Ambulatory laparoscopic renal cyst decortication

Meng Guan, MD, Sero Andonian, FRCS(C)
Department of Urology, Royal Victoria Hospital, McGill University Health Centre, Montreal, Quebec, Canada

GUAN M, ANDONIAN S. Ambulatory laparoscopic renal cyst decortication. The Canadian Journal of Urology. 2010;17(3):5229-5231.

Introduction: *Laparoscopic renal cyst decortication has become the standard of care for management of large symptomatic simple renal cysts. The aim of the present case report is to present such a case in an ambulatory setting.*
Case report: *A 41-year-old woman presented with a 3 year history of a painful 9 cm x 7.3 cm right lower pole simple renal cyst. Laparoscopic renal cyst decortication was performed through three 5 mm trocars. The operating time was 145 minutes. There were no intraoperative or postoperative complications. The wounds were infiltrated with a total of 20 cc of 0.25% Marcaine. At the end of the procedure, she also received 1.3 g of acetaminophen rectally and 30 mg of ketorolac intravenously. The patient remained in the recovery room for a total of 3 hours. She was hemodynamically stable and was able to ambulate right away. She was discharged home directly from the recovery room and remained pain free on subsequent follow ups at 3 days and 1 month.*
Comments: *The present case report is a new trend in the laparoscopic management of renal cysts whereby patients can be treated in an ambulatory setting. This would make laparoscopic management even more advantageous when compared to percutaneous drainage and sclerotherapy. In an era of increasing health care costs, performing such cases in an ambulatory setting provides cost effective management in patients who are compliant.*

Key Words: laparoscopy, cystic kidney diseases, ambulatory surgical procedures

Introduction

Simple renal cysts are commonly diagnosed with the widespread use of computed tomography (CT) and ultrasounds. However, few are symptomatic and require intervention. Pain, infection, abdominal mass effects, or obstruction constitute the main indications for surgery. The current treatment options for symptomatic renal cysts include percutaneous aspiration with or without sclerotherapy which has a high rate recurrence,[1] retrograde endoscopic marsupialization using flexible ureteroscopy which is technically challenging,[2] and laparoscopic cyst decortication which is considered the treatment of choice with high success rates above 90%.[3] However, previous series on laparoscopic cyst decortication reported mean hospital stays of 3 days.[4,5] Therefore, the aim of this report is to present a case of ambulatory laparoscopic renal cyst decortication in a patient with a large symptomatic right renal cyst. It is the expectation of the authors that this ambulatory laparoscopic trend in urology continues in an effort to minimize health care costs similar to ambulatory laparoscopic cholecystectomy.

Accepted for publication March 2010

Acknowledgement
This work was supported in part by grants from the McGill University Health Centre Foundation and Northeastern AUA Young Investigator Award to Sero Andonian.

Address correspondence Dr. Sero Andonian, Department of Urology, Royal Victoria Hospital, McGill University Health Centre, 687 ave des Pins Ouest, Suite S6.92, Montreal, Quebec H4K 1T9 Canada

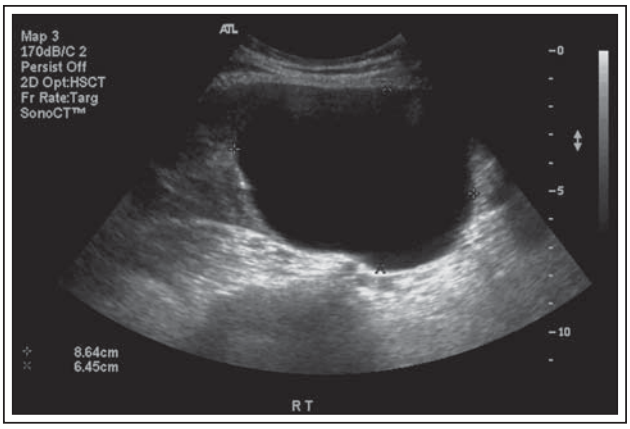

Figure 1. Ultrasound examination of the right kidney showing the large lower pole simple cyst.

