A Long-Forgotten Indwelling Single-J Stent in a Transplant Kidney

Dehui Lai¹, Yongzhong He¹, Yuping Dai², Tian Li¹, Meiling Chen¹ and Xun Li¹

ABSTRACT

Ureteral stent placement is usual after renal transplantation to avoid ureteral obstruction and facilitate reconstruction. However, stent is prone to infection, encrustation, migration, fragmentation, obstruction, and even obstructive nephropathy with a long-indwelling time. Forgotten ureteric stent in renal transplant recipients is scarcely reported. Here, we present a case of long-forgotten indwelling single-J stent for 5 years in a transplant patient.

Key Words: Forgotten ureteric stent. Transplant kidney. Endoscopic management.

INTRODUCTION

Ureteral stent is commonly used in urological procedure, including renal transplantation. However, stent is prone to infection, encrustation, migration, fragmentation, obstruction, and even obstructive nephropathy with a long-indwelling time, which may be a catastrophe of renal transplant patient.¹ ² There are very few reported cases of forgotten ureteric stents in renal transplant recipients.

Here, we present a case of long-forgotten indwelling single-J stent in a transplant patient, which was successfully managed with endoscopic method.

CASE REPORT

A 47 years female, who had received a right-sided renal transplantation because of severe chronic renal dysfunction in another centre 5 years ago, was admitted to the study hospital with a severe frequent micturition and intermittent macroscopic haematuria in 2010. Cord-like echoes in renal pelvis were shown on ultrasonography. Urine white blood cell counts were more than 25/µl, but urine culture was negative. A routine plain abdominal radiograph subsequently demonstrated that a single-J stent was placed in right ureter with a J-tail in transplant kidney (Figure 1). Computed tomography (CT) confirmed the stent was smooth and without stone formation (Figure 2).

Under local anaesthesia, the patient was placed in the lithotomy position. A rigid 8.0/9.8 ureteroscope was introduced into the right ureteral orifice with a guidewire, while the assistant was pressing the transplant kidney and right lateral abdominal wall inward and downward simultaneously. Subsequently, the stent was grasped with forceps. The extracted stent was intact with minimal encrustation (Figure 3). The patient was discharged from hospital 3 days later without frequent micturition, macroscopic haematuria and hydronephrosis. A stable renal function and normal urine test were recorded at a follow-up of 2 years.

DISCUSSION

Ureteral stent placement is usual after renal transplantation to avoid ureteral obstruction and facilitate reconstruction.¹ ² Normally, it is left for a period of 2 - 4 weeks.³ ⁴ The incidence of stent encrustation and fragmentation, as well as obstructive nephropathy increases with the dwell time. Many a times, stents are not removed in patients because either the patients are not aware of stents, or the hospital had a poor administration of stent registry. Patients with live related renal transplantation usually have a special registry at a follow-up, a long-forgotten ureteral stent is a rare. Only 9 cases have been reported in literature (Table I). With the development of endourology, these cases were all managed by endoscopic techniques. However, percutaneous nephrostomy (PCN) was required to remove the stent because of severe encrustation, fragmentation or large stone burden.⁵ - ⁹ Only Yenicesu et al.¹⁰ and Singh et al.¹¹ separately reported a case which was completely removed in retrograde approach.

Routinely a double-J stent is placed in ureter in cases of ureteral obstruction after renal transplant. But, it was single-J stent in this case. To the authors' knowledge, we report the first one single-J stent retained in situ in renal transplant patient. Although the stent was minimally encrusted and without associated stone formation on CT scan, its retrieval with retrograde approach is also difficult, because the new ureteral orifice are often located in the anterior dome and lateral wall of bladder. Sometimes, with rigid ureteroscope alone, it may be unrealistic to reach the ureter. Without the proximal J-tail, it
is also difficult for using flexible ureteroscope and grasp basket to remove the stent. In this case, the stent was successfully removed by ureteroscope. Accessing the vesicoureteric orifice is the key of the procedure. Although multimodal minimally invasive endoscopic techniques can remove the forgotten indwelling stents, the best treatment remains prevention. Computerized stents registry should be created. Patients should be counselled regarding the complications of stents indwelling and advised as to when their stents should be removed. The surgeon should be quite selective in putting the stent and must track very closely by documenting the insertion and retrieval of them. Some authors showed that the use of computerized tracking system for removal of stents can reduce the lost stent exchange ratio from 12.5% to 1.2% and 1.5% in the first and second years.12

