Case Report

Fournier’s gangrene after renal transplantation

Mehmet Erikoglu1, Sakir Tavli1 and Suleyman Turk2

1General Surgery and Renal Transplantation Unit and 2Nephrology, Selcuk University Meram Medical Faculty, Konya, Turkey

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Introduction

Fournier’s gangrene is a rapidly progressive and potentially lethal disease that affects the perineum and male genitalia. Treatment consists of supportive care, surgical debridement and antibiotic therapy. Even with the use of broad-spectrum antibiotics and the development of asepsis and antiseptic measures in the operating theatre as well as modern surgical techniques and intensive care units, there is still a high mortality rate for Fournier’s gangrene [1,2]. Erectile impotence is a common problem in male patients with renal failure. The management of erectile impotence with prosthetic implants in renal transplant patients may lead to life-threatening infection [3].

This syndrome is seen very rarely after renal transplantation. We present herein a case occurring in a renal transplant patient who accumulated several risk factors.

Case

A 33-year-old male was admitted to our organ transplantation unit for live donor renal transplantation. His medical history revealed he had had a penile prosthetic implantation 2 years earlier to correct erectile dysfunction and 15 years earlier he had undergone right nephrectomy for renal calculi. He also had a history of diabetes mellitus. The patient was in chronic renal failure for 2 years and had undergone peritoneal dialysis for 1 year. At the onset of the infection, he was maintained on standard immunosuppression (30 mg prednisone, 300 mg cyclosporin and 2 g mycophenolate mofetil daily) as well as insulin for diabetes mellitus. In the second month after transplantation, the patient presented complaining of high fever, swelling and pain and tenderness in the scrotum. A physical examination revealed necrosis, oedema, hyperaemia and a malodorous discharge from the right scrotum. However, the testis seemed to be normal. There was scrotal crepitation on palpation. The patient’s white blood cell count was 10 000/mm³, the level of C-reactive protein was 18 mg/l (normal: 0–5 mg/l), serum creatinine was 2.7 mg/dl and blood urea nitrogen (BUN) was 108 mg/dl. The blood level of cyclosporin was 225.2 ng/ml (normal: 130–528 ng/ml) at the time the infection occurred.

This condition was evaluated as Fournier’s gangrene and treated with wide surgical debridement (Figure 1). There was no need for faecal diversion by colostomy, because the anal region was intact. The wound was followed up by repeated debridement and frequent wound dressings. Enterobacter, Enterococcus and Klebsiella were found in the wound culture. A combination antibiotic regimen of vancomycin, piperacillin–tazobactam and imipenem was instituted following the antibiogram results. Diabetes mellitus was controlled by insulin treatment. There was significant wound improvement after 1 month of intensive wound care. The wound was closed by primary suture after controlling of the infection (Figure 2). After the infection had been controlled, serum creatinine and BUN levels returned to normal values.

Fig. 1. The appearance of the wound after surgical debridement.
The most commonly isolated agent is *Escherichia coli* [7]. Walther *et al.* [3] found microaerophilic *Streptococcus* and *Staphylococcus* in the cultures of their patient. Mixed bacteria (*Enterobacter cloacae*, *Enterococcus faecalis* and *Klebsiella pneumoniae*) were detected in our case. The normal level of white blood cells, which is an infection parameter, was thought to be due to immunosuppressive treatment. Generally, the mortality rate in patients with Fournier’s gangrene is 18.6% while the mortality rate in diabetic patients is 33%; in non-diabetic patients this rate is 14.7%. The mortality rate will increase in conditions where diagnosis and treatment are delayed [8].

Since a satisfactory psychological benefit has been achieved by the use of penile prosthetic implantation as the primary therapeutic modality, even in the higher risk diabetic population [9], it is likely that the need for renal transplantation following penile prosthesis operations will continue to confront transplant surgeons.

Because a penile prosthesis is a foreign body, we think that it may lead to stasis, mechanical trauma and damage to genital tissue blood supply. In addition, the presence of diabetes in an immunosuppressed patient with a penile prosthesis increases the risk of contracting Fournier’s gangrene.

We believe that in diabetic patients with a penile prosthesis, careful selection is necessary before these patients can be considered as candidates for renal transplant surgery to avoid the possibility of developing Fournier’s gangrene.

Conflict of interest statement. None declared.

References


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