

A simple manipulation for removal of large distal ureteral stone during standart ureterolithotomy: A Case Report

? Kenan, S Hamdi

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Abstract

A 41-year-old man who has undergone standart ureterolithotomy for large distal ureteral stone is presented. During operation, because of inflammatory alterations of the ureter and severe fibrosis with surrounding tissue, it was not possible to reach distal end of the stone. We performed a simple intraperitoneal manuplation which made the removal of the stone easier. In this report, this simple manuplation has been described.

INTRODUCTION

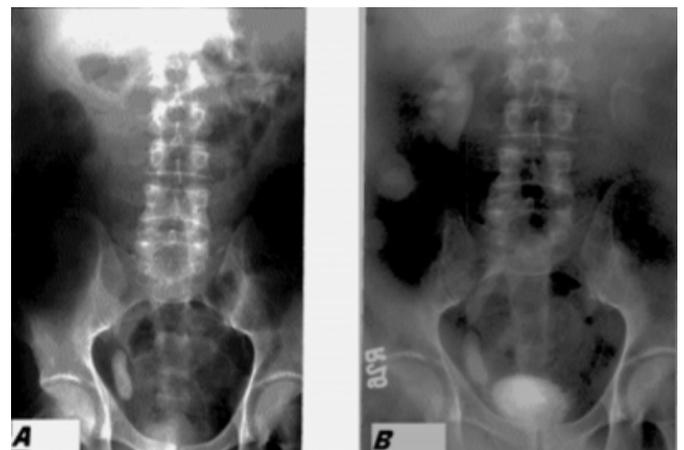
In the current age of minimally invasive therapy, open surgical procedures for stones removal are still performed. Open surgery is generally indicated for failed endourological procedures, and in patients with larger stones(>3cm)^[1]. Laparoscopic ureterolithotomy is a minimally invasive alternative treatment modality to open surgery for large ureteral stone^[2]. However, laparoscopic approach requires equipments and laparoscopic expertise. Herein, we describe a simple method which makes the removal of large distal ureteral stone easier during standart ureterolithotomy.

CASE REPORT

A 41-year-old man who has had previous history of ureterolithotomy twice on the same side. A 4.5 x 1.5 cm large distal ureteral stone was diagnosed at plain abdominal x-ray on the right side and intravenous urography(IVU)(Fig.1A,B).

Figure 1

Figure 1 A: Plain abdominal x-ray is showing a 4.5 x 1.5 cm opasite on the right side at bone pelvis. B: IVU is demonstrating a 4.5 x 1.5 cm stone in the right distal ureter with grade 3 hydronephrosis on the same side.

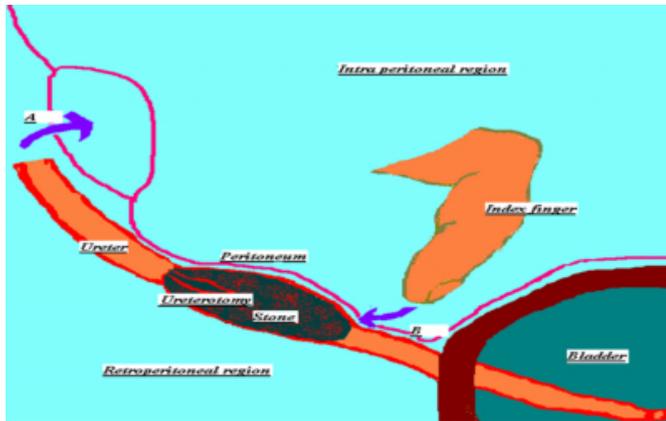


IVU also showed grade 3 hydronephrosis on the same side. Standart ureterolithotomy was planned. After modified Gibson incision, ureter was identified as it crossed the iliac vessels and it was dissected through distally until upper end of the stone. Because of inflammatory alterations of the ureter and severe fibrosis with surrounding tissue, it was not possible to reach distal end of the stone. After a 1,5 cm ureterotomy was performed at the proximal end of the stone, we tried to remove the stone but, we couldn't manage it. Therefore, we decided to do a simple intraperitoneal manuplation. Aproximately a 5 cm incision was made on the peritoneum and left hand was inserted into intraperitoneal space. The stone was palpated and it was pushed through

proximally to the ureterotomy by index finger (Fig.2).

