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Raoultella Ornithinolytica Urinary Tract Infections are on the Rise: A Case Report

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ABSTRACT

Community-acquire urinary tract infection (UTI) with Raoultella ornithinolytica is rare, with only 36 cases have been reported in the literature. The case in hand reports a 29 yrs. old lady with pelvic inflammatory disease who suffered from bothering irritative lower urinary tract symptoms (LUTS) ten days after removing an intrauterine contraceptive device. Urine culture recovered the rare bacterium of Raoultella ornithinolytica. Based on the sensitivity result, the patient has been treated with levofloxacin antibiotic and has responded favorably.

Keywords: Raoultella Ornithinolytica, Klebsiella, community-acquire UTI

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INTRODUCTION

Raoultella ornithinolytica (formerly Klebsiella ornithinolytica) belongs to the genus Raoultella and the family Enterobacteriaceae. It is an oxidase-negative, non-motile, capsulated, facultative aerobic Gram-negative bacillus. Raoultella is named after the French bacteriologist Didier Raoult [1].

To our knowledge, in 2014, Nakasone *et al*, reported the 11th case of R. ornithinolytica related UTI [2]. Later, in 2016, P. Seng *et al* presented a literature review documenting 36 UTI cases, 25 of which were clinically cystitis [3]. Therefore, we are reporting the sequential 26th case of R. ornithinolytica related uncomplicated cystitis. Despite human infection with R. ornithinolytica is rare, it has manifested as an infrequent, but important cause of soft tissue infections; e.g. pneumonia, pleural effusion, skin infection, cellulitis, and cholangitis [3]. Some of the infections were serious enough to be life-threatening.

The objective of this treatise was to report a case of community-acquire cystitis caused by the rare pathogen R. ornithinolytica, by describing its clinical and microbiological features.

Case report:

We are reporting a 29 yrs. old Saudi lady with pelvic inflammatory disease who was complaining of recurrent persistent UTI and vaginal discharge since she had an intrauterine contraceptive device (IUCD) placed. Over a year span, when she was wearing the device, she had had 5 relapses of UTI caused by different organisms including E.coli and Klebsiella. Treatment was empirical in most of the instances. Among the prescribed medications: antibiotics, antifungal and metronidazole. KUB sonography showed tiny gravels in either kidney, in addition to diffuse bladder wall thickness. Renal function was normal. Urine analyses showed hematuria and pyuria of different cell counts. At last, she opted to remove the IUCD in an attempt to stop further suffering.

Along the ten days following the removal of the device she complained of dysuria, frequency, and urgency. New urine culture recovered the rare bacterium Raoultella ornithinolytica. Based on the sensitivity result (table 1), the patient has been treated with levofloxacin antibiotic and has responded fully.

Table 1: Microbiology report Organism: Raoultella ornithinolytica Sample source: urine

Tested antibiotics	Raoultella Ornithinolytica MIC* susceptibility
Amikacin	S
Amoxicillin/Clavulanic acid	S
Aztreonam	S
Cefepime	S
Cefoxitin	S
Ceftazidime	S
Ceftriaxone	S
cefuroxime	S
Ciprofloxacin	S
gentamicin	S
levofloxacin	S
Pipracillin/Tazobactam	S
Trimethoprim/Sulfamethoxazole	S

* MIC: Minimum Inhibitory Concentration, count 100,000 cfu/ml

CONCLUSION:

R. ornithinolytica is a rare yet significant bacterium to cause typical manifestations of UTI. Infections by this bacterium should be suspected whenever the patient is wearing a urogenital device. Some of R. ornithinolytica soft tissue infections are serious enough to be life-threatening.

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