Laparoscopic Management of Symptomatic Renal Cysts

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ABSTRACT:

BACKGROUND:

Simple renal cysts are common, with incidence increasing with age. Symptomatic renal cysts have traditionally been initially treated by percutaneous aspiration with or without injection of sclerosant agents; however, this has a high rate of recurrence.Open surgical cyst decortication for pain relief through a flank or chevron incision is associated with considerable morbidity and protracted convalescence.

OBJECTIVE:

To assess the efficacy of laparoscopic Surgery in the treatment of symptomatic simple renal cysts. Renal cysts are common in the adult population.

METHODS:

From April 2007 to July2009 ,11patients (7 males and 4 females) underwent laparoscopic decortications of symptomatic simple renal cysts with renal cyst wall excision and fulguration of the epithelial lining. Complex renal cysts were excluded. The Wong-Baker pain scale was used to assess the preoperative and postoperative pain scores. Radiologic success was indicated as no recurrence on the most recent computed tomography scan.

RESULTS:

Of the 11 procedures were completed laparoscopically , the mean operative time was 100 minutes (range 80 to 120). Symptomatic and radiographic success was achieved in 90.9% of patients, with a median follow-up of 12 months (range 6 to 18).

CONCLUSION:

Long-term follow-up has confirmed that laparoscopic cyst decortication is an effective and durable treatment option for symptomatic simple renal cysts during long-term follow-up. The greater and durable success rates of this minimally invasive technique may favor this treatment option over other treatment modalities.

***KEY WARDS*:** renal cysts, laparoscopic surgery.

INTRODUCTION:

Simple renal cysts are common, with incidence increasing with age from 0.22–0.55% in children to >5% in the fourth decade, and up to 36% in the eighth decade of life[1].

The Bosniak renal cyst classification was first introduced in 1986 and has been accepted by urologists and radiologists as a way of diagnosing, discussing, and determining the management approach to cystic renal masses[2]. The vast majority of renal cysts are simple; they are thin and smooth-walled, with no calcification, septation or enhancement after contrast studies, corresponding to Bosniak category I[3].

Although simple renal cysts are usually asymptomatic, flank pain is the most common symptom. A palpable flank mass, hematuria, hypertension, and compression of the pelvicaliceal system also can occur . Pain, infection, and obstructive uropathy are the major indicators for surgical intervention[4].

Symptomatic renal cysts have traditionally been initially treated by percutaneous aspiration with or, without injection of sclerosant agents; however this has a high rate of recurrence[5]. Open surgical cyst decortication for pain relief through a flank or chevron incision is associated with considerable morbidity and protracted convalescence[6].

Laparoscopic renal cyst decortication was first described by Hulbert et al. as a good alternative to open surgery. Laparoscopic surgery combines the advantages of a minimally invasive procedure with the effectiveness of cyst marsupialization achieved by open surgery[7,8].

The Wong –Baker visual Scale was used to asses the preoperative and post operative Pain score of the patients ,because it was the simplest and most accurate evaluation possible[9,10,11].

We present our results at a mean follow-up of 12 months for 11 consecutive patients treated for symptomatic simple renal cysts.

MATERIAL AND METHODS:

From April 2007 to July 2009, 11 patients underwent laparoscopic decortication of symptomatic simple renal cysts in the urological

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department ,Surgical Specialties hospital. Seven males and four females with M:F=1.6:1, right renal cysts was found on Six patients while left renal cysts on Five patients. Age ranged 18-45 ,Mean =31.5.

All patients were evaluated in the urology clinic, and the cysts were localized and characterized by computed tomography and ultrasonography. There were 10 Bosniak type I and 1 patient with Bosniak type II cysts (Bosniak Classification).

Complex cysts, pregnant patients, and patients with solitary kidney were not included in this study.

All patients were symptomatic, reporting pain at presentation, varying from flank pain to

gastrointestinal complaints in those with larger cysts.

