

Laparoscopic Decortication of Simple Renal Cyst with Omental Wadding Technique: Single Center Experience

M El-Shazly, A Allam, B Hathout

ABSTRACT

Objectives: The aim is to study the outcome of laparoscopic decortication of symptomatic simple renal cyst with omental wadding technique in a single center.

Methods: This is a retrospective study of 16 consecutive patients who underwent transperitoneal laparoscopic decortication of symptomatic simple renal cyst with omental wadding technique between November 2007 and November 2011. The indication for surgery was for relief of pain in all cases. Pain was assessed preoperatively and 1 and 6 months postoperatively using numerical rating pain scale. All cysts were more than 10 cm in its greatest dimension. Laparoscopic decortication was the primary treatment in 13 cases and the secondary treatment in three cases after sclerotherapy. We used the omental wadding technique to decrease the incidence of recurrence. We reviewed the preoperative and postoperative data.

Results: The operation was successfully completed laparoscopically in all cases with a mean operative time of 95 minutes without major perioperative complications. Hospital stay was 2.4 days (range, 2 to 4 days). Fifteen cases improved significantly after operation in a mean follow-up of 1.5 year. One case only had radiological recurrence after 6 months postoperatively.

Conclusion: Laparoscopic decortication of large simple renal cysts is an efficacious, safe and less invasive method of treatment. Omental wadding is helpful to decrease the incidence of cyst recurrence. Laparoscopic decortication is recommended as a primary treatment for huge cysts or as a secondary treatment after treatment failure with sclerotherapy.

Keywords: Renal cyst, Decortication, Laparoscopic, Omental wadding.

How to cite this article: El-Shazly M, Allam A, Hathout B. Laparoscopic Decortication of Simple Renal Cyst with Omental Wadding Technique: Single Center Experience. *World J Lap Surg* 2012;5(1):1-3.

Source of support: Nil

Conflict of interest: None declared

INTRODUCTION

It is estimated that the incidence of renal cysts is 20% at 40 years of age and 33% at 60 years population.¹ Most of renal cysts are asymptomatic, the diagnosis is usually incidental during abdominal ultrasonography. Up to 5 to 10% of renal cysts are symptomatic. The main presentation is flank pain, occasionally patients may present with hematuria, hypertension or UTI.²⁻⁴

A simple benign cyst (Bosniak I) has a thin wall without septations, calcification or solid components. Its density measures like water and does not show enhancement with contrast material.⁵

Most of simple renal cysts require no treatment, intervention is indicated only when patients present with symptoms or complications, such as UTI or upper urinary tract obstruction. Sclerotherapy is the ideal primary management especially for relatively small simple renal cysts (less than 10 cm in its greatest dimension). It is a minimally invasive and safe procedure and it is frequently performed to treat these patients. However, the recurrence rate after simple aspiration alone is 41 to 78%. Recurrence rate is around 43% after single session of sclerotherapy and is lowered to 5% after repeated sessions of sclerotherapy.⁶⁻⁹

Since, the introduction of laparoscopy to urologic surgery in the 1990s, laparoscopic decortication of simple renal cysts has been reported to be an excellent modality of management as it is effective and it can duplicate techniques of open surgery. This is together with the generic advantages of laparoscopy; less invasive, less morbidity, less pain and less analgesic use, short convalescence and rapid return to work.¹⁰

PATIENTS AND METHODS

Sixteen patients with simple renal cysts were admitted to Urology Department, Farwaniya Hospital, between November 2007 and November 2011 and mean age 52 years, range 27 to 68; seven males and nine females.

All cases were presented with pain. Pain was assessed using numerical rating pain scale preoperatively and postoperatively after 1 month and 6 monthly. Abdominal ultrasonography and computed tomography with contrast were performed for all cases preoperatively to assess type of cyst and to rule out any connection to pelvicalyceal system. All cases were diagnosed with symptomatic simple renal cyst (Bosniak 1 and 2). The estimated mean largest cyst dimension measured by CT was 14.5 cm (range from 11-19 cm). Fourteen cases had single cortical cyst, and two had more than one cyst. There were no parapelvic cysts in our series.

Ultrasonography was repeated 1 and 6 months postoperatively. CT was repeated postoperatively if ultrasonography suggested the possibility of recurrence.

