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## When stents kiss — management of bilateral ureteral obstruction

**Keywords:** interventional radiology, ureteral stents, anastomotic strictures

Radical cystectomy and urinary diversion are the established therapeutic approaches for locally advanced bladder cancer. Ureteroenteric anastomotic strictures are a common complication of urinary diversion procedures, with occurrence reaching up to 10% [1]. Although surgical repair with excision of the strictures is the gold standard, endourological procedures benefit from reduced morbidity and shorter hospitalization [2]. We present a case of using a self-expanding, large-caliber ureteral stent (URS) in a patient with recurrent ureteroenteric strictures.

A 71-year-old male patient was admitted to the urology clinic for bilateral narrowing of the ureteroenteric anastomosis. The patient had undergone radical cystoprostatectomy at the age of 68 for urothelial bladder cancer (T2N0M0) with the creation of a ureteroenteric anastomosis using the Bricker method. Since then, the patient was repeatedly hospitalized due to obstructive uropathy, which was managed percutaneously using nephrostomy or double-J stent placement (Fig. 1). Due to the patient's general condition making it impossible to perform open surgery and deterioration in the quality of life resulting from recurrent double-J stent exchanges, the patient was qualified for simultaneous placement of bilateral covered URS Allium (Allium LTD, Caesarea, Israel).

The procedure was performed in the angio-suite by interventional radiologists with over 15 years of experience. Bilateral nephrostomy tubes were used to introduce guidewires into the calyx-pelvic system; then the nephrostomies were removed and replaced with 5F vascular sheaths. Guidewires were advanced through the ureters and passed through the strictures in the ureteroenteric anastomosis reaching the ileal conduit (Fig. 2). Both guidewires were extended through the urostomy outside the patient, creating a route along which bilateral balloon dilatation of the narrowed segments was performed using 4 mm balloons. Subsequently, two Allium URS were implanted into the constricted segments and were molded using 5 mm diameter balloon catheters (Fig. 3). The procedure concluded with confirmatory pyelography, visualizing contrast flow into the ileal conduit, confirming successful intervention. Subsequently, the patient's renal parameters improved, and he was discharged in stable condition (Fig. 4). Follow-up over the next 20 months demonstrated that the URS remained patent.

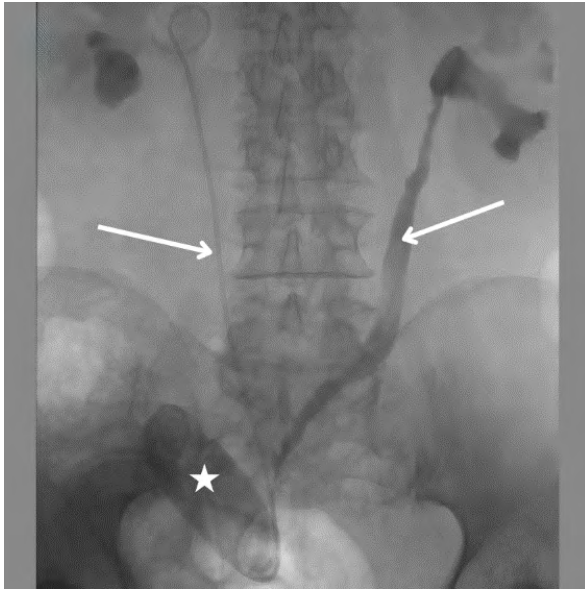
This case presents the procedure of simultaneously placing bilateral URS using the kissing technique. The Allium URS are coated with a copolymer that prevents tissue ingrowth and encrustation and has a high radial