Case report

A 41-year-old woman presented with enlarging symptomatic right renal cyst. Her past medical history is significant for torticollis in addition to a recto-vaginal fistula repair post vaginal delivery in 1992. Over a period of 3 years, the renal cyst grew from 7 cm to 9.4 cm x 7.6 cm, Figure 1. Since she is thin, the cyst produced a mass effect and bulged out of the right upper quadrant. In addition to cosmetic disturbance, it caused dull right abdominal pain that sometimes woke her up from sleep. Urine analysis, culture and cytology were all negative. CT urogram confirmed that this is a benign right lower pole (Bosniak I) simple cyst, Figure 2. She was given the option of surveillance, percutaneous drainage with sclerotherapy and definitive management with laparoscopic renal cyst decortication. She elected to undergo laparoscopic decortication which was performed on August 14th, 2009.

Under benefit of general anesthesia, she was placed in a modified left lateral decubitus position. After establishing pneumoperitoneum, three 5 mm trocars were placed at the umbilicus, sub-xiphoid and right mid-clavicular line. After mobilizing the ascending colon, the lower pole of the right kidney containing the large cyst was mobilized without puncturing the cyst nor damaging the ureter. At this point, a laparoscopic needle was used to aspirate the cyst contents. This produced straw-colored fluid of 345 cc, which was sent for cytological examination. Final cytologic examination revealed foamy macrophages consistent with benign cyst fluid. The needle puncture site was enlarged and the remainder of the cyst wall was excised. At this point, the parenchymal aspect of the cyst wall was fulgurated. Hemostasis from the marsupialized edges was ensured and the cyst wall specimen was removed from the umbilical 5 mm port site. Final pathological examination was benign. The umbilical port site was closed using Carter-Thomason instrument. All skin incisions were infiltrated with a total of 20 cc of 0.25% bupivacane and closed using 4-0 absorbable sutures. There was minimal blood loss. Prior to waking the patient, 1.3 g of acetaminophen suppository and 30 mg intravenous ketorolac were given. In the recovery room, she complained of minimal pain (pain score of 2) and was discharged home 3 hours later. She received a total of 75 µg of intravenous fentanyl and 5 mg of oral oxycodone. She was pain free on follow up 3 days and 1 month later. Her wounds had healed well with excellent cosmetic results, Figure 3. Her dull abdominal pain and bulging had disappeared.

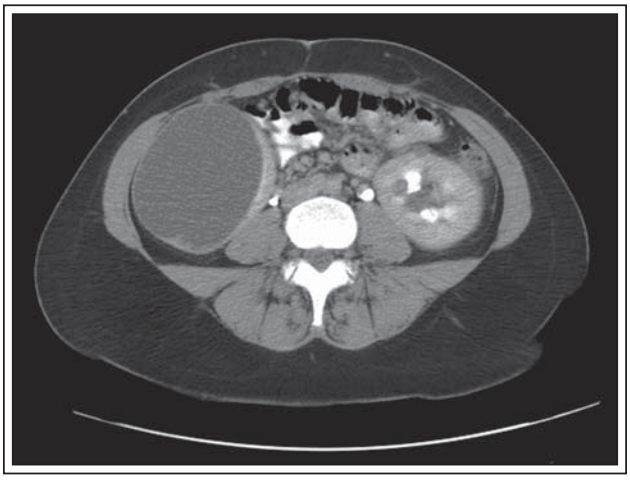

Figure 2. Excretory phase CT scan showing the large benign right renal cyst.

Figure 3. Photograph of the abdomen 1 month postoperatively.

