

Lethal Urosepsis Due to Occlusion of an Indwelling Bladder Catheter**Kento Sonoda MD, Ken-ichi Muramatsu MD, Hiroki Nagasawa MD, Atsuhiko Shindo MD, Ikuto Takuchi MD, Kei Jitsuiki MD, Shunsuke Madokoro MD, Youichi Yanagawa* MD. PhD**

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10.36347/sjmcr.2018.v06i08.011



Abstract: An 87-year-old woman, who had had hypertension and neurological bladder with an indwelling bladder catheter, complained of lower abdominal pain, appetite loss and a poor physical condition. However, her family selected to observe her at home. The next day, she became unconscious after vomiting and an ambulance was called. When the emergency medical technicians checked her, she was in cardiac arrest. Her initial rhythm was asystole. She was transported to our hospital with basic life support. On arrival, she remained in cardiac arrest. Advanced cardiac life support failed to obtain a return of circulation. During autopsy, computed tomography showed extended bladder with a thick wall, hydro-ureter and hydro-nephrosis, even though a bladder catheter was inserted. After exchanging the bladder catheter, foul-smelling pyuria was recognized. We diagnosed the patient with lethal urosepsis due to occlusion of an indwelling bladder catheter. This is the first case of lethal urosepsis due to occlusion of an indwelling bladder catheter. Family education is important when an elderly patient with an indwelling bladder catheter will live with their family at home, so that family members understand that the patient should be transported to a medical facility as soon as possible when problems occur.

Key words: bladder catheter; urosepsis; fatal.

INTRODUCTION

Urosepsis is defined as sepsis caused by infection of the urogenital tract. In approximately 20–40% of all patients with sepsis, the infectious focus is localized in the urogenital tract, mainly due to obstructions at various levels [1-3]. Although urinary tract infections may be lethal, with early source control, the outcomes of obstructive urinary tract infection are reported to be comparable to non-obstructive urinary tract infection [2]. We hereby report a case of lethal urosepsis due to occlusion of an indwelling bladder catheter.

CASE

An 87-year-old woman, who had had hypertension and neurological bladder with an indwelling bladder catheter, complained of lower abdominal pain, appetite loss and a poor physical condition. However, her family selected to observe her at home. The next day, she became unconscious after

vomiting and an ambulance was called. When the emergency medical technicians checked her, she was in cardiac arrest. Her initial rhythm was asystole. She was transported to our hospital with basic life support. On arrival, she remained in cardiac arrest. Advanced cardiac life support failed to obtain a return of circulation. During autopsy, computed tomography showed extended bladder with a thick wall, hydro-ureter and hydro-nephrosis, even though a bladder catheter was inserted (Figure 1). After exchanging the bladder catheter, foul-smelling pyuria was recognized (Figure 2). The results of a blood and culture analysis are shown in Table 1. We diagnosed the patient with lethal urosepsis due to occlusion of an indwelling bladder catheter.

CT showed an extended bladder with a thick wall, hydro-ureter and hydro-nephrosis, even though a bladder catheter was inserted.

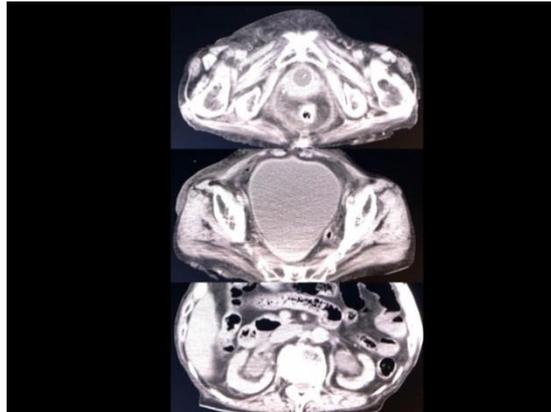


Fig-1: Whole body computed tomography (CT)



Fig-2: Pyuria in the present case

Table-1: Results of the blood and culture analysis

After exchanging the bladder catheter, foul-smelling pyuria was recognized.

Blood gas analysis

(FiO₂ 1.0) pH 6.749, PCO₂ 42.1 mmHg, PO₂ 115 mmHg, HCO₃⁻ 5.3 mmol/l, base excess -29.0 mmol/l, lactate 11.2 mmol/l.

Cell blood count and biochemical analysis

White blood cell count, 11,900/μl; hemoglobin, 10.1 g/dl; platelets, 13.8 x 10⁴/μl; total bilirubin, 1.3 mg/dl; total protein, 5.0 g/dl; aspartate aminotransferase, 557 IU/l; alanine aminotransferase, 276 IU/l; creatine phosphokinase, 509 IU/l; amylase, 214 IU/l; blood urea nitrogen, 52.2 mg/dl; creatinine, 5.02 mg/dl; glucose, 24 mg/dl; sodium, 151 mEq/l; potassium, 10.5 mEq/l; chloride, 113 mEq/l; c-reactive protein, 21.9 mg/dl; activated partial thromboplastin time, 46.9 (25.2) s; thromboplastin time, 25.3 (12.4) s; fibrinogen, 287 mg/dl; fibrinogen degradation products 59.4μg/ml.

Urinary culture analysis

Proteus mirabilis 3+, *Escherichia coli* 2+, *Pseudomonas aeruginosa* 1+, *Peptostreptococcus* species 2+

DISCUSSION

Obstructive uropathy causes 78% of cases of urosepsis[3]. In one study, the causes of 205 cases of urosepsis included urolithiasis (43%), prostatic adenoma (25%), urologic cancer (18%), and other causes (14%) [4]. This is the first case of lethal urosepsis due to occlusion of an indwelling bladder catheter.

Patients at risk of sepsis are more likely to develop bacteremia as a consequence of a urinary tract infection. Old age, female sex, and the presence of an indwelling bladder catheter—factors that were observed in the present case—are reported to be risk factors for urinary tract infection[5]. Urinary tract infection is often difficult to diagnose because typical symptoms do not always occur [5]. When diagnosing elderly patients, physicians have to consider that the classic symptoms can be masked by multiple morbidities, and that septic encephalopathy and acute confusion (delirium) may be the only symptoms [5]. Accordingly, when an elderly patient with an indwelling bladder catheter will live with their family at home, family education is important, so that family members know that the patient should be transported to a medical facility as soon as possible when problems occur.

CONCLUSION

This is the first case of lethal urosepsis due to occlusion of an indwelling bladder catheter. Family education is important when an elderly patient with an indwelling bladder catheter will live with their family at home, so that family members understand that the patient should be transported to a medical facility as soon as possible when problems occur.

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