TECHNIQUE

Under general anesthesia, patients were positioned in the lateral position. Transperitoneal access was established using veress needle or open (Hasson technique). Primary port (10 mm) was inserted on the lateral border of rectus abdominis muscle opposite the umbilicus. Two working ports (5 mm) were inserted after establishment of pneumoperitoneum on the anterior axillary line: One just below the costal margin and the other just above anterior superior iliac spine. Longitudinal incision was done in the posterior peritoneum on the line of Tolddt followed by medialization of ascending or descending colon using scissor and Maryland dissector. Gerota's fascia was then dissected to expose the kidney. Aspiration of the cyst was done using aspiration needle inserted through skin under laparoscopic guidance. Excision of the cyst wall (unroofing) was then done. Cauterization of the edges and wadding the cavity with omentum was performed to decrease the possibility of recurrence. Omentum was fixed to the cyst edges with intracorporeal sutures and clips. A drain is left for 1 day only. Removal of ports and closure of port sites were performed.

RESULTS

The demographics and operative data are summarized in Table 1.

The operation was successfully completed laparoscopically in all cases with no conversion to open surgery. There were no major perioperative complications. One case only developed ileus postoperatively and stayed for 4 days. This was due to some colonic adhesions that required more dissection. Hospital stay was 2.4 days (range, 2 to 4 days). The mean blood loss was 50 ml (range 60-135 minutes). Fifteen cases improved significantly after operation in a mean follow-up of 1.5 years. One case had recurrence after 6 months. Unfortunately, he developed colon cancer and refused any further intervention.

The mean numerical pain score was 5.5 preoperatively and decreased to 0.5 after 1 month postoperatively. After 6 months, the mean numerical pain score was 1.7. This was statistically caused by the occurrence of recurrence in one case after 6 months.

The mean operative time was 95 minutes (range 60-135). The mean operative duration for the three cases that had sclerotherapy prior to laparoscopic decortication was 115 minutes. The mean operative duration of the thirteen cases that had laparoscopic decortication as a primary management was 72 minutes. The difference is statistically significant using Statpac version III (using t-test: t was 5.2, degree of freedom 14, two tailed probability 0.0001).

DISCUSSION

Renal cysts can be classified to simple (Bosniak type I and II) or complex (Bosniak type III and IV) cysts with risk of malignancy according to Bosniak classification.¹¹

The ideal management of symptomatic simple renal cyst should be less invasive and effective with low recurrence rate. Aspiration only or aspiration sclerotherapy is less invasive, however the recurrence rate is relatively high.^{6,7}

Open surgery offers the best success rate and lowest recurrence rate among the different modalities; however, it is invasive procedure with the comorbidities of flank incision. Laparoscopy offers effective treatment with high success rate and low recurrence rate comparable to open surgery with the advantage of being less invasive modality of management.^{9,10}

Different laparoscopic techniques are reported: Simple decortication using monopolar diathermy or scissors, marsupialization, decortication with omental wadding and different approaches; transperitoneal, extraperitoneal and less have been described.^{12,13}

In spite of the advancement of different laparoscopic techniques, the reported recurrence rate is still up to 19% regardless the technique used.¹⁴

Transperitoneal and retroperitoneal approaches are comparable regarding to improvement of pain, clinical success and radiological findings. Transperitoneal approach has the advantages of larger working space, anatomical landmarks and has the disadvantages of longer operative duration and need to mobilize colon.¹⁵ We preferred the transperitoneal approach as it is our preferred approach and it allows accessibility to the omentum for decortication with omental wadding.

Recurrence after laparoscopic decortication could be explained by incomplete resection of the cyst wall. The residual secreting cyst wall can become adherent to surrounding tissues with development of a new cyst. To prevent recurrences, different techniques have been

Table 1: The demographics and operative data

Demographics and operative data	Results
Mean age (range)	52 years (range 27-68 years)
Males	7
Females	9
Cyst size (mean largest dimension of cyst)	14.5 (range 11-19 cm)
Approach	All transperitoneal
Mean operative duration	95 minutes (range 60-135 minutes)
Mean blood loss	50 ml (range 30-80 ml)
Mean hospital stay (range)	2.4 days (range 2 to 4 days)
Recurrence	1

reported, i.e. cyst decortication with fulguration of the cyst base, marsupialization, resection with surgical bolsters positioned into the base of the cyst, and omental wadding of the cyst.^{16,17}

After the second case that got recurrence after 6 months, we started to ensure complete excision of the cyst wall and to wad the floor of the cyst with omentum and fix it with clips. We did not have any recurrence with this technique. This agrees with other series reporting less recurrence rate with this technique.²

We encountered some difficulties in dissection of the Gerota's fascia and excision of cyst wall in our three cases that had sclerotherapy. This can explain the longer mean operative duration in these cases.