Wong Baker face pain scale : a visual measurement featuring images of facial expressions to help the patient describe the intensity or severity of pain, The scale was scored from 0 to 10, with 0 indicating no pain and 10 indicating the most severe pain. The pain scale was administered to the patients preoperatively and postoperatively

Procedure:

We explain to the patient that each face is for a person who feels happy because he has no pain or sad because he has some or a lot of pain. Face 0 is very happy . Face 1 hurts just a little bit. Face 2 hurts a little more. Face 3 hurts even more. Face 4 hurts a whole lot. Face 5 hurts as much as you can image, although you don't have to be crying to feel this bad. Ask the person to choose the face that best describes how he is feeling.

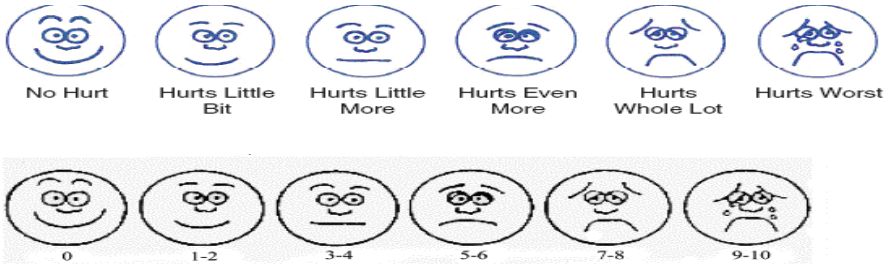

Figure : 1 Wong-Baker Faces Pain Rating Score
Renal Cyst Pain Score Pre & Post Laparoscopic Surgery

Operative Laparoscopic Procedure:

We examine the patient under general anesthesia in supine position by bimanual palpation of both renal area , if needed a D.J ureteral catheters were inserted if the cysts abutted the collecting system by imaging studies(done for 4 patients) . A bladder catheter is normally inserted during the operation to monitor urine output.

The transperitoneal route was the preferred access in all of the patients. The pneumoperitoneum was obtained using the Veress needle technique , A 10-mm port in the anterior axillary line at the level of the umbilicus and 10 mm optic camera was placed and the entire peritoneal cavity inspected. The usual secondary ports included 5-mm port is inserted in the midline between the umbilicus and the xiphoid process. 5 mm port at anterior axillaey line mid way between umbilicus and anterior superior iliac spine, and, if necessary for retraction, a 5-mm port variably placed (A subxiphoid 5-mm retractor Port may be needed to retract the liver for right-sided procedures).

The patient then placed in a 45° lateral decubitus position By Table Tilt on a well-padded beanbag, without table flexion.

The line of Toldt was incised from the upper colonic flexure to the pelvic brim. The colon was mobilized medially, enough to expose the renal cysts, which are typically easily visible. The peri renal fat was reflected off the cyst to expose its external wall.

Then we aspirate the cyst fluid and sample was sent for cytology, Laparoscopic scissor was used to excise the cyst wall, and laparoscopic cautry to fulgurate the epithelial lining of the cyst, and secure homeostasis,

A pedicle of perirenal fat or omentum was placed into the base of the cyst to prevent cyst recurrence, Intra peritoneal drains were placed routinely .

The patients were followed up for a period of 6-18 months with Pain score and radiological studies .Radiographic follow-up was performed with

computed tomography and/or ultrasonography. Radiographic success was defined as no recurrence of the cyst on the most recent imaging scan.
Patients with a pain score greater than 3, or with a residual pain rating, were categorized having symptomatic failure.

