

Brief Communication, Case Study

A Case Presentation of Urinary Tract Infection Due to *Staphylococcus lugdunensis*

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Introduction

Urinary tract infections occur due to the colonization of the urinary tract by microorganisms and are considered one of the most common forms of infection in the community. Female gender, diabetes, and prior surgery of the urinary system are considered, among others, as high-risk factors for urinary tract infections.^{1,2} The aim of this study is the presentation of a case of urinary tract infection caused by *Staphylococcus lugdunensis*.

Case presentation

A 68-year-old woman presented to a primary care physician at the Nikea Health Center, Piraeus, Greece, reporting urinary frequency, urinary urgency and dysuria. Patient history reveals hypercholesterolemia, hypertriglyceridemia, cytocele grade 3 (severe) operated before decade, urethrocele operated before 5 years, arterial hypertension, and diabetes type II. History also reveals recurrent urinary tract infections, usually caused by *Escherichia coli* (>10⁵CFU/ml). She had no fever and her pelvic examination was normal, without evidence of abnormal vaginal or cervical discharge or inflammation. Urinalysis showed proteinuria, intense pyuria, traces of blood and absence of nitrites (Multistix 10 SG Reagent Strips, Siemens Healthineers). A urine culture grew monomicrobial *Staphylococcus lugdunensis* (>10⁵CFU/ml). The bacterium was identified by the RapID REMEL identification system (Thermo Fisher Scientific). (Figure 1) Antimicrobial susceptibility testing revealed susceptibility to Erythromycin, Ceftriaxone, Clindamycin, Vancomycin, Levofloxacin, Oxacillin, Cefuroxime, Cefotaxime, Ampicillin, Nitrofurantoin, Moxifloxacin, Cofrimoxazole, Amikacin, Ciprofloxacin, Norfloxacin, Tetracycline (Kirby-Bauer Disk Diffusion Susceptibility Test Protocol). The patient received treatment with Cefuroxime and her clinical status improved significantly. The follow-up urine culture which was performed after 10 days of antibiotic therapy was negative.

Discussion

Staphylococcus lugdunensis is a Gram-positive cocci, nonsporulating, nonmotile, facultatively anaerobic, catalase-positive, coagulase-negative, oxidase-negative, delta-hemolytic organism, which is commonly part of the human skin flora.^{3,4} It can also be found in the axilla, the nasal cavity, the perineal region, and the lower extremities. According to the literature it can also cause bone and joint infections, native and prosthetic valve endocarditis with significant mortality rates and bacteremia.⁵⁻⁷ The frequency of *S. lugdunensis* in urine cultures is not known, but there is growing evidence that it is an infrequent cause of urinary tract infection.^{8,9} Since it is associated with a high level of virulence and the capacity to produce a broad range of infections, its occurrence is subject of the attention of the scientific community.

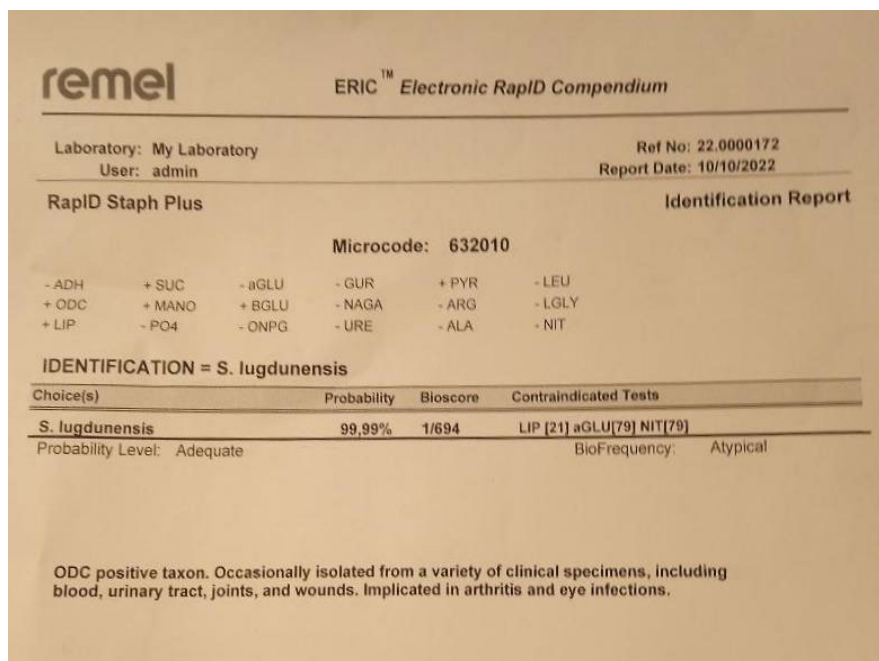


Figure 1: Remel Rapid Identification of urinary isolate of *Staphylococcus lugdunensis* demonstrating a typical biotype with a probability of identification at 99.99%

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