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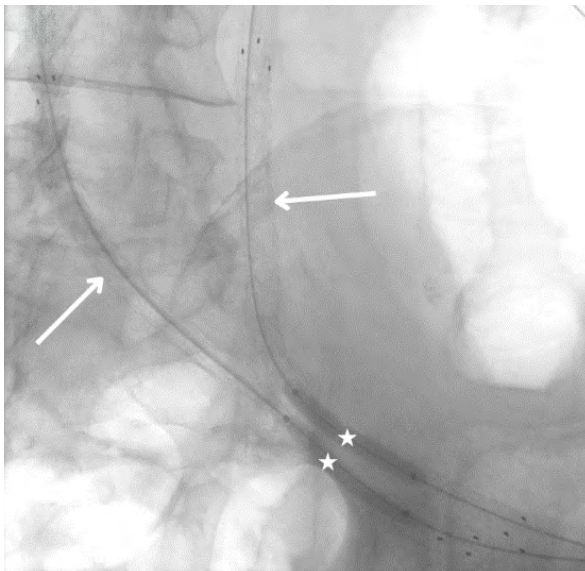
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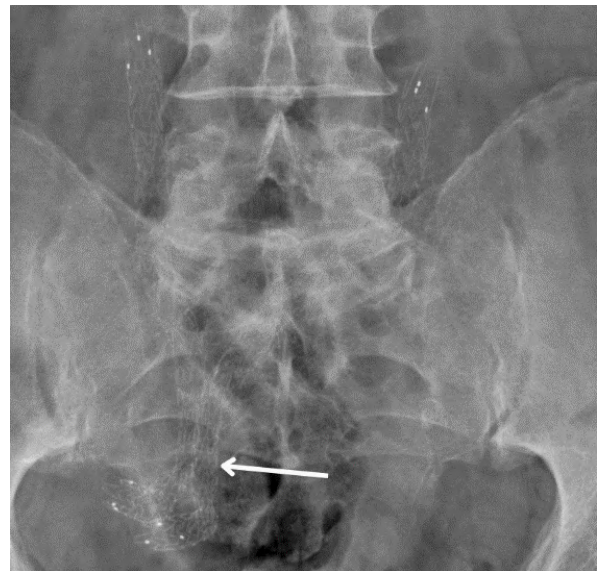
**Figure 1.** Pyelography showing bilateral double-J stents inserted into the ureters after a urinary diversion procedure. Double-J stents (white arrows) effectively alleviate obstructive uropathy caused by strictures at the uretero-intestinal junctions. White asterisk — ileal conduit



**Figure 2.** Pyelography revealing obstructive uropathy due to strictures (white arrow) at ureteroenteric junctions, highlighting the site of narrowing



**Figure 3.** Bilateral placement of self-expanding large-caliber metal stents within the ureters (white arrows). The stent copolymer coating inhibits epithelial ingrowth and encrustation. A 120 mm stent length was chosen to minimize migration risk. Post-deployment, the ureteral stents were segmentally molded (kissing technique) using 5 mm balloons (white asterisk) to resolve the strictures



**Figure 4.** RTG made one day after the procedure. The stents have thermal memory. Over time, they widen trying to return to their original manufactured diameter

force to widen strictures [3]. Large-group experiences with Allium stents report that in the median follow-up of 18 months, the overall success rate was 85.5% [4].

If removal becomes necessary, the URS can be extracted via the cystoscopic approach by grasping the anchor with endoscopic forceps.

## Article Information and Declarations

### Ethics statement

The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All procedures performed in this study were in accordance with the ethical standards of the institutional research committee and with the Helsinki Declaration. Written informed consent was obtained from the patient for the publication of this case report and accompanying images.

### Author contributions

P.B.: involved in the clinical care of the patient, critical revision of manuscript, give final approval of the manuscript; M.C.: involved in the clinical care of the patient, drafting of the text, sourcing and editing of clinical images; E.K.: research and conceptualisation, drafting of the text; Ł.Ś.: involved in the clinical care of the patient, sourcing and editing of clinical images; K.P.: involved in the clinical care of the patient, sourcing and editing of clinical images, critical revision of manuscript, give final approval of the manuscript.

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### Conflict of interest

The authors declare no conflict of interest.

### Supplementary material

None.

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