

CASE REPORT

Mesenteric ischemia as an unusual cause of *Streptococcus bovis* bacteremia in the absence of endocarditis or colorectal neoplasm

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Abstract

Streptococcus bovis bacteremia is nearly always pathological and has been associated with colorectal cancer and endocarditis. Here, we present the first published case of *S. bovis* bacteremia secondary to acute mesenteric ischemia. This case illustrates the typical presentation of acute mesenteric ischemia with an atypical consequence of *S. bovis* bacteremia, as well as the diagnostic evaluations and management options.

Introduction

Acute mesenteric ischemia is a rare but serious presentation accountable for 1% of hospitalized patients who present with acute abdominal pain and 0.1% of all emergency department visits,¹ but the mortality rate is up to 80%.² *Streptococcus bovis* (*S. bovis*) bacteremia is a rare cause of bacteremia, accounting for <1% of blood culture isolates of in-hospital blood stream infections, but it has high virulence, with mortality rate ranging from 26 to 70%.³ *S. bovis* bacteremia has been associated with colorectal malignancy, endocarditis, and hepatic dysfunction.^{3,4} Here, we present the first published case of *S. bovis* bacteremia secondary to acute mesenteric ischemia.

Case presentation

A 65-year-old Caucasian man presented to the emergency department with acute hematochezia, left upper quadrant abdominal pain, nausea, and vomiting. Physical examination was notable for hypotension (78/41 mmHg), tachycardia (101 beats/min), and a diffusely tender abdomen without peritoneal signs. One month prior to presentation, he had a non-ST elevation myocardial infarction (NSTEMI), and it was managed with percutaneous coronary intervention with the placement of a drug-eluting stent and initiation of clopidogrel and aspirin. His past medical history includes small bowel ischemia with gangrene secondary to omental infarction (surgically managed by resection of necrotic

omentum, midjejunum, and ileum), islet cell tumor (surgically managed by distal pancreatectomy and splenectomy), insulin-dependent type 2 diabetes mellitus, and stage 3 chronic kidney disease.

Diagnostic evaluation was notable for anemia (hemoglobin 8.6 g/dL, hematocrit 27.9%), leukocytosis (white blood cell 21.5×10^9 cells/L), thrombocytosis (platelets 879×10^9 cells/L), elevated creatinine of 2.9 mg/dL (baseline 1.9–2.1 mg/dL), and lactic acidosis (lactate 3.5 mmol/L). Blood cultures obtained on admission were positive for high-grade *S. bovis* (in three out of three bottles) after 11 h of incubation.

Computed tomography of the abdomen and pelvis demonstrated scattered areas of bowel wall thickening and prominent loops of jejunum consistent with small bowel ischemia (Fig. 1). Transesophageal echocardiogram (TEE) was negative for valvular vegetation. Diagnostic colonoscopy demonstrated diverticulosis in the sigmoid colon and descending colon and three 3–4 mm benign-appearing polyps at the rectosigmoid colon and at the hepatic flexure (not removed due to anticoagulation).

For management of acute mesenteric ischemia without bowel necrosis and *S. bovis* bacteremia, he was treated medically with intravenous (IV) fluids, bowel rest, analgesics, and a 14-day course of ceftriaxone and 7-day course of metronidazole (prophylaxis for intra-abdominal infections). He was discharged home in stable condition on hospital day 5. Subsequently, blood cultures collected 8 weeks later was negative for bacterial growth.

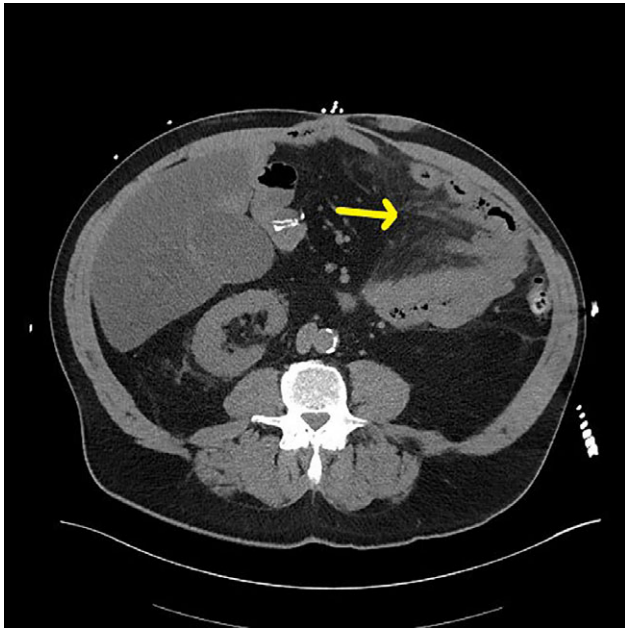


Figure 1 Computed tomography of the abdomen and pelvis: a prominent loop of jejunum with thickened bowel walls and inflammatory changes in the surrounding omentum (yellow arrow).

Repeat colonoscopy 1 year later (after discontinuation of clopidogrel) again demonstrated three 3–4 mm benign-appearing polyps that were biopsied to be tubular adenomas; there was no evidence of colorectal cancers.

Discussion

This is the first reported case of *S. bovis* bacteremia associated with acute mesenteric ischemia in the absence of colorectal cancer or endocarditis. Although *S. bovis* is found in fecal samples of up to 2.5–15% of asymptomatic humans⁵ and 56% in patients with colon carcinoma,³ the presence of *S. bovis* in bloodstream isolates is nearly always pathological. The association between *S. bovis* bacteremia and colonic pathologies is thought to be bacterial translocation from the gut mucosa into blood stream due to the impairment of the gut–vascular barrier integrity.⁶ Well-studied and efficacious treatments include β -lactams (such as penicillin G, amoxicillin-clavulanate, and ceftriaxone) and vancomycin for a 2–4-week course.⁷

Acute mesenteric ischemia is a medical emergency that carries high mortality rates of up to 80%² despite the technological

advances in the past two decades to accurately and rapidly diagnose this condition.⁸ Only one-third of patients present with the classic triad of abdominal pain, fever, and bloody stools.⁹ On computed tomography, acute mesenteric ischemia appears as bowel wall thickening, most often to 8–9 mm (normal 3–5 mm); decreased bowel wall enhancement; and pneumatosis intestinalis in cases of transmural infarction.⁸ A high index of suspicion is necessary to initiate prompt treatment aimed at the restoration of blood flow and removal of nonviable necrotic bowel, if present.⁹

This case illustrates a previously unreported link between *S. bovis* bacteremia and acute mesenteric ischemia, which further strengthens the argument to pursue diagnostic evaluation for gastrointestinal pathologies in patients with *S. bovis* bacteremia.

Conclusion

Streptococcus bovis bacteremia may be associated with acute mesenteric ischemia in the absence of endocarditis or colorectal malignancy.

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