

A Touch Of Infection Saves Lives; Urosepsis In A Kidney Transplant Patient

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CASE

- 60 year old female patient
- Kidney transplant from cadaver in December 2023 for chronic renal failure

STORY

- The patient, who underwent a kidney transplant five months ago, came in for a follow-up visit with complaints of
 - New-onset difficulty urinating
 - Decreased urine volume
 - Intermittent abdominal pain
- The patient was admitted to the organ transplant service for further examination and treatment.

LABORATORY

In the examinations performed in the urology clinic;

- Procalcitonin (PCT) 0,10 ng/ml
- CRP 5 mg/dl
- Creatinin 1,69 mg/dl
- WBC 8200
- PLT 127000
- Urine culture steril

- On the 2nd day of follow-up,
 - creatinine level increased to 5 mg/dl
 - anuria developed
 - nephrostomy was opened with a diagnosis of post-renal acute renal failure
- Creatinine was found to be 2.9 mg/dl at the 24th hour after nephrostomy.
- On the 4th day after nephrostomy,
 - The creatinine level regressed to normal
 - Anterograde double J stent was planned but couldn't be implanted due to tortuosity in the ureter
- The patient was transferred to urology clinic for ureteroscopy (URS)

LABORATORY

Laboratory results after nephrostomy;

- Creatinin 0,96 mg/dl
- CRP 5 mg/dl
- WBC 4900
- PLT 125000

Urine analysis;

- **Leukocyte:7**
- Leukocyte esterase:neg
- Nitrite:neg

Urine culture; steril

- The patient underwent ureteroscopy (URS) 23 days later with the diagnosis of renal pelvis-ureteral stenosis.
- Urine culture was not taken before URS from the patient who had culture sterility before the nephrostomy procedure.
- During the procedure, ureteral king was observed, the stenosis was passed with the help of a double guide, but could not be passed with URS, and a double J stent was inserted over the guide.
- **General condition disorder, fever, dyspnea, shortness of breath, and increased creatinine** were observed **within hours after URS.**

LABORATORY

Laboratory results after URS;

- PCT >100 ng/ml
- Creatinine 3.38 mg/dl,
- CRP 301 mg/l
- AST 119 U/l, ALT 143 U/l,
- Total bilirubin 2 mg/dl,
- WBC 21680 (95% PNL),
- PLT 87000 ,
- Lactate 4.6 mmol/L were detected.

Blood culture ;

- **ESBL positive *Escherichia coli***

Urine culture ;

- **ESBL positive *Escherichia coli***

- After URS, the patient's general condition deteriorated under empirical ceftriaxone treatment initiated by the urology clinic
- The treatment was amended to meropenem at 48 hours with the recommendation of infectious diseases.
- The patient with sepsis was transferred from the urology service to the organ transplantation service for close follow-up.
- At the 72nd hour of treatment, the patient's laboratory results, and condition improved and culture sterility was achieved.
- The treatment was completed in 14 days and the patient was discharged.

DISCUSSION

1. According to European Association of Urology guidelines, urine culture should be taken before urological intervention and preoperative treatment is recommended in case of asymptomatic bacteriuria (ABU). However, there is no clear time period for how long urine culture sterility should be observed before surgery.

3.3.5.5 Prior to urological surgery

In diagnostic and therapeutic procedures not entering the urinary tract, ABU is generally not considered as a risk factor, and screening and treatment are not considered necessary. On the other hand, in procedures entering the urinary tract and breaching the mucosa, particularly in endoscopic urological surgery, bacteriuria is a definite risk factor.

Two RCTs [101, 102] and two prospective non-randomised studies [103, 104] compared the effect of antibiotic treatment to no treatment before transurethral prostate or bladder tumour resections. Antibiotic treatment significantly reduced the number of post-operative symptomatic UTIs compared to no treatment in the meta-analysis of the two RCTs (average RR 0.20, 95% CI 0.05 to 0.86; n=167). The rates of post-operative fever and septicaemia were also significantly lower in case of antibiotic treatment compared to no treatment in the two RCTs. One RCT including patients with spinal cord injury undergoing elective endoscopic urological surgeries found no significant difference in the rate of post-operative UTIs between single-dose or 3-5 days short term pre-operative antibiotic treatment of ABU [105].



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ORIGINAL ARTICLE

Preoperative polymicrobial urine culture: An analysis of the risk of perioperative urinary tract infection



*Examen cytbactériologique des urines préopératoires : analyse du risque
d'infection urinaire*

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Current recommendations include performing urine cultures ten to four days before surgery to detect bacteriuria. Positive urine cultures should be treated for at least 48 hours before surgery if it is not possible to obtain urine sterility

DISCUSSION

2. Given our clinical experience, urine sterility should be observed 48-72 hours before the procedure, especially in immunosuppressed patients undergoing frequent urological procedures such as RTx.
3. We think that the opinion of infectious diseases should be obtained urgently for the organisation of appropriate antimicrobial treatment in patients with suspected sepsis.
4. Again, according to our clinical experience, surgical branches are less successful in sepsis management than internal branches.

