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Case Report

Laparoscopic ureterolithotomy: a rare case report

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ABSTRACT

In this era of endourology most of the ureteric calculi are managed by endourological technique. However, lap ureterolithotomy has a role in the management of large ureteric calculus with minimal complications, morbidity, early recovery and short hospital stay. Laparoscopic ureterolithotomy bridges the gap between open and endourologic procedures as it is minimally invasive and overcomes a few of the disadvantages of open ureterolithotomy. We report a case of our experience of impacted upper ureteric calculus done by laparoscopy. Here we present a case of 45 -year-old male with right loin pain with CT suggestive of impacted right upper ureteric calculus measuring 2.2×1×2.2 with moderate HDUN and good renal function. Patient underwent right transperitoneal laparoscopic ureterolithotomy and, the ureteric calculi was removed successfully. Hence, we can conclude that, laparoscopic uretrolithotomy is safe for large impacted ureteric calculus with early recovery and minimal morbidity to the patient with complete clearance.

Keywords: Large upper ureteric calculus, Laparascopic uretrolithotomy, Minimal invasive urgery

INTRODUCTION

In this era of endourology most of the ureteric calculi are managed by endourological techniques however lap ureterolithotomy has a role in the management of large ureteric calculus with minimal complications, morbidity, early recovery and short hospital stay.[1,2] Laparoscopic ureterolithotomy bridges the gap between open and endourologic procedures as it is minimally invasive and overcomes a few of the disadvantages of open ureterolithotomy. We report a case of our experience of impacted upper ureteric calculus done by laparoscopy.

CASE REPORT

A 45 -year-old male patient presented with right loin pain with CT suggestive of impacted right upper ureteric calculus measuring 2.2×1×2.2 with moderate HDUN and good renal function (Figure 1). Physical examination was normal and surgical profile was within normal limits. Patient underwent right transperitoneal laparoscopic ureterolithotomy and impacted upper ureteric calculi was removed successfully. Patient placed in left lateral position, 4 ports were placed a 10 mm supraumbilical camera port inserted by open Hassan's technique. Pneumoperitoneum was created. Other 3 working port, one 10 mm working port in midclavicular line 2 cm below rt subcostal region, one 5 mm port placed in epigastrium for liver retraction and support, another 5 mm port place in post axillary line 2 cm above the rt ASIS (Figure 2).

Figure 1: CT image.

RT colon was mobilized and rt kidney identified along with rt. Gonadal vein and IVC. And right ureter identified hooked above and below the calculi by vascular loops dense periureteric inflammation present along with toxic fat. Anterior ureterotomy done over the calculus. A calculus of size around 2 cm removed (Figure 3). Ureterotomy wound closed with 4-0 vicryl, after placing a 4.5fr/26 cm DJ stent on guidewire antegrade (Figure 4). Post operatively patient had uneventful recovery.

Figure 2: Ports placement.

Figure 3: Ureteric calculus.

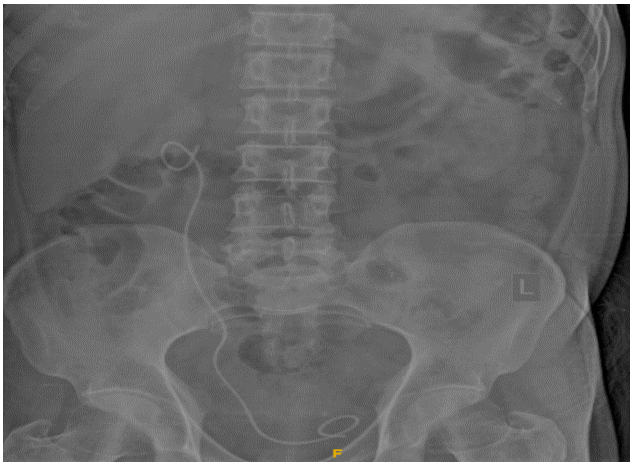

Figure 4: Post op x ray Kub.

DISCUSSION

Impacted upper ureteric calculus with obstructive uropathy pose unique challenges, because guidewire and ureteric catheter placement is difficult and there is chance for ureteric injury. Despite advances in endourology, ureteroscopy has reintervention rates of 2-7% for large calculi.[3,4] This case could have been managed with staged endourologic procedures-ureteroscopy and laser fragmentation or by push back percutaneous nephrolithotomy. However, every additional procedure would have meant subjecting the patient to the risk of urosepsis and acute kidney injury.[5] Open ureterolithotomy in this case would have resulted in a long muscle cutting incision and major morbidity to the patient. Previous literature has reported prolonged hospital stay and increased post-operative pain with open ureterolithotomy.[6] The main advantages are decreased postoperative pain, shorter hospital stays and quicker convalescence in comparison to open surgery. For large, hard, long standing and impacted ureteric calculi, laparoscopic ureterolithotomy as initial therapy may be preferable to multiple endo-urological and ESWL procedures.[9]

In tertiary care centre with expertise of laparoscopy, both European and American urology association recommends the use of laparoscopic ureterolithotomy in large ureteric calculi. Therefore, a laparoscopic approach was planned for this patient.

In this case as well, port placement was planned as described to gain access to the entire length of ureter and the renal pelvis. Localization of the ureter and its dissection were easy as the ureter was dilated. Upper anterior ureteric incision was used to retrieve the upper ureteric calculi, and double J stent was placed laparoscopically which saved operative time. The port sites were closed with port vicryl. Double J stent was used as mentioned in the previous literature to prevent complications like urinoma post-operatively in multiple large impacted calculi.[7] Laparoscopic procedures have their own set of disadvantages of injury to the viscera and loss of stone in peritoneal cavity as compared to endourologic procedures.[8] However, following principles of laparoscopy meticulously as mentioned above, the advantages outweigh these disadvantages in patients with such a large burden of stones and history of acute kidney injury.

CONCLUSION

Laparoscopic uretrolithotomy is safe for large impacted ureteric calculus with early recovery and minimal morbidity to the patient with complete clearance.

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