Community-Acquired Urinary Tract Infection by *Pseudomonas oryzihabitans*

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ABSTRACT

Pseudomonas oryzihabitans and *Chrysomonas luteola* has been placed in CDC group Ve2 and Ve1 respectively. These bacteria appear to be emerging pathogens. *P. oryzihabitans* was isolated from cases of bacteremia, CNS infections, wound infections, peritonitis, sinusitis, catheter associated infections in AIDS patient, and pneumonia. Most of the reports of *P. oryzihabitans* infection were of nosocomial origin in individuals with some predisposing factors. We report here a case of community acquired UTI by *P. oryzihabitans* in an immune-competent patient with stricture of urethra.

Key words: Community acquired, Immune-competent, *Pseudomonas oryzihabitans*, Urinary tract infection

INTRODUCTION

Pseudomonas oryzihabitans, previously known as *Flavimonas oryzihabitans* has been placed in CDC (CDC: Centers for Disease Control) group Ve-2. *P. oryzihabitans* has been recovered from various clinical samples, including wound swab, sputum, ear swab, conjunctival scrapings, urine, peritoneal fluid, and blood. *P. (Flavimonas) oryzihabitans* bacteremia was also reported in a neonate. [1,2]

P. oryzihabitans appears to be an emerging pathogen. *P. oryzihabitans* is an uncommon pathogen associated with indwelling intravenous catheter infection.[3,4] We report a case of urinary tract infection (UTI) caused by *P. oryzihabitans* in a patient with anterior stricture of urethra. *Chrysomonasluteola* belongs to CDC group Ve-1 Recently, two cases of infection from Indian patients by *Chrysomonas* have been reported, from Mumbai and Hyderabad.[5,6] There is no documented report of *P. oryzihabitans* infection in any Indian patient. In May 2011, six cases of *P. oryzihabitans* bacteremia in neonatal intensive care unit were reported. [2]

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CASE REPORT

A 45-year-old male patient was admitted in the surgery ward with complaints of difficulty in passing urine since two months. There was no history of burning micturition and hematuria and no history of chronic illness suggestive of immunocompromised status. Test for HIV and hepatitis B surface antigen (HBsAg) was negative. Hemoglobin was 13.8g/dL and erythrocyte sedimentation rate (ESR) was19 mm/h. General and systemic examination was normal. Ultrasonography of the abdomen and pelvis was normal. Retrourethrogram showed narrowing in the anterior urethra. The case was provisionally diagnosed as stricture of urethra with UTI. Urine sample was received for culture and sensitivity, and processed by routine semiquantitative method. On blood agar and Muller Hinton agar rough wrinkled yellow pigmented colonies were grown [Figure 1] and on MacConkey agar, nonlactose-fermenting colonies were grown. Gram-negative, motile, oxidase-negative, nonfermenter bacilli were isolated. The isolate was further identified as *P.oryzihabitans* (% id98.3) by the API ID 32 GN automated identification system (bioMérieux, Marcy I' Étoile, France). Identification was based on the following tests: Negative nitrate reduction, esculin hydrolysis, lysine decarboxylase, arginine dehydrolase, and orthonitrophenyl-β-D-galactopyranoside activity (ONPG), positive oxidation fermentation glucose, maltose, mannitol, and xylose activity. Antibiotic sensitivity was done by disc diffusion method using Clinical and Laboratory Standards

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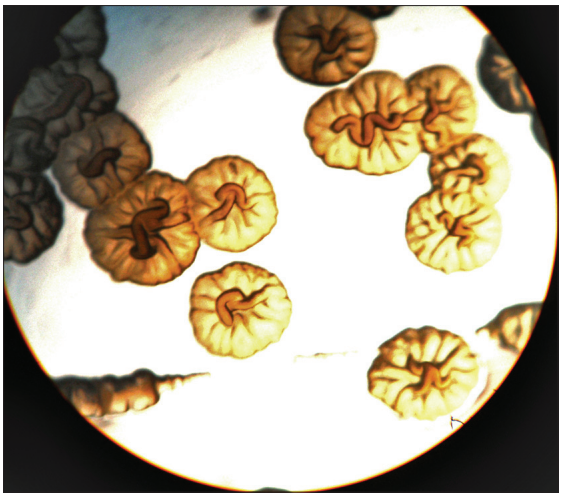

Figure 1: Colonies of *P. oryzihabitans* on Muller Hinton agar (×100)

Institute (CLSI) guidelines. The isolate was sensitive to piperacillin, cephalosporins, imipenem, meropenem, cotrimoxazole, aminoglycosides, and fluoroquinolones, and resistant to nitrofurantoin. The patient was treated with oral norfloxacin 400 mg twice daily for ten days, and advised to come for follow-up after 15 days. Initial retrourethrogram showed narrowing in anterior urethra, but as the patient responded to antibiotic treatment and dysuria was relieved, repeat retrourethrogram was not done.

