

# Abdominal Abscess and Septic Shock Secondary to *Yokenella regensburgei*

M Fill, J Stephens

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## Abstract

*Yokenella regensburgei* is an uncommon clinical isolate of the family Enterobacteriaceae. We report a case of septic shock with bacteremia, abdominal abscess and pneumonia with *Yokenella regensburgei*.

## INTRODUCTION

*Yokenella regensburgei*, formerly known as *Koserella trabulsii*, is a relatively rare clinical isolate. *Y. regensburgei* has been isolated from rather obscure locations in nature, including water sources (including well water) and the intestinal tracts of insects; yet has also been isolated from the upper respiratory tract, urine, feces and synovial fluid of humans. However, no direct mechanism of *Yokenella* transmission from a specific source to humans has been elicited.

## CASE REPORT

A 77-year-old male underwent esophagogastrectomy for esophageal adenocarcinoma. Pertinent medical history included atrial fibrillation, renal cancer, coronary artery disease, diabetes mellitus, gastroesophageal reflux disease, hypertension, dyslipidemia, and osteoarthritis. There was a remote history of tobacco use, but no alcohol use.

Post-operatively, the patient had to be reintubated for aspiration. The patient subsequently deteriorated and became septic. Cultures grew gram-negative rods from three sites: abdominal fluid via aspiration, blood (one of two) and sputum. CT scan revealed minimal air in the right posterior lung base, scattered free fluid in the abdomen and fluid adjacent to the left lobe of the liver consistent with abscess. Computerized laboratory identification (Microscan Walkaway Model 76SI, manufactured by Siemens) identified the gram-negative rods as *Yokenella regensburgei*. To ensure validity, computerized identification was repeated, and the specimen was visually reviewed to confirm biotyping and antibiotic sensitivities.

Pertinent labs included a red blood cell count of 3.38 mil/cm<sup>3</sup>, hemoglobin of 9.8 gm/dl, hematocrit of 29.4%, and platelet count of 119 K/cm<sup>3</sup>. White blood cell count was initially 15.6 K/cm<sup>3</sup>, peaked at 19.4 K/cm<sup>3</sup> and eventually stabilized to 10.7 K/cm<sup>3</sup>.

The patient was placed on piperacillin/tazobactam (MIC < 16), levofloxacin (MIC <2), linezolid, fluconazole and metronidazole. His hospital course was complicated by respiratory failure requiring tracheostomy, percutaneous drainage of the abdominal abscess and eventual transfer to a rehabilitation center. There was no evidence of anastomotic leak.

## DISCUSSION

One of the interesting aspects of this case concerns where and how this patient could have contracted *Yokenella* infection. In reviewing the brief amount of previously published literature on this topic, immune suppression seems to have played a role in human pathogenesis by *Yokenella*; and this patient was relatively immune suppressed due to his esophageal adenocarcinoma. In addition, although there was no anastomotic leak found following esophagogastrectomy, it is feasible that microscopic contamination from the GI tract could have occurred during surgery. Finally, this patient's multiple comorbidities, in combination with his age (77), and other risk factors (i.e. history of tobacco use) could have made him more susceptible to colonization and subsequent infection by this rare organism.

Although *Yokenella regensburgei* is a relatively rare gram negative bacterium, it is likely that newer computerized bacterial identification systems will allow *Yokenella*

infection to be identified more frequently. It is important that physicians and health care providers be familiar with the bacteria, its typical course of infection, and effective treatment options. It is also significant to note that since no direct mechanism of transmission has been elicited, it will be justifiably challenging for healthcare providers to control the spread of *Yokenella* infection and prevent initial transmission in potentially susceptible patient populations.

### References

1. Abbott SL, Janda JM: Isolation of *Yokenella regensburgei* ("*Koserella trabulsii*") from a patient with transient bacteremia and from a patient with a septic knee. *J Clin Microbiol*; 1994; 32:2854-2855.
2. Jachymek W, Niedziela P, Petersson C, Lugowski C, Czaja J, Kenne L: Structures of the O-specific polysaccharides from *Yokenella regensburgei* (*Koserella trabulsii*) strains PCM 2476, 2477, 2478, and 2494: high-resolution magic-angle spinning NMR investigation of the O-specific polysaccharides in native lipopolysaccharides and directly on the surface of living bacteria. *Biochemistry*; 1999; 38:11788-95.
3. Kosako Y, Sakazaki R, Yoshizaki E: *Yokenella regensburgei* gen. nov., sp. nov.: a new genus and species in the family Enterobacteriaceae. *Jpn J Med Sci Biol*; 1984; 37:117-24.
4. Stock I, Sherwood KJ, Wiedemann B: Antimicrobial susceptibility patterns, beta-lactamases, and biochemical identification of *Yokenella regensburgei* strains. *Diagn Microbiol Infect Dis*; 2004;48:5-15.

**Author Information**

**Mary-Margaret Anne Fill**

Department of Internal Medicine, Division of Infectious Disease, Mercer University School of Medicine

**Jeffrey Lee Stephens, M.D**

Department of Internal Medicine, Division of Infectious Disease, Mercer University School of Medicine