

Achromobacter xylosoxidans infection in urinary tract in a secondary kidney stone patient: Case Report

Sekonder böbrek taşı hastasında idrar yolunda Achromobacter xylosoxidans enfeksiyonu: Vaka sunumu

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Abstract

Achromobacter xylosoxidans formerly named as Alcaligenes xylosoxidans is an aerobic, non-fermenting, oxidase positive, catalase positive gram negative bacillus. It is seen especially in immunosuppressed patients, patients with tumors, hypogamaglobulinemia or transplant patients. A. xylosoxidans infection in urinary system is very rare. 56 year old male patient was presented to our clinic with bilateral flank pain. He had not immunodeficiency and tumor history. He had diabetes mellitus. He had shock wave lithotripsy history for bilateral kidney stone. He had previous open surgery for right kidney stone and retrograde intrarenal surgery for left kidney stone. In the urine culture, Achromobacter xylosoxidans infection was detected. Ciprofloxacin, ceftriaxone and methenamine hippurate treatment were firstly applied to the patient. Patient was followed and 15 days later he admitted our clinic. 38 white blood cells and 8 red blood cells were present in urinalysis and the control urine culture was sterile. In conclusion, A. xylosoxidans infection is rarely seen and it has high resistance to antibiotics. Clinicians must be careful about the infection and treatment of A. xylosoxidans infection.

Keywords: Achromobacter xylosoxidans, Urinary tract

Öz

Achromobacter xylosoxidans Alcaligenes xylosoxidans olarak bilinir. Aerobik, non-fermentatif, oksidaz pozitif, katalaz pozitif gram negatif bir basildir. Immun yetmezlikli, tümörlü, hipogamaglobulinemili ve transplantlı hastalarda genellikle görülür. Uriner sistem enfeksiyonu nadirdir. 56 yaşında erkek hasta bilateral flank ağrı ile kliniğimize başvurdu. Hastanın immünyetmezlik ve tümör öyküsü yoktu. Bilateral böbrek taşı için şok dalga litotripsi öyküsü mevcuttu. Sağ böbrek taşı için açık cerrahi, sol böbrek taşı için retrograt intrarenal cerrahi öyküsü mevcuttu. İdrar kültüründe Achromobacter xylosoxidans enfeksiyonu tespit edildi. Ciprofloksasin, seftriakson ve metenamin hippurat tedavileri hastaya ilk olarak uygulandı. Hasta takip edildi ve 15 gün sonra kliniğe kabul edildi. 38 beyaz küre hücresi ve 8 kırmızı küre hücresi idrar analizinde görüldü ve idrar kültürü steril. Sonuç olarak A. xylosoxidans enfeksiyonu nadir görülür ve antibiyotiklere yüksek dirence sahiptir. Klinisyenler A. xylosoxidans enfeksiyonu ve tedavisi konusunda dikkatli olmalıdır.

Anahtar kelimeler: Achromobacter xylosoxidans, İdrar yolu

Introduction

Achromobacter xylosoxidans formerly named as Alcaligenes xylosoxidans is an aerobic, non-fermenting, oxidase positive, catalase positive gram negative bacillus. In 1971, it was firstly reported by Yabuchi and Ohyama [1] in patients with chronic otitis media. It is rarely seen in human. It is seen especially in immunosuppressed patients, patients with tumors and hypogamaglobulinemia, or transplant patients [2]. A. xylosoxidans infection in urinary system is very rare. In this study, we reported urinary tract infection due to A. xylosoxidans in a secondary kidney stone patient.

Case presentation

56 year old male patient was presented to our clinic with bilateral flank pain. He had not immunodeficiency and tumor history. He had diabetes mellitus (DM). He had shock wave lithotripsy (SWL) history for bilateral kidney stone. He had previous open surgery for right kidney stone and retrograde intrarenal surgery (RIRS) for left kidney stone. Operation was planned. Informed consent was taken before operation. In the laboratory tests, blood urea nitrogen (BUN) was 9 mg/dl, creatinine was 0.81 mg/dl. In the common blood count test, White blood cell (WBC) was 9.7 K/uL, hemoglobin was 15.6 g/dl. 6 red blood cells (RBC) and 151 WBCs were present in urinalysis. There were kidney stones and the largest one was 32 mm sized in the radiological imaging. Urine analysis and urine culture was ordered to indicate any possibility of urinary tract infection. Urine was inoculated in to Sheep blood agar (SBA) utilized for quantitative urine culture and MacConkey agar utilized as selective differential agar for gram-negative bacteria, A single species of gram negative bacillus recovered at >10⁵ cfu"s/mL urine were identified as *Achromobacter xylosoxidans* by the Vitek 2 Compact system using Gram-negative cards (bioMérieux, France) and were subjected to antibiotic sensitivity test.. It was susceptible to ceftazidime, meropenem and piperacilline tazobactam. Ciprofloxacin, ceftriaxone and methenamine hippurate treatment were firstly applied to the patient. Patient was followed and 15 days later he admitted to our clinic. 38 WBCs and 8 RBCs were present in urinalysis and the control urine culture was sterile.

Discussion

A. xylosoxidans is a rarely seen opportunistic gram negative non-fermenting bacillus [3]. It is seen in immunocompromised patients, transplant patients and patients with hematological malignancy and blood diseases [4]. Otitis media, skin infections, intravenous catheter related and surgery site infections are typical infections of *A. xylosoxidans* [2]. Urinary tract infections (UTI) are rarely seen. In a study, UTI rate was % 0.04. 9 cases were reported. These cases had history of hematologic or solid malignancy, DM, chronic renal failure and renal transplantation [5]. Six patients had kidney anomaly. 8 patients had cystitis symptoms and one patient was asymptomatic [5]. In another study, a patient with septic shock after SWL due to *A. xylosoxidans* was reported. Patient didn't have immunodeficiency, chronic disease, UTI and kidney stone history. Septic shock caused by *A. xylosoxidans* was appeared in the patient and after treatment in intensive care unit patient was healthy and discharged [6]. In our study patient complained with flank pain. Patient had DM. He had previous surgery and SWL history for kidney stone. *A. xylosoxidans* infection was detected in preoperative urine culture.

A. xylosoxidans infection treatment is difficult due to high resistance to antibiotics. In the literature, *A. xylosoxidans* is susceptible to imipenem, piperacillin tazobactam, ceftazidime and trimethoprim sulfamethoxazole [4,7,8]. Studies about mixed treatments are carried out [4,8].

In conclusion, *A. xylosoxidans* infection is rarely seen and it has high resistance to antibiotics. Clinicians must be

careful about the infection and treatment of *A. xylosoxidans* infection.

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