REFERENCES


Table 1: Reported forgotten ureteral stents in renal transplant patients (1989-2012).

<table>
<thead>
<tr>
<th>Case</th>
<th>Year</th>
<th>Author</th>
<th>Age</th>
<th>Presenting complaint</th>
<th>Duration of stent</th>
<th>Pre-operative imaging</th>
<th>Operative procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1989</td>
<td>Gedroyc et al.</td>
<td>3</td>
<td>UTI</td>
<td>17 months, double-J</td>
<td>KUB</td>
<td>PCNL + extraction</td>
</tr>
<tr>
<td>2</td>
<td>1999</td>
<td>Gustacchini et al.</td>
<td>45</td>
<td>Recurrent UTI</td>
<td>3 years, double-J</td>
<td>Ultrasound + KUB</td>
<td>Cystoscopy + PCNL</td>
</tr>
<tr>
<td>3</td>
<td>2002</td>
<td>Henderson et al.</td>
<td>52</td>
<td>Not reported</td>
<td>5 months, double-J</td>
<td>Unreported</td>
<td>PCNL + URS + Ho:YAG laser</td>
</tr>
<tr>
<td>4</td>
<td>2002</td>
<td>Henderson et al.</td>
<td>59</td>
<td>Not reported</td>
<td>6 months, double-J</td>
<td>Unreported</td>
<td>PCNL + URS + Ho:YAG laser</td>
</tr>
<tr>
<td>5</td>
<td>2004</td>
<td>Yenicesu et al.</td>
<td>34</td>
<td>Hematuria + Dysuria</td>
<td>7 years, double-J</td>
<td>Ultrasound + KUB</td>
<td>Cystoscopy + removal under fluoroscopy</td>
</tr>
<tr>
<td>6</td>
<td>2005</td>
<td>Romanowsky et al.</td>
<td>48</td>
<td>Recurrent UTI</td>
<td>4 years, double-J</td>
<td>KUB + CT abdomen and pelvis</td>
<td>PCNL + ultrasonic lithotripsy</td>
</tr>
<tr>
<td>7</td>
<td>2005</td>
<td>Singh V et al.</td>
<td>Unknown</td>
<td>Hematuria + UTI</td>
<td>1 year, double-J</td>
<td>Ultrasound + KUB</td>
<td>Retrograde approach</td>
</tr>
<tr>
<td>8</td>
<td>2006</td>
<td>Veltman Y et al.</td>
<td>47</td>
<td>UTI</td>
<td>5 months, double-J</td>
<td>KUB + CT abdomen and pelvis</td>
<td>PCNL + URS + Ho:YAG laser + Cystoscopy + lithotripsy</td>
</tr>
<tr>
<td>9</td>
<td>2009</td>
<td>Bhuva S et al.</td>
<td>32</td>
<td>Nocturia + poor urinary stream</td>
<td>10 years, double-J</td>
<td>Ultrasound + KUB</td>
<td>Cystoscopy + PCNL</td>
</tr>
<tr>
<td>10</td>
<td>2012</td>
<td>Present</td>
<td>47</td>
<td>Hematuria + UTI</td>
<td>5 years, single-J</td>
<td>Ultrasound + KUB + CT abdomen and pelvis</td>
<td>Ureteroscopy</td>
</tr>
</tbody>
</table>

UTI = Urinary tract infection;  PCNL = Percutaneous nephrolithotomy;  URS = Ureteroscopy.

