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CASE REPORT
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A Rare Complication: Removing the Guide Wire Pieces Remaining in the Calyx After Nephrostomy by Retrograde Ureterorenoscopy

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ABSTRACT

Introduction: Ureterorenoscopy is a frequently applied technique in stone surgery, and its complications are rare with the development of endoscopic materials. In cases where progress cannot be made through the ureter, antegrade interventions or a catheter must be inserted. In this case, we tried to explain the management and removal of the guidewire pieces that could not be performed with URS and remained in the calyx during the insertion of the nephrostomy catheter.
Case: In a 64-year-old patient who applied to the external center with the complaint of left flank pain, a left ureteral stone was detected, then URS was performed and the stone could not be reached due to proximal ureteral cyst. Subsequently, a nephrostomy catheter was inserted. The patient then underwent flexible URS and guidewire fragments were seen. An annual DJ catheter was applied and then the patient was passed through the dilated ureter with a rigid URS and the existing guyite pieces were removed.
Discussion and Conclusion: Ureteric strictures are rare complications with a rate of 9% and improvements. It usually does not require additional intervention, but rare and challenging situations may occur, as in our case. Complications such as failure to enter the collecting system, bleeding, and infection may also occur during percutaneous nephrostomy. In this type of URS cases, the limits of endoscopic interventions should be taken into consideration and contrast-enhanced images revealing the anatomy should be taken.

Keywords: Nephrostomy, Ureterorenoscopy, Flexible URS.

INTRODUCTION

Rigid and flexible ureterorenoscopy (URS) is a frequently applied surgical technique in urological stone surgery, and with the development of endoscopic materials, especially flexible URS has become more widely used. Although URS is frequently used today, different surgical procedures or open surgeries come to the fore in cases such as ureteral stenosis, large stones, and impaired kidney function. Although rare, complications such as ureteral avulsion, stricture, lack of access, infection, bleeding, and ureteral obstruction are also observed in the URS method. Difficult access ureteric stenosis, which is one of the intraoperative complications, occurs in cases such as external pressure on the ureter, anatomical structure of the ureter, impacted calculus and edema. In cases where passage or progression to the ureter cannot be achieved, passive dilation of the ureter with double j (DJ) and provision of renal drainage are frequently preferred complication management. In cases where the DJ catheter cannot be placed and there is advanced hydronephrosis, nephrostomy placement and urinary drainage are considered(1).

In our case, we aimed to explain the extraction of guide pieces in the renal pelvis and complication management in our case, where URS was planned due to ureteric stone, but could not be performed due to proximal ureteral stenosis, nephrostomy was placed, and the subsequent extraction of guide pieces in the renal pelvis

CASE

A 64-year-old female patient was did for URS at an external center due to left flank pain and a 12 mm stone in the left proximal ureter a year ago. Since there was a king in the ureter and it could not be passed, a left nephrostomy catheter was inserted into the patient and antegrade pyelography was taken (Picture 1.)

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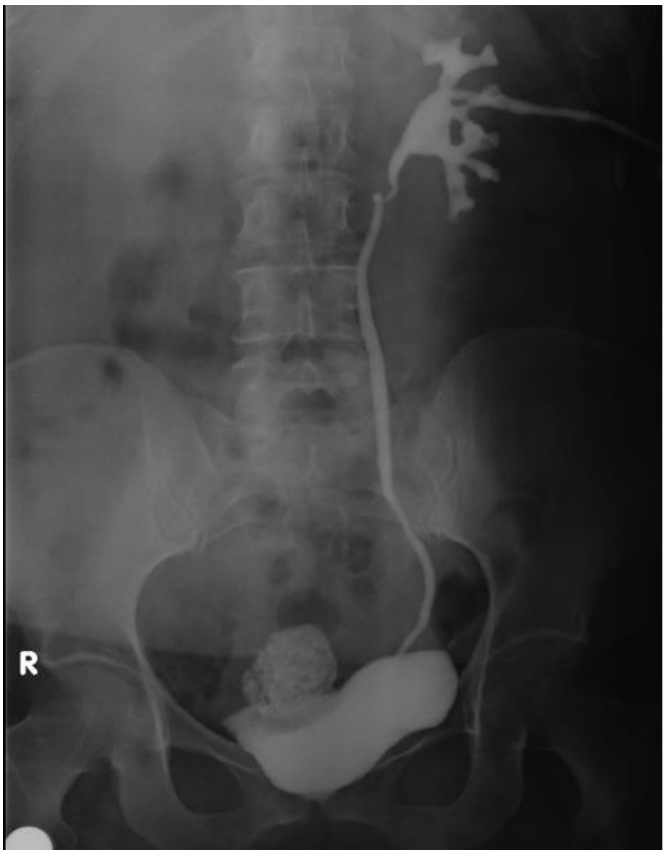
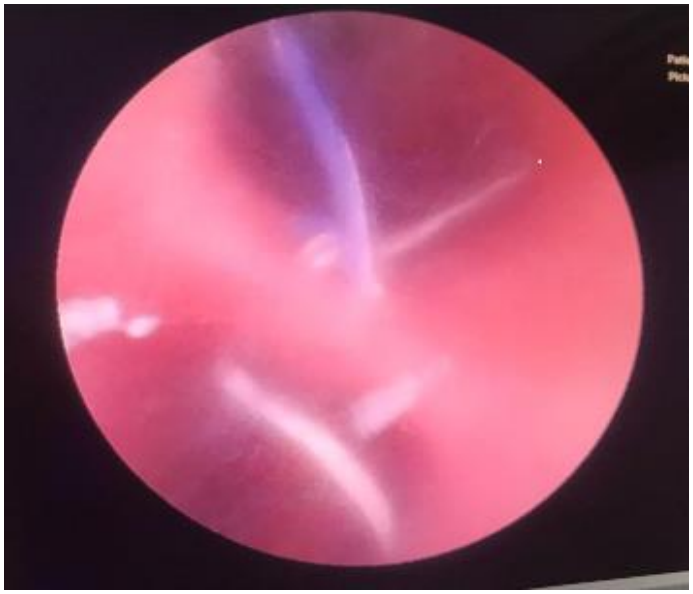


