecies (e.g., *S. sanguis*, or *S. bovis*) should perform colonic examination. A strong clinical suspicion of occult gastrointestinal malignancy is recommended for such patients.

Conflicts of interest

All authors have no conflicts of interest to declare.

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