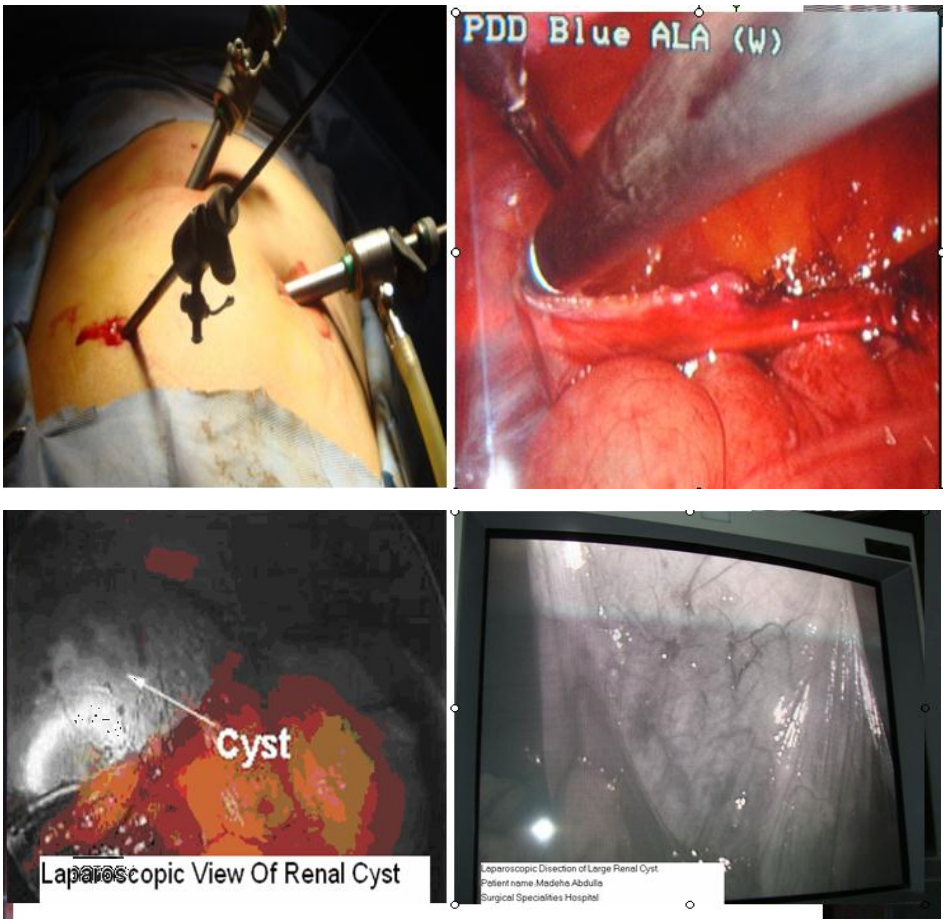

Figure 2 :Showing The Steps Of Laparoscopic Deroofing Procedure Of Large Simple RENAL Cyst

RESULTS:

Of the 11 patients (7 men and 5 women),Aged 18-45,there were 6 Rt. renal Cysts and 5 Lt. cysts ,The mean cyst size was 12.5 cm (range 7 to 18).
The mean operative time, from skin incision to placement of the last stitch, was 110 minutes (range 90 to 130). The Para pelvic cysts required longer operative times. There was no significant blood loss (150 ml).
the mean follow-up of the symptomatic patients was 12 months . 10 (91%) were symptom free, and 1 (7.6%) reported some alleviation of symptoms at follow-up. The mean preoperative pain score of all patients was 7.66, and the mean postoperative pain score was 2.1 according to the Wong-Baker pain scale. Symptomatic success was achieved in 90.9% of patients, and radiographic success was achieved in 90.9 , because of one new cyst development on follow-up computed tomography. All patients had negative cytological and pathological findings for malignancy or any other abnormalities.