Picture 1. nephrostomy and antergade pyelograhy

Subsequently, a second operation was planned and a DJ catheter was placed in the patient, but since the stone could not be extracted, open ureterolithotomy and pyeloplasty were recommended. Three months ago, the patient did not accept the recommended treatment and after that applied to us. The operation was planned after obtaining the necessary consent and permissions from the patient. The patient's DJ catheter was removed and diagnostic URS was performed. The existing stenosis line was passed with a flexible URS and the inside of the kidney was seen. All calyces were examined, but no stones were found. In the upper and middle calyx group, 3 separate pieces of guide wires compatible with the guyt outer sheath were seen, and bleeding with pus was also observed (Picture 2.)



Picture 2. image of guide wire inside the kidney

A piece of guide was removed with the help of a flexible basket, but it was observed that 2 pieces were stuck in the mucosa and therefore the strength of the basket was not sufficient. An annual DJ catheter was placed in the patient and antibiotic treatment was started in accordance with the results of the pus culture. The patient was re-operated on the 6th postoperative month. DJ was removed and it was observed that the existing proximal ureteric stricture was dilated. With the help of rigid URS, the renal pelvis was ascended and the guide wire in the upper calyx group was extracted with foreign body forceps.

DISCUSSION

URS is perhaps one of the most commonly used surgical procedures in urology practice. Its frequency is increasing day by day with the development of thin ureteroscopes and lasers.

Although there is no standard classification, URS complications can be divided into major and minor depending on whether they require additional surgical intervention or not (2). Ureteral avulsion and intussusception are major intraoperative complications (3). Wrong passage, abrasions, ureter perforations, extravasation and equipment malfunctions constitute minor intraoperative complications (4). Apart from this, bleeding, infection, lack of access, Steinstrasse, vesicloureteral reflux and ureteral obstructions constitute postoperative complications (5). Bleeding, failure to enter the renal collecting system, extravasation and infection are among the possible complications of percutaneous nephrostomy placement.

Undoubtedly, ureteral avulsion is the most serious and feared complication of URS. With the development of more advanced equipment and increasing experience, it is almost not seen (4). It often occurs in the proximal ureter, during the extraction of the stone from the ureter, or when the ureterorenoscope is forced to pass through narrow ureters (6).

Ureter perforation is the most common complication with an incidence rate of approximately 15% (7). With the thinning of renoscopes and the emergence of flexible URSs, this complication has gradually decreased. Perforation can usually be easily resolved by placing a double stent and waiting for a while longer.

Ureteric strictures and ureteral obstructions occur at a rate of approximately 9% and are often caused by impacted stones, mucosal edema, urethral king, or external pressure (8). Although ureteral stenosis and kings can be easily overcome with the development of flexible URS, difficulties in instrument passage may occur in rare cases, as in our case. In such cases, nephrostomy placement is important to ensure renal drainage.

CONCLUSION

In URS surgery, which is frequently used in daily practice, complications are at minimum levels with increasing experience and technological developments. In rare cases, difficult cases or patients requiring additional intervention are encountered. At this point, it is important to evaluate the cases in the preoperative period, to have contrast images that will reveal the anatomical structure, and to consider URS limits and complications.

DESCRIPTIONS

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