

# MANAGEMENT OF SYMPTOMATIC RENAL CYSTS BY LAPAROSCOPY: OUR INITIAL EXPERIENCE

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## Abstract

**Introduction and objective:** Over the last decade laparoscopic surgery has been popularized and developed to such an extent that it can be considered gold standard for many types of procedures in urology. Currently the majority of operations in urologic field can be performed by laparoscopy. This is because it is as effective as open surgery, but associated with less postoperative pain, shorter hospital stay, faster recovery and has better cosmetic result. The aim of the study is to evaluate the results of our experience of treating symptomatic renal cysts by laparoscopy.

**Materials and methods:** This prospective study was conducted from January 2015 to December 2017 in the Department of Urology in a single unit of Dhaka Medical College Hospital. All the patients were admitted through out-patient department. Among them those who fulfilled the criteria were selected for laparoscopic surgery. All patients were diagnosed by ultrasonography and computed tomography to determine the Bosniak classification of the cyst & informed written consent was taken. Total five laparoscopic decortication of renal cysts were performed and the results of our experience were compared with data from published article. Pain and cyst recurrence were assessed during the follow-up.

**Results:** Our study described the results of 05 laparoscopic decortication of renal cysts. All procedures were completed successfully by transperitoneal approach, with no major intraoperative and postoperative complications. There was a placement of drain tube in one patient. The mean (range) operative duration was 68 (40–110) min, affected by the site and number of cysts decorticated. The mean post operative hospital stay was 1.8 (1–3) days. All patients were symptom-free and no sign of recurrence during the follow-up.

**Conclusion:** Laparoscopic decortication of symptomatic renal cysts should be the standard of care and it is feasible with conventional laparoscopic instruments and gives a better cosmetic outcome.

**Key words:** Renal cysts, laparoscopy, decortication

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## Introduction

Renal cysts are common and can represent a manifestation of an inherited or acquired disorder. Simple cysts are rare in childhood, but increase in frequency during adulthood<sup>1</sup>. The increasing incorporation of imaging into urological practice has produced a corresponding increase in the detection of renal cysts<sup>2</sup>.

The indications for surgical intervention for renal cysts are pain, infection, hypertension, haemorrhage, collecting-system obstruction, or the risk of malignancy. The treatment options for symptomatic cysts include aspiration with or without instillation of sclerosing

agents, percutaneous resection, and open or laparoscopic decortication<sup>3</sup>.

Laparoscopic management has become the standard of care because it is minimally invasive and has a high success rate in terms of cyst recurrence<sup>4</sup>. This is because it is as effective as open surgery, but associated with less postoperative pain, shorter hospital stay, faster recovery and has better cosmetic result. The aim of the study is to evaluate the results of our experience of treating symptomatic renal cysts by laparoscopy.

### Patients and methods

This prospective study was conducted from January 2015 to December 2017 in the Department of Urology in a single unit of Dhaka Medical College Hospital. All the patients were admitted through outpatient department. Among them those who fulfilled the criteria were selected for laparoscopic surgery. The main presenting symptoms were renal pain in all patients. All patients were diagnosed by ultrasonography and computed tomography to determine the Bosniak classification of the cyst & informed written consent was taken. Small asymptomatic simple cysts (<5 cm) and renal cysts of higher grade (type II, III and IV Bosniak classification) were excluded. Urine analysis with culture and sensitivity was assessed in all patients, and urine cytology was assessed in those with haematuria. Total five laparoscopic transperitoneal decortication of renal cysts were performed and the results of our experience were compared with data from published article. Pain and cyst recurrence were assessed during the follow-up( 3 months, 6 months and yearly).

### Results

Our study described the results of 05 laparoscopic decortication of renal cysts. The mean age of the patients was 42.6 years (35-48 years). Out of them, male patients were three and female patients were two. Average cyst size was 9.7 cm (8.5cm to 11cm). All procedures were completed successfully by transperitoneal approach, with no major intraoperative and postoperative complications and no blood transfusions needed. There was a placement of drain tube in one patient. The tube drain was removed 2 days after surgery. The mean (range) operative duration as 68 (40–110) min, affected by the site and number of cysts decorticated. The mean post operative hospital stay was 1.8 (1-3) days. No malignancy was detected

on histopathological examination of the cyst walls. The patients were followed up for 3, 6 and 12 months, with a clinical assessment for pain, and by abdominal ultrasonography. All patients were symptom-free, with no urinary tract obstruction. There was recurrence found in one patient in 6 months follow up. The recurrent cyst was small, at H"4 cm, and painless. Rest of the patients were symptom-free and no sign of recurrence during the follow-up.

**Table-I**  
*Results*

Total cases	05
Male	03
Female	02
Age (years)	
Mean	42.6
Range	35-48
Laterality	
Right	02
Left	03
Size of renal cysts(cm)	
Mean	9.7
Range	8.5-11
Operation time(minutes)	
Mean	68
Range	40-110
Hospital stay(days)	
Mean	1.8
Range	1-3

### Discussion

Laparoscopic cyst decortication is an effective and durable treatment for symptomatic renal cysts, as assessed over a long-term follow-up. Its minimal invasiveness and greater success rate favour it over other treatments<sup>5,6</sup>. The outcome of laparoscopy shows that it can be used safely and effectively in many urological procedures, including cyst decortication, which can be done bilaterally in the same session<sup>7,8</sup>. Usually renal cyst were found in adult people. Our study reflects the same average age with the published literature and it 42.6 years. Some authors recommended that retrograde pyelography should be used just before the start of the laparoscopic procedure,

especially in those with parapelvic and parenchymal cysts, to assess cyst communication with the collecting system, and possibly an injection with methylene blue via a ureteric catheter for a final check at the end of the manoeuvre. However, we think that this is not mandatory and we did not use this in our series where there were no significant complications<sup>9,10</sup>. The retroperitoneal approach reduces the risk of hypercarbia, hypothermia, postoperative ileus, inadvertent intra-abdominal organ injury and hernia formation, compared to the transperitoneal approach<sup>11</sup>. But we preferred transperitoneal approach for better visualization. The mean (range) operative duration as 68 (40–110) min, affected by the site and number of cysts decorticated which was also comparable to others authors. After laparoscopic decortication of renal cysts, post operative hospital stay was 1.8 (1-3) days which reduces the cost of the patients. Cysts can recur, possibly due to incomplete handling or incomplete excision of the cyst wall. To decrease the possibility of recurrence, the renal cyst wall should be completely excised if possible. If it is not possible to excise the cyst wall completely, the perinephric fat should be tacked into the cavity<sup>12</sup>. We report one case of recurrence.

### Conclusion

Laparoscopy in treating urological diseases is viable option and offers several advantages over open technique. Laparoscopic decortication of symptomatic renal cysts should be the standard of care and it is feasible with conventional laparoscopic instruments and gives a better cosmetic outcome.

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