Comments

Laparoscopic renal cyst decortication, first described in 1992, has become the standard of care for long term successful management of symptomatic renal cysts.[6,7] However, previous studies reported hospital stays of up to 3 days.[4,5,8] Recently, there are reports of ambulatory urologic laparoscopic procedures. For example, a 23 hour stay post laparoscopic donor nephrectomy has been described.[9] Gill and colleagues reported outpatient laparoscopic adrenalectomy in nine patients with median hospital stay of 412 minutes (~7 hours).[10] Outpatient laparoscopic pyeloplasty was also reported in 6 out of 13 patients undergoing laparoscopic pyeloplasty.[11] Patients remained in hospital for an average of 359 minutes (~6 hours) (226 to 424 minutes) and received mean of 6 mg of morphine and 32 mg of ketorolac intravenously. Three out of the six patients were discharged to an adjacent guesthouse to facilitate return to hospital in case of emergencies. Similar to the present case, patients were given telephone or pager numbers to directly contact the operating surgeon. The authors proposed inclusion criteria for outpatient laparoscopic pyeloplasty that could be extended to laparoscopic cyst decortication. These include: patient and family agreeable to discharge plan, body mass index ≤ 40 kg/m^2, first round start, no intraoperative or postoperative complications, surgery completed by 12:00 pm, hemodynamically stable, ambulating without significant difficulty, abdomen soft and tolerating liquids orally, and pain under control on oral analgesics.[11] However, unlike the present case, patients did not receive any rectal acetaminophen. Another difference is the fact that pyeloplasty patients were evaluated by the surgical team 3-4 hours postoperatively. This may have contributed to the long postoperative observation of 6 hours. In the present case, the patient stayed in the recovery room for only 3 hours. In addition to being a simpler laparoscopic procedure, the shorter postoperative recovery may have been due to analgesic combination of acetaminophen, ketorolac, narcotics and local anesthetics. The ambulatory nature of laparoscopic cyst decortication reduces health care costs of admission, which is 1618$CAD for residents and 4854$ CAD for non-residents per night of hospital admission at our institution.

The present case report is a new trend in the laparoscopic management of renal cysts whereby patients can be treated in an ambulatory setting. This would make laparoscopic management even more advantageous when compared to percutaneous drainage and sclerotherapy. In an era of increasing health care costs, performing such cases in an ambulatory setting provides cost effective management in patients who are compliant. □

References

1. Plas EG, Hubner WA. Percutaneous resection of renal cysts: a long-term followup. *J Urol* 1993;149(4):703-705.
2. Kavoussi LR, Clayman RV, Mikkelsen DJ, Meretyk S. Ureteronephroscopic marsupialization of obstructing peripelvic renal cysts. *J Urol* 1991;146(2):411-415.
3. Yoder BM, Wolf JS Jr. Long-term outcome of laparoscopic decortication of peripheral and peripelvic renal and adrenal cysts. J Urol 2004;171(2 Pt 1):583-587.
4. Hoenig DM, McDougall EM, Shalhav AL, Elbahnasy AM, Clayman RV. Laparoscopic ablation of peripelvic renal cysts. *J Urol* 1997;158(4):1345-1348.
5. Teichman JM, Hulbert JC. Laparoscopic marsupialization of the painful polycystic kidney. *J Urol* 1995;153(4):1105-1107.
6. Hulbert JC, Shepard TG, Evans RE. Laparoscopic surgery for renal cystic disease. *J Urol* 1992;147(Pt 2):433Abstract.
7. Rubenstein SC, Hulbert JC, Pharand D, Schuessler WW, Vancaillie TG, Kavoussi LR. Laparoscopic ablation of symptomatic renal cysts. *J Urol* 1993;150(4):1103-1106.
8. Atug F, Burgess SV, Ruiz-Deya G, Mendes-Torres F, Castle EP, Thomas R. Long-term durability of laparoscopic decortication of symptomatic renal cysts. *Urology* 2006;68(2):272-275.
9. Kuo PC, Johnson LB, Sitzmann JV. Laparoscopic donor nephrectomy with a 23-hour stay: a new standard for transplantation surgery. *Ann Surg* 2000;231(5):772-779.
10. Gill IS, Hobart MG, Schweizer D, Bravo EL. Outpatient adrenalectomy. *J Urol* 2000;163(3):717-720.
11. Rubinstein M, Finelli A, Moinzadeh A, Singh D, Ukimura O, Desai MM, Kaouk JH, Gill IS. Outpatient laparoscopic pyeloplasty. *Urology* 2005;66(1):41-43;discussion 43-44.