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CASE REPORT

A New Self-expanding, Large-caliber Ureteral Stent Applied for Bilateral Long-segment Ureteral Strictures — A Case Report

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Urologists are experiencing difficulties managing ureteral strictures (US). Several treatment options have been used to treat US. Here, we present two patients with US. The first case is a 49-year-old woman with a history of squamous cell carcinoma of the cervix, status postlaparoscopy-assisted vaginal hysterectomy and radical parametrectomy, and bilateral pelvic lymph node dissection with recurrence. She regularly underwent double-J catheterization for bilateral US. The second case is a 66-year-old woman with a history of serious papillary adenocarcinoma of the endometrium, poststaging laparotomy with extrafascial hysterectomy + bilateral salpingo-oophorectomy + bilateral pelvic, common iliac, and para-aortic lymph node dissection + omentectomy. She regularly underwent double-J catheterization because of bilateral US. Allium stents have been used to treat US. Hydronephrosis improved in both patients. Renal function improved in one patient. A new self-expanding, large-caliber ureteral stent is another treatment option for patients requiring internal ureteral drainage.

Key words: Ureteral strictures, ureteral stent, allium stents, hydronephrosis

INTRODUCTION

Ureteral strictures (US) can be a recurrent chronic illness that leads to severe side effects and poor quality of life. [1] Several options can be used for its treatment, including repeated dilations, stents, minimally invasive reconstructive surgeries, and urinary diversion or nephrectomy. [1] Ureteral stent placement is a good minimally invasive option but has major limitations, such as stent migration, mucosal ingrowth, incrustation, and stent obstruction. [2] Thus, a new self-expanding, large-caliber ureteral stent was designed as an option to manage US. Some studies have reported a low migration rate, improved hydronephrosis volume, and decreased blood creatinine levels. However, no case report has been published regarding the management of long-segment US in Taiwan.

CASE REPORTS

The first case was a 49-year-old woman with a history of nonkeratinizing squamous cell carcinoma of the cervix, large cell type, FIGO stage IB1, AJCC pT1b1N0M0 status postlaparoscopy-assisted vaginal hysterectomy, radical parametrectomy, and bilateral pelvic lymph node dissection, with recurrence after concurrent chemoradiotherapy. She regularly underwent double-J catheterization for bilateral US. Unstable creatinine level was observed even after double-J catheterization. Thus, we switched to a self-expanding, large-caliber ureteral stent. We overlapped the two stents to manage the long segment of the stricture site [Figure 1]. The patient was followed up at our outpatient department. Kidney sonography revealed improved hydronephrosis of the left kidney. The creatinine level did not return to the normal range, which may be due to a chronic kidney injury [Figure 2]. No large fluctuations were observed after placing the large-caliber stent.

The second case was a 66-year-old woman with a history of serious papillary adenocarcinoma of the endometrium, poststaging laparotomy with extrafascial

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hysterectomy + bilateral salpingo-oophorectomy + bilateral pelvic, common iliac, and para-aortic lymph node dissection + omentectomy + peritoneal washing cytology, pT1bN0M1, stage IVB. She regularly underwent double-J catheterization because of bilateral US. The creatinine level was within the normal range; however, fluctuations were still noted. The patient was asked to undergo long periods of ureteral stent revision. Therefore, we placed a new ureteral stent [Figure 3]. The patient was then followed up at our outpatient department. The creatinine level was stable [Figure 4]. Hydronephrosis of the bilateral kidney improved on sonography.

DISCUSSION

Determining creatinine levels is an easy method for evaluating renal function. An unstable creatinine level after ureteral stent placement indicates stent malfunction. Migration, obstruction, and reflux may be the causes of decreased renal function. The new large-caliber, self-expanding ureteral stent is covered with a new biocompatible polymer on the entire stent.[3] This makes it a nonpermeable tube that prevents tissue ingrowth into the lumen and early encrustation. Bilateral hydronephrosis did not progress in either patient. Therefore, a new stent can be safely placed in the ureter for a long time.

The limitation of this new stent is its length because only two sizes were designed: 10 and 12 cm. Thus, the use of this new stent to manage long-segment US is challenging. In our patients, we first placed a stent at the proximal stricture site. The second stent was then applied approximately 2 cm overlapping distally to the first stent under fluoroscopy. The lumen was not compressed at the junction. No migration was noted on an abdominal plan film performed in the outpatient department. This procedure appears feasible for the management of long-segment ureters.

CONCLUSION

However, we could not ensure that the biocompatible

Figure 1: We overlapped the two stents to manage the long segment of the stricture site

Figure 3: We overlapped the two stents to manage the long segment of the stricture site

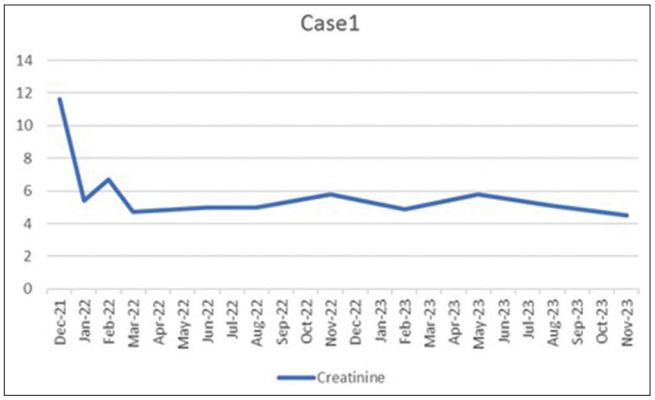

Figure 2: The creatinine level did not return to the normal range, which may be due to a chronic kidney injury

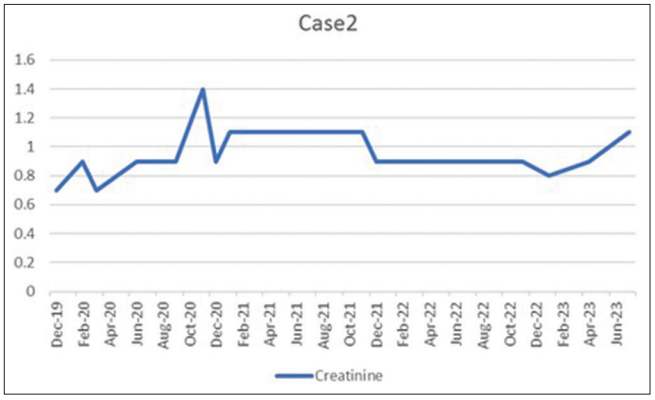

Figure 4: The creatinine level was stable

polymer coverage was intact or damaged at the junction of the two overlapping stents. The overlap site may be a weak point, making stone, or tissue ingrowth easier. Thus, after manipulating the stent, its life efficacy is unknown, resulting in our patients requiring more frequent hospital follow-up.

Ethical approval statement

This study was conducted in accordance with the ethical principles outlined in the Declaration of Helsinki and its amendments. The authors certify that they have obtained all appropriate patient consent forms. In the forms, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Data availability statement

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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