A 54 years old female came to emergency of Asian institute of Medical Sciences and Research Center, Faridabad, India with the complaints of pain in abdomen, recurrent vomiting, abdominal distention and not able to pass flatus since two days. Patient was managed in intensive care unit and was empirically put on Meropenem and Targocid. She developed multiple episodes of loose motion, and stool culture was sent which was positive for Clostridium difficile. Therefore, patient was put on Vancomycin and Metrogyl. The blood cultures reported growth of Leuconostoc pseudomesenteroides. Infection with Leuconostoc may cause fever, intravenous catheter-related sepsis, bacteremia, abdominal pain, gastroenteritis, colitis or meningitis. To summarize this rare organism which is most commonly seen in immunocompromised patients, was isolated in a previously healthy individual, post Vancomycin therapy with prolonged ICU stays.

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1. Introduction

Leuconostoc is a catalase-negative gram-positive microorganisms with irregular coccoid morphology. They are environmental organisms often found on plants, dairy products, vegetables, wine and occasionally in human virginal and stool samples. Earlier organisms of the genus was considered non-pathogenic hence generally recognized as safe. Few clinically human infection cases by this microorganism have been reported in the literature, leading to their classification as opportunistic pathogens. There organisms may be misidentified as Lactobacillus, Streptococcus (particularly the viridans group) or even enterococcus, as all share biochemical properties. These microorganisms, have an important physiological marker related to their intrinsic resistance to Vancomycin unlike other gram-positive bacteria. Despite remaining uncommon, these pathogens are gaining attention as several cases of nosocomial infection have been reported.

2. Case Report

A 54 years old female came to emergency of Asian institute of Medical Sciences and Research Center, Faridabad, India with the complaints of pain in abdomen, recurrent vomiting, abdominal distention and not able to pass flatus since two days. She had a history of cholecystectomy done 3 years back. On examination, her general condition was poor but was conscious oriented, afebrile having tachycardia and abdominal distention. Blood investigations at the time of admission were done and showed leucopenia (TLC – 2,600), viral markers (HIV, HbsAg, HCV) were negative and initial blood and urine cultures were negative. CECT whole abdomen and CT angiography abdomen triple phase showed moderate free fluid (ascitic) and few calcified mesenteric lymph nodes, as well as mild circumferential thickening of jejunal loops, respectively. Patient was managed in intensive care unit and was empirically put on Meropenem and
physiological marker related to their intrinsic resistance to negative gram-positive microorganisms have an important microbiologically. Therefore, held little or no importance clinically and species were usually considered nonpathogenic and, in compromised hosts. Similarly, before 1985, Leuconostoc cause pneumonia, urinary tract infections, and bacteremia earlier considered as nonpathogenic now are known to resistance mechanisms. To name few, bacteria like radiation therapy, chemotherapy, and immunotherapy on adaptability of bacteria and the detrimental effect of modern pathogens have started showing virulency, because of the In today’s scenario many organisms earlier listed as non-pathogens have started showing virulence, because of the adaptability of bacteria and the detrimental effect of modern radiation therapy, chemotherapy, and immunotherapy on resistance mechanisms. To name few, bacteria like lactobacillus acidophilus, Serratia marcescens which were earlier considered as nonpathogenic now are known to cause pneumonia, urinary tract infections, and bacteremia in compromised hosts. Similarly, before 1985, Leuconostoc species were usually considered nonpathogenic and, therefore, held little or no importance clinically and microbiologically.2

The genus Leuconostoc is composed by catalase-negative gram-positive microorganisms have an important physiological marker related to their intrinsic resistance to Vancomycin.3,4 Infection with Leuconostoc may cause fever, intravenous catheter-related sepsis, bacteremia, abdominal pain, gastroenteritis, colitis or meningitis in this group of patients.5 Similarly in our case, she was admitted for more than 20 days in intensive care unit and was on intravenous antibiotic therapy, specially Vancomycin was given for 10 days prior culture. Handwerger S et al., and Montejo M et al., also reported risk factors like history of surgery and prior Vancomycin therapy5,6 in patients infected by Leuconostoc.

Indwelling intravascular catheters or the gastrointestinal tract infection are common risk factors described.7,8 Removal or change in indwelling intravenous catheters alone have been shown to be curative in some patients without the need for antimicrobial therapy.5 The antibiotic therapy is driven by MIC of the drug. Leuconostoc spp. Have shown resistance for glycopeptides, owing to the production of peptidoglycan precursors ending in D-Ala-D-Lac, and are usually susceptible to Penicillin, Ampicillin, Aminoglycosides, Clindamycin, Minocycline and Marcolides.9 In addition, Linezolid and Daptomycin have been used successfully to treat Leuconostoc bacteremia, although linezolid MICs of Leuconostoc species are usually higher when compared with those of streptococci.10 Moderate susceptibility is seen with Cephalosporins, Chloramphenicol, Tetracycline and Doxycycline. Although the organism has been shown to be resistant to Cefoxitin, it is susceptible to Cefotaxime in vitro.11 Consistent with our isolate the culture were sensitive to Benzylpenicillin (MIC=0.5), Clindamycin (MIC=0.25), Erythromycin, Levofloxacin (MIC=2), Linezolid (MIC <2), Tigecycline (MIC<0.06). Glycyclcline, has a broad-spectrum activity against various gram-positive and gram-negative bacteria including multidrug-resistant strains, anaerobic bacteria and atypical organisms proven to be useful in the treatment of hospital-acquired infections caused by Vancomycin-intermediate and Vancomycin-resistant enterococci (VRE).12,13

To summarize this rare organism which is most commonly seen in immunocompromised patients, was isolated in a previously healthy individual, post Vancomycin therapy with prolonged ICU stays.

3. Discussion

In today’s scenario many organisms earlier listed as non-pathogens have started showing virulence, because of the adaptability of bacteria and the detrimental effect of modern radiation therapy, chemotherapy, and immunotherapy on resistance mechanisms. To name few, bacteria like lactobacillus acidophilus, Serratia marcescens which were earlier considered as nonpathogenic now are known to cause pneumonia, urinary tract infections, and bacteremia in compromised hosts. Similarly, before 1985, Leuconostoc species were usually considered nonpathogenic and, therefore, held little or no importance clinically and microbiologically.2

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5. Conflict of Interest
The authors declare no conflict of interest.

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