

Ureteroperitoneostomy – a rare complication after kidney transplantation

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Dear Editor,

Urine leakage is an early complication after kidney transplantation (KTx) with an incidence between 2% and 5% [1–3]. It usually presents as extraperitoneal urinoma because of the extraperitoneal location of the graft. Intra-peritoneal urine leak (IUL), however, is very uncommon. The present case exemplifies this rare entity of IUL after KTx and addresses the insufficiency of standard diagnostic tools.

A 55-year-old patient suffering from diabetes nephropathy underwent deceased-donor Ktx. Immunosuppression included cyclosporin, mycophenolate mofetil and steroids. Postoperatively, the graft showed delayed graft function resulting in regular haemodialysis. Rejection and vascular complications were excluded using ultrasound and biopsy. On day 14, the patient suffered from acute lower abdominal pain. Ultrasound revealed normal circulation of the graft and no retroperitoneal fluid collection. Abdominal X-ray and CT scan did not elucidate the clinical status (Fig. 1). Laboratory tests including CRP, complete blood count and electrolytes were inconclusive.

As a result of the sustained lower abdominal pain, urine leak was suspected, and the patient was re-explored. The graft looked normal. We explored the ureterovesical anastomosis, filled the bladder through a transurethral catheter and noticed no leak. Finally, we decided to dissolve the ureteral anastomosis and discovered that the thick-walled peritoneum was misapprehended as the wall of the bladder. This resulted in an ureteroperitoneostomy and IUL, as the graft function improved and diuresis increased. After performing a conventional extraperitoneal ureterocystostomy (CEU), the patient's diuresis was restored.

Ureteroperitoneostomy is an extremely rare cause of IUL and is clearly a technical failure. Out of 2000 kidney transplantations performed at our unit, this is the first case of ureteroperitoneostomy (0.05%). In the literature, there are few reports of accidental ureteroperitoneostomy during KTx and the patients had thick-walled peritoneum, most often because of peritoneal dialysis and repeated peritonitis [4,5]. In this particular

case, there was no history of peritoneal dialysis, and the aetiology of thick-walled peritoneum remains unclear.

Conventional extraperitoneal ureterocystostomy with urethral stenting is routinely performed at our unit. In our experience, however, CEU can resemble a simple hole-and-stitch-technique in some patients with atrophic and fragile wall of the urinary bladder. Thus, if a thick-walled peritoneum is mistaken for an atrophic urinary bladder, it might be possible that ureteroperitoneostomy occurs, even when a CEU is intended.

Diagnosing IUL is difficult. Ultrasound, CT scan or cystoureterography are inconclusive. Cystoscopy, if considered, might be of value only in patients with ureteral stent. Renal scan with mercaptoacetyl triglycerine (Tc-99m MAG₃) can lead to the diagnosis, but is not always available for acute and non-elective diagnostics. A further limitation is that excretion of Tc-99m MAG₃ into the biliary



Figure 1 Abdominal X-ray showing a ureteral stent with normal distal projection at the level of the urinary bladder. Same finding was demonstrated by the CT scan (data not shown).

system can be misinterpreted as evidence of intraperitoneal urine fistula [6].

We conclude that acute localized abdominal pain after KTx should remain the most important diagnostic clue to IUL. If urine leak in a kidney transplant recipient is clinically suspected, the lack of extraperitoneal urinoma combined with normal appearance of ureter and ureteral anastomosis should draw attention to the possibility of an accidental ureteroperitoneostomy. In this case, we strongly recommend dissolving of ureteral anastomosis to exclude accidental ureteroperitoneostomy.

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