DISCUSSION

In hospitals, *P. oryzihabitans* has been isolated from sink drains and respiratory therapy equipment. In nature, this organism has been isolated from rice paddy. *P. oryzihabitans* bacteremia was reported in 12 patients at the National Taiwan University hospital.[4] Four cases of community-acquired pneumonia infection by *P. oryzihabitans* were reported, three in HIV-positive patients and one in a patient with chronic myeloid leukemia.[7] Most of the reports of *P. oryzihabitans* infection were of nosocomial origin in individuals with one of the predisposing factors like low-birth-weight neonate, premature neonate, biliary tract infection, peritonitis, subdural empyema, or pneumonia, and were associated with the presence of indwelling catheters.[1,2,4,8] There are very few reports of community-acquired infection by *P. oryzihabitans*, like the infection of a Hickman catheter traced to a synthetic bath sponge, pneumonia, or a soft tissue infection.[3,7,9] Some case reports also have been documented in otherwise previously healthy individuals.[10] *P. oryzihabitans* isolated from the blood sample of catheter associated infection in the AIDS patient was sensitive to broad-spectrum cephalosporins, aztreonam, imipenem, aminoglycosides, ciprofloxacin, and trimethoprim-sulfamethoxazole, and resistant to ampicillin, amoxycillin-clavulinic acid and cefazolin.[3] In contrast to the previously reported cases, where *Pseudomonas* (*Flavimonas*) showed resistance to cefazolin, cefuroxime, and trimethoprim, our isolate was found to be sensitive to these antibiotics[8] This suggests that the strain could well have been a community isolate.

Although *P. oryzihabitans* has been isolated occasionally from the environment, the source of human infection has been well documented only in a few cases; in two reports, the source of infection was traced to a bath sponge.[2,3] A PubMed search for *P. oryzihabitans* infection in Indian patients did not yield any result. This may be the first case report of *P. oryzihabitans* UTI infection in an Indian patient.

CONCLUSION

Although a saprophyte, *P. oryzihabitans* could well emerge as a potential pathogen. Therefore, clinical microbiologists should not ignore them as laboratory contaminants, because reports of infections are on the rise both in immune-compromised and in immune-competent individuals. Thus, proper identification of the nonfermentor is the need of the day. Clinicians and laboratory personnel also have to be made aware of the pathogenic role of *P. oryzihabitans* which may become increasingly prevalent in the near future.

REFERENCES

1. Jog SM, Patole SK. *Flavimonas oryzihabitans* bacteremia in neonate. Indian Pediatr 2001;38:562-3.
2. Prifti H, Oikonomidou D, Pappa O, Tryfinopoulou K, Vatzeli K, Karaiskos K, *et al.* Outbreak of *Pseudomonas (Flavimonas) oryzihabitans*bacteraemia in a neonatal intensive care unit. 21st European Society of Clinical Microbiology and Infectious Diseases. CMI: Milan, Italy;May 7-10,2011. p. 1238.
3. Marín M, García de Viedma D, Martín-Rabadán P, Rodríguez-Créixems M, Bouza E. Infection of Hickman catheter by *pseudomonas (formerly flavimonas) oryzihabitans* traced to a synthetic bath sponge. J Clin Microbiol 2000;38:4577-9.
4. Lin RD, Hsueh PR, Chang JC, Teng LJ, Chang SC, Ho SW, *et al. Flavimonas oryzihabitans* bacterimia: Clinical features and microbiological characteristics of isolates. Clin Infect Dis 1997;24:867-73.
5. De AS, Salunke PP, Parikh HR, Baveja SM. *Chryseomonas luteola* from Bile Culture in an adult male with sever jaundice. J Lab Physicians 2010;2:40-1.
6. Ramana KV, Kareem MA, Sarada CH, Sebastian S, Lebaka R, Ratnamani MS, *et al.* Chryseomonas luteola bacteremia in a patient with left pyocele testis with Fournier's scrotal gangrene. Indian J Pathol Microbiol 2010;53:568-9.
7. Glacometti A, Cirioni O, Quarta M, Schimizzi AM, Del Prete MS, Scalise G. Unusual clinical presentation of infection due to *Flavimonas oryzihabitans*. Eur J Clin Microbiol Infect Dis 1998;17:645-8.
8. Lejbkowicz F, Belavsky L, Kudinsky R, Gery R. Bacterimia and Sinusitis due to *Flavimonas oryzihabitans* infection. Scand J Infect Dis 2003; 35:411-4.
9. Lam S, Isenberg HD, Edwards B, Hilton E. Community-acquired

soft-tissue infections caused by *Flavimonas oryzihabitans*. Clin Infect Dis 1994;18:808-9.

10. Kansouzidou A, Charitidou C, Poubrou E, Daniitidis VD, Tsagaropoulou H. Haemorrhagic papular rash associated to *Flavimonas oryzihabitans* bacteremia in a child. Eur J Epidemiol 2000;16:277-9.

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