

Renal Failure Secondary to Transurethral Resection of Bladder Tumors at the Ureteric Orifice: A Serious, Poorly Known Complication

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ABSTRACT

We report a case of severe bilateral distal ureteral stenosis in a 76-year-old male. The stenosis was caused obstructive renal failure after transurethral resection of a periorificial bladder tumor and early postoperative bacillus Calmette-Guerin therapy instillation to prevent recurrence.

KEYWORDS: Ureter; Bladder neoplasms; Postoperative complications; Endoscopy

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Abbreviations and Acronyms

CT, computed tomography

TURBT, transurethral resection of bladder tumor

INTRODUCTION

Distal ureteral stenosis is a rare complication of transurethral resection of bladder tumors (TURBT) [1]. We report a rare case of bilateral intramural ureteral obstruction caused by distal intrinsic ureteral stenosis that led to ureterohydronephrosis.

CASE REPORT

A 76-year-old male with no significant medical history underwent transurethral resection of a large (4 cm in diameter) papillary tumor. The tumor was located at the trigone of the bladder and around the 2 ureteric orifices. The surgeon did not report any other mucosal abnormalities. He performed a complete, deep resection with correct coagulation of the tumor bed. He thought that the 2 ureteric meatus were coagulated.

Pathology concluded a low-grade transitional carcinoma of the urinary bladder (pT1 G1) without concomitant carcinoma in situ (CIS), according to World Health Organization classification, 2004. The renal function was normal at that time. A postoperative computed tomography (CT) scan did not reveal any upper urinary tract tumor.

The patient had a moderate risk of recurrence, so adjuvant therapy was needed. He received intravesical bacillus Calmette-Guerin (BCG) therapy instillations weekly for 6 weeks and then monthly for 6 months. The 2 cystoscopic controls performed at 3 and 9 months postoperatively did not reveal any tumor recurrence.

A severe increase in the serum creatinine was noticed after 12 months of follow-up. Ultrasonography concluded that the patient had bilateral ureterohydronephrosis with reduced renal parenchyma on the left side. Cystoscopy revealed a free-tumor bladder with a well-opened prostatic urethra; however, the 2 ureteral orifices were not detected.

Right percutaneous nephrostomy was performed for urinary diversion; antegrade pyelography concluded that there was ureterohydronephrosis with distal stenosis. The stenosis was successfully managed by transurethral resection of the scar tissue (guided by antegrade opacification) and bilateral ureteric stenting. Pathological study concluded that there was prostatic benign tissue with intense fibrosis reaction without any evidence of prostatic cancer.

Despite the endoscopic treatment taken, the patient progressed with continuing renal failure that required hemodialysis.

DISCUSSION

Intentional resection of the ureteral orifice and intramural ureter has been reported in association with conventional TURBT [1,2]. Several reports suggest that resection of the distal ureter at the time of TURBT is associated with significant risk of reflux [2] but a relatively low risk of stricture [1,3].

Stenosis causes upper urinary tract distension, secondary renal parenchyma deterioration, and renal failure [3]. Therefore, renal impairment in the present case was believed to be caused by upper urinary tract obstruction due to bilateral intramural ureteral stenosis.

The diagnostic and therapeutic approach to bladder tumors located on the ureteral orifice must include joint resection of the tumor with a fragment of the meatus itself, taking caution to avoid coagulation on the ureteral orifice to prevent secondary stenosis [3,4]. In high-risk cases, particularly after ureteral meatus coagulation, ultrasonography and intravenous urogram (IVU) or CT scan should be performed within 2 months to make an early diagnosis [3]. The treatment of stenosis consists of endoscopic meatus dilation with double-J stent insertion or ureteral reimplantation.

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