CASE REPORT

Ureteric access sheath aided insertion of resonance metal ureteric stent

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SUMMARY

Ureteral obstruction caused by malignancy is a challenging and often complicated problem for urologists. We present a novel technique of ureteric access sheath aided insertion of a Resonance metal ureteric stent in the setting of a difficult obstruction.

BACKGROUND

Ureteral obstruction caused by malignancy is a challenging and often complicated problem for urologists.^{1 2} As ureteral reconstruction is not practical given the limited life expectancy, ureteral stents or percutaneous nephrostomy is a commonly used solution.¹ Ureteral stents are preferred due to convenience, increased quality of life, avoidance of an external foreign body and ease of return to activities.^{1 3}

The patency rate of polymeric stents in the setting of malignant obstruction is approximately 58–84%.^{1 3} Metallic mesh stents have patency rates up to 100% in some series, however these stents can be prone to tumour ingrowth.¹ The metal Resonance ureteric stent has gained popularity due to its spiral coiled design, resistance to compression, tolerability and cost benefit compared with polymer stents.^{3 4} It is a double pigtail, flexible, 6 Fr stent without patent ends and allows urine flow between and around the coils. It is intended to remain indwelling for up to 12 months.³ The insertion of the Resonance stent requires the passage of a guide wire into the renal pelvis followed by an 8.3 Fr introducer sheath over the wire. The wire is then removed and the metal stent is fed within the introducer sheath for appropriate placement.

Figure 2 Right retrograde pyelogram revealing a tortuous right ureter.

CASE PRESENTATION

We present a novel technique of ureteric access sheath aided insertion of Resonance metal ureteric stent in a 38-year-old man with metastatic retroperitoneal sarcoma. The large retroperitoneal sarcoma had caused significant compression and deviation of the right ureter (figure 1). The decision was made to insert a metallic stent given his limited life expectancy and failed chemotherapy treatment.

Figure 1 Axial CT scan revealing a large retroperitoneal sarcoma with compression and deviation of the right kidney and adjacent retroperitoneal structures.

Figure 3 Fluoroscopic image of the ureteric access sheath within the ureter assisting placement of Resonance metal stent.

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Figure 4 Plastic stent pusher placed within the ureteric access sheath for placement of the Resonance metal stent.

TREATMENT

A cystoscopy was performed and a right retrograde pyelogram was performed which revealed a tortuous ureter with proximal compression (figure 2). A sensor wire was successfully navigated to the renal pelvis. An 8.3 Fr introducer could not be passed successfully to the renal pelvis due to the tortuous ureter. An attempt was made to straighten the ureter by switching over to a super-stiff wire. This was able to enter the renal pelvis however the 8.3 Fr introducer still could not be advanced beyond the obstruction.

To overcome this dilemma a novel technique was trialled. A Boston Scientific Navigator 11/13Fr Ureteral Access Sheath was advanced into the distal ureter and passed proximally with success (figure 3). The Resonance metal stent was then able to be inserted within the access sheath and successfully deployed with the aid of the plastic stent pusher (figure 4).

DISCUSSION

The Resonance metal ureteric stent withstands compression and intraluminal forces.¹ The coiled metal stent is a good option for the long-term management of malignant ureteric obstruction.³ This is the first reported case, to the best of our knowledge, of the use of a ureteric access sheath to insert a Resonance metal ureteric stent. In the advent of a tortuous ureter and difficulty inserting the introducer sheath, we report the successful and safe use of a ureteric access sheath to aid insertion of the Resonance metal stent.

Learning points

- ▶ Malignant ureteric obstruction can pose a management dilemma.
- ▶ The Resonance metal ureteric stent provides a minimally invasive solution.
- ▶ The assistance of an access sheath can provide stability in a tortuous ureter for the deployment of a Resonance metal ureteric stent.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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