Figure 2

Figure 2 A: An incision was performed on the peritoneum and left hand was inserted into intraperitoneal region B: The stone was palpated and it was pushed through proximally to the ureterotomy by index finger.



We did not encounter any complications during the manipulation. After the stone had been removed, a 8 F feeding tube was inserted into the ureter towards the bladder to exclude a ureterovesical obstruction at the time of the surgical intervention. The peritoneum was closed with 4/0 chromic suture and the ureterotomy was closed with 4/0 vickryl watertight suture. A 18 F nasogastric tube was placed as a drain in the retroperitoneal space. The drain was removed after 3 days and the patient was discharged on the fourth day after the operation. An IVU was obtained in the third month postoperatively. No postoperative stricture except mild dilation at the level of previous stone and renal pelvis was determined(Fig. 3A,B).

Figure 3

Figure 3 A: Plain abdominal x-ray is demonstrating complete stone clearance B: IVU is showing marked decrease in hydronephrosis in the third month after surgery.



DISCUSSION

Open ureterolithotomy has become very rare within the last decade due to the advent of less invasive procedures such as extracorporeal shock wave lithotripsy(SWL) and ureteroscopy stone removal or fragmentation. Less invasive procedures for ureteral stones include ureteroscopy stone basket extraction under direct vision and destruction of the calculus by various means, including electrohydraulic lithotripsy, ultrasound, pneumatic lithotripsy, as well as lasers such as the pulsed dye and holmium. However, some large(>3 cm) and impacted ureteral stones still require surgery[1]. The need for open surgery for treatment of urinary stones is 2.7 %[3]. Recently, laparoscopic ureterolithotomy which is a minimally invasive alternative to open surgery has been described for the treatment of large ureteral stone[2,4]. The indications for laparoscopic ureterolithotomy in the age of modern endourology include stones which cannot be accessed ureteroscopically or cannot be fragmented. The main advantages are decreased post-operative pain, shorter hospital stay, and quicker convalescence in comparison to open surgery. Most patients are able to return to normal activity less than 3 weeks after the procedure[5]. The disadvantages include the longer operative time, the risk of injury to intra-abdominal structures inherent in the laparoscopic approach, the risk of postoperative prolonged urine leak or urinoma and the risk of conversion to open surgery[4,5,6,7]. In addition, an impacted or large ureteral stone is always associated with chronic ureteritis, firmness, and adhesion of the periureteral tissue makes the retroperitoneoscopic procedure difficult[8]. Laparoscopic ureterolithotomy should be viewed as a

preferred alternative to open surgical ureterolithotomy when laparoscopic expertise is available. If the laparoscopic ureterolithotomy option is not available, standart ureterolithotomy is indicated in cases who have large ureteral stone.

In this case, we performed standart ureterolithotomy due to large and impacted distal ureteral stone. During the operation, because of inflammatory alterations of the ureter and severe fibrosis with surrounding tissue, it was not possible to reach distal end of the stone. Thus, we performed a simple intraperitoneal manuplation for the removal of the stone. No complication was encountered during the manuplation. This simple intraperitoneal manuplation made the removal of the stone easier and it decreased operative time and complications.

CONCLUSIONS

while most patients with ureteric calculi can be rendered stone-free with SWL and endourological procedures, open stone surgery continues to represent a reasonable alternative for a small segment of the urinary stone population. If the laparoscopic ureterolithotomy option is not available, standart ureterolithotomy is endicated in this population. The stone removal may be difficult in some situations like this case during standart ureterolithotomy. This simple manuplation may be helpful for surgeons to easy removal of

large distal ureteral stone during standart ureterolithotomy.

CORRESPONDENCE TO

Kenan isen Ofis cami sok. Ayyıldız Apt.,kat: 5 no:15
Diyarbakır, TR-21100, TURKEY Tel: +90.532.6180293 E-mail: kenanisen@hotmail.com

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Author Information

?sen Kenan, M.D.

Clinic of Urology, State Hospital of Diyarbakır

Sakarya Mehmet Hamdi, M.D.

Clinic of Surgery, State Hospital of Diyarbakır