CONCLUSION

Laparoscopic decortication of large simple renal cysts is an efficacious, safe and less invasive method of treatment. Omental wadding is helpful to decrease the incidence of cyst recurrence. Laparoscopic decortication is recommended as a primary treatment for huge cysts or as a secondary treatment after treatment failure with sclerotherapy.

REFERENCES

1. Terada N, Arai Y, Kinukawa N, Terai A. The 10-year natural history of simple renal cysts. *Urology* 2008;71:7-11.
2. Porpiglia F, Fiori C, Billia M, Renard J, Di Stasio A, Vaccino D, et al. Retroperitoneal decortication of simple renal cysts vs decortication with wadding using perirenal fat tissue: Results of a prospective randomized trial. *BJU Int* 2009; 103(11): 1532-36.
3. Hemal AK. Laparoscopic management of renal cystic disease. *Urol Clin North Am* 2001;28:115-26.
4. Thwaini A, Shergill IS, Arya M, Budair Z. Long-term follow-up after retroperitoneal laparoscopic decortication of symptomatic renal cysts. *Urol Int* 2007;79:352-55.
5. Bosniak MA. The use of the bosniak classification system for renal cysts and cystic tumors. *J Urol* 1997;157:1852-53.
6. Chung B, Kim J, Hong C, Yang S, Lee M. Comparison of single and multiple sessions of percutaneous sclerotherapy for simple renal cyst. *BJU Int* 2000;85(6):626-27.
7. Bean WJ. Renal cysts: Treatment with alcohol. *Radiology* 1981;138:329-31.
8. Raskin MM, Poole DO, Roen SA, Viamonte M Jr. Percutaneous management of renal cysts: Results of a four-year study. *Radiology* 1975;115(3):551-53.
9. Hanna RM, Dahniya MH. Aspiration and sclerotherapy of symptomatic simple renal cysts: Value of two injections of a sclerosing agent. *Am J Roentgenol* 1996;167:781-83.
10. Morgan C, Rader D. Laparoscopic unroofing of a renal cyst. *J Urol* 1992;148:1835-36.
11. Agarwal MM, Hemal AK. Surgical management of renal cystic disease. *Curr Urol Rep* 2011;12(1):3-10.
12. Tuncel A, Aydin O, Balci M, Aslan Y, Atan A. Laparoscopic decortication of symptomatic simple renal cyst using conventional monopolar device. *Kaohsiung J Med Sci* 2011; 27(2):64-67.
13. Permpongkosol S, Ungbhakorn P, Leenanupunth C. Laparoscopic single site (LESS) management of benign kidney diseases: Evaluation of complications. *J Med Assoc Thai* 2011; 94(1):43-49.
14. Shiraishi K, Eguchi S, Mohri J, Kamiryo Y. Laparoscopic decortication of symptomatic simple renal cysts: 10-year experience from one institution. *BJU Int* 2006;98:405-08.
15. Ryu DS, Oh TH. Laparoscopic decortication of large renal cysts: A comparison between the transperitoneal and retroperitoneal approaches. *J Laparoendosc Adv Surg Tech A* 2009;19(5): 629-32.
16. Yoder BM, Wolf JS. Long-term outcome of laparoscopic decortication of peripheral and peripelvic renal and adrenal cysts. *J Urol* 2004;171:583-87.
17. Roberts WW, Bluebond-Langner R, Boyle KE, Jarrett TW, Kavoussi LR. Laparoscopic ablation of symptomatic parenchymal and peripelvic renal cysts. *Urology* 2001;58:165-69.

ABOUT THE AUTHORS

M El-Shazly

Department of Urology, Farwaniya Hospital, Kuwait

A Allam

Department of Urology, Farwaniya Hospital, Kuwait

B Hathout

Department of Urology, Farwaniya Hospital, Kuwait