Table I :Patient characteristics

patients	No.	%
Males	7	63.6
Females	4	36.4
TOTAL	11	100
AGE	18-45 YEARS	Mean =31.5
Side	RT.=6 (54.5%)	LT.=5 (45.4%)
Cyst Size	7-18	12.5

Table 2 : preoperative parameters

Parameters	NO.	%
Preoperative pain score		
Mean	7.66	
Range	6–10	
Previous cyst aspirations	2	18.1%

Table 3 :Operative Parameters

Time	Range= 80-120 Minutes	Mean=100
DJ placement	4	36.3%
Blood Loss	Range=50- 250 ml	Mean=150
Approach	Tran peritoneal	

Table 4: Post operative parameters

Hospitalization	1-3 days	
mean	2	
Post operative Problems		
problem	No.	%
Urine leak	1	9
Abdominal wall emphysema	1	9
ileus.	1	9
Port site pain and tenderness	2	18

Table 5: Patients Follow up Parameters

Parameter	No.	%
Pain-free patients (n)	10	(90.9%)
Pain recurrence (n)	1	(9%)
Preoperative pain score		
Range	6–10	
Mean	7.66	
Postoperative pain score		
Range	0–5	
Mean	2.1	
Cyst recurrence	1	(9%)
Radiographic follow-up (mo)		
Range	6–18	
Mean	12	
Radiographic success (%)	9	90.9%
Symptomatic success (%)	10	90.9%

DISCUSSION:

Symptomatic renal cysts have traditionally been treated by percutaneous aspiration with or without injection of sclerosant agents and open surgery[1].

Open decortication of renal cysts has a greater success rate compared with other treatment modalities. Because of the greater morbidity of

open surgery, percutaneous cyst aspiration is recommended as the initial therapy in many centers. However,many studies reported the recurrence rate varies between 41% and 78% with simple aspiration alone and 22% to 60 % with a sclerosing agent[12,13,14,15,16].

Chung et al reported only a 57% success rate in 42 patients who received ethanol sclerotherapy. They concluded that the recurrence of renal cysts after sclerotherapy is probably caused by incomplete ablation of the cyst wall and The secretory activity of the residual cyst wall contribute in cystic recurrence. Therefore, they recommended multiple sclerotherapy sessions for effective treatment of simple renal cysts[12].

The laparoscopic ablation of symptomatic renal cysts was first reported by Hulbert et al. subsequently, has been used since the early 1990s, Laparoscopic surgery combines the advantages of a minimally invasive procedure with the effectiveness of cyst marsupialization achieved by open surgery. As with open surgery, laparoscopic unroofing and excision of the cyst appears to be effective in not only removing the protruding cyst wall, but, more importantly, in ablating the epithelial surface of the cyst [17,18]. Patient selection for this procedure is important because most renal cysts do not cause symptoms and do not require treatment ,Laparoscopic deroofing should not be performed for renal cysts that are asymptomatic. Additionally, laparoscopic surgery has the advantage of better visualization and magnification of the inner aspect of the cyst using the laparoscope[19,20,21]. There are Various investigators have reported high success rates for laparoscopic interventions [22,23,24].

Recently, Okeke et al. compared aspiration and sclerotherapy with laparoscopic unroofing in the management of symptomatic simple renal cysts. They found recurrence of pain in all patients treated with sclerotherapy after a mean follow-up of 17 months. In contrast, all patients in the laparoscopic treatment group were pain free at a mean follow-up of 17.7 months. Finally, they reported that laparoscopic treatment of symptomatic cysts is more effective than sclerotherapy[23].

In this study, we report on laparoscopic renal cyst ablation in 11 patients, with a mean follow-up of 12 months. Although the success rate was similar to other reported success rates, we did not find any decrease in the success rate in 90.9% of patients with one year follow-up.

A. Tefekli etal, recommend a Laparoscopic reteroperitoneal approach for management of renal cysts(24).Today, laparoscopic cyst decortication is recommended for symptomatic patients, especially when aspiration with sclerotherapy is contraindicated or after cyst recurrence with symptomatic failure[19].

CONCLUSION:

In the light of the findings of our study, we recommend laparoscopic decortication as a preferable therapy for symptomatic patients that can achieve effective, long-lasting success with minimal morbidity.

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