

First Experience of Inserting a Metallic Mesh Stent (Uventa Stent) in Malignant Ureteral Obstruction in Iran

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Malignant ureteral obstruction is usually caused by an extrinsic compression including intra-abdominal cancers. One of the treatment modalities decompressing the obstruction is applying stent to open the ureter. Metallic Stent is an effective instrument which we used for the first time in Iran in our patient who had a metastatic colon cancer with a single kidney and we used a Novel, Double-Layered, Coated, Self-expandable Metallic Mesh Stent (Uventa Stent) to keep the ureter open. After six months of follow up with ureteroscopy, there was no obstruction any more.

INTRODUCTION

A variety of pelvic, retroperitoneal or metastatic malignancies may cause ureteral obstruction. Ureteral obstruction secondary to malignancy presents a challenging management scenario for the urologist. Traditional treatment modalities such as polymeric ureteral stents and percutaneous nephrostomy (PCN) tubes, an unwilling procedure because of daily life limitations, may be impaired by the progression of tumor.^(1,2) We report a 68-year-old man with metastatic colon cancer and right single kidney that we found his malignant ureteral obstruction due to colon cancer by ureteroscopic evaluation. This report was approved by the Ethics Committee of Iran University of Medical Sciences. An informed consent was taken from the patient.

CASE REPORT

A 68-year-old man with metastatic colon cancer referred to our clinic because of hydro-uretero-nephrosis and raised creatinine last year. He had a flank pain but no tenderness without any other symptoms. He had a past surgical history of left nephrectomy 10 years ago because of left kidney cancer and also a total colectomy+ileosigmoid anastomosis three years ago. His serum creatinine was 2.2 mg/dL. Pre-operation imaging including ultrasonography and computed tomography (CT) scan made us suspicious to internal stricture of the ureter. Proving the



Figure 1. Fluoroscopic view of the stricture during surgery.



Figure 2. Ureteroscopic view of the stricture during surgery.

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Figure 3. Intravenous pyelography after the surgery.



Figure 4. Intravenous pyelography 6 months after the procedure.

existence of stricture and accessing the exact length of it, we performed ureteroscopy. On ureteroscopy, he had a stricture in the middle of ureter.

We inserted a temporary Double J (DJ) stent which did not help to solve the obstruction and creatinine rised. After that we used the Uventa stent, a double-layered, coated, self-expandable metallic mesh stent in the middle of the right ureter to open the stricture. (**Figures 1, 2**) After placing the stent, patient's creatinine decreased. We requested an intravenous pyelogram (IVP) after the surgery which seemed to be good. (**Figure 3**) Six months later, we re-evaluated the patient by ureteroscopy. There was no stricture anymore and the stent was in the correct position. Patient had no more complain of flank pain. Serum creatinine was in the normal range. Then we requested an IVP for the patient. (**Figure 4**)

DISCUSSION

Using a metal stent is not a common way to open the obstruction of ureter secondary to malignancy.⁽³⁾ Uventa stent, a type of metal stent, is a nickel-titanium alloy, segmental, thermally expandable stent.⁽⁴⁾ Being thermo- and self-expandable and providing less frequent complications including irritation are considered to be the advantages of Uventa stent.^(4,5) Chung et al. believed that using Uventa metal stent is an effective option to decrease malignant obstruction of ureter's symptoms.⁽⁴⁾ As we reviewed in literatures, Uventa stent for ureteral stricture was manufactured since 2013 and a few countries like Italy, Spain and North Korea used this stent recently. The total number of the patients in whom the Uventa ureteral stents were inserted is less than a hundred.⁽⁶⁾

Although long term follow up of these patients are not available, but short and middle term follow up show the efficacy and safety of these stents. After stent insertion, the patient should be under close follow up with IVP or ureteroscopy due to delayed stricture. The stent should

be removed 12 months later.⁽⁷⁾ No severe complications are mentioned but some minor complications like persistent flank pain, lower urinary tract infection and stent migration are considered in previous studies.⁽⁸⁾ Our patient had no minor and major complications and six month ureteroscopic follow up demonstrated the patency of the metallic stent. Re-evaluating the patient using ureteroscopy had some reasons including confirming the patency of the stent and excluding stent encrustation. As stent failure is a result of tumor progression in other parts of the ureteral segment, long term follow up of our patient is obligatory.

In conclusion, there are different treatment strategies for the management of malignant ureteral obstruction. Due to complications and patient's complains, inserting a ureteral metal stent (such as Uventa stent) seems to be a safe and efficient treatment for these patients.

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