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Sepsis Secondary to *Rhizobium radiobacter* in an Immunocompetent Adult With Ascending Cholangitis: A Case Report

RONITH PATRICE F. JASMIN, M.D.[1] | GAMALIEL N. GARCIA, M.D., FPCP, FPSMID[1]
1 Department of Internal Medicine, Negros Oriental Provincial Hospital, Dumaguete City, Negros Oriental, Philippines

INTRODUCTION

Rhizobium radiobacter is a Gram-negative bacterium that is found in plants and agricultural soil. *R. radiobacter* infrequently affects humans, and most of infections develop in immunocompromised patients and those with indwelling catheters. Due to bacterium's low virulence and rarity in clinical settings, it is infrequently reported resulting in its low incidence globally. Based on the limited literature of *R. radiobacter,* acute cholangitis caused by this pathogen is rarely reported. Herein, we present a case of sepsis secondary to *R. radiobacter* in an immunocompetent adult with ascending cholangitis.

CASE REPORT

This is a case of a 41-year old male, Filipino, farmer, from Mabinay, Negros Oriental admitted for a 3-day history of right upper quadrant pain and jaundice. The patient has no known comorbidities, managed as a case of sepsis secondary to ascending cholangitis. Computed tomography of abdomen with contrast showed intrahepatic and extrahepatic biliary ductal dilatation with no definite enhancing mass. Blood culture showed growth of *Rhizobium radiobacter* after 28 hours of incubation. Empirical antibiotics with Piperacillin/Tazobactam (4.5 grams IV every 8 hours) was administered and the patient was discharged improved.

DISCUSSION AND CONCLUSION

The genus *Rhizobium* (formerly *Agrobacterium*) comprises of pathogens of agricultural soil and plants. These pathogens are usually associated with plant tumorigenic diseases. *Rhizobium radiobacter* has been recognized as a most common opportunistic agent among the genus, that affects primarily immunocompromised patients or those with indwelling catheters. Rarely, *R. radiobacter* can cause biliary tract infections such as ascending cholangitis. Currently, there are no clinical trials on the optimal therapy for *Rhizobium radiobacter* infection due to its low incidence. According to available literature, *Rhizobium radiobacter* is susceptible to aminoglycosides, fluroquinolones, extended-spectrum beta-lactams, and carbapenems.

R*hizobium radiobacter* is an emerging opportunistic pathogen primarily affecting immunocompromised patients and those with indwelling catheters. However, it may occur in individuals without known comorbidities. Although uncommon, this opportunistic agent should be considered as a possible pathogen causing biliary tract infections such as ascending cholangitis that can cause sepsis. Therefore, this case may be an eye opener to us physicians that *R. radiobacter* may occur even without other risk factors.

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