



Initial Experience with Laparoscopic Nephrectomy at Services Hospital Lahore

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ABSTRACT

Introduction: Nephrectomy means removal of kidney. Laparoscopic nephrectomy is an effective way to remove a diseased or cancerous kidney. Nephrectomy is performed to treat malignant or benign tumors of the kidney and symptomatic non functioning kidney. Laparoscopic nephrectomy is performed through transperitoneal or retroperitoneal approach. **Aims & Objectives:** To determine the initial experience of laparoscopic nephrectomy. **Place and duration of study:** Department of Urology, Services Hospital, Lahore from 1st January 2018 to 30th June 2019. **Material & Methods:** A total of 50 patients who underwent laparoscopic nephrectomy were included. The demographic data like age, gender, site of operation, operative time, conversion rates, postoperative complications and postoperative hospital stay were recorded. Data was analyzed using SPSS 20.0 and reported as mean± s.d, frequencies and percentages. **Results:** There were 28 (56%) female patients and 22 (44%) male patients. Six (12%) patients were ages <25 years, 20 (40%) were ages 25 to 40 years, 18 (36%) were ages 41 to 55 years and 6 (12%) were ages above 55 years. Non-functional kidney due to stone disease was the most common indication 35 (70%). Mean operative time was 170.43±8.45 minutes. Conversion rate was in 1 (2%) patients. Mean hospital stay was 4.32±1.45 days. **Conclusion:** It is concluded from this study that laparoscopic nephrectomy is safe and better technique with very low rate of complications.

Key words: Non-functional kidney, Nephrectomy, Laparoscopic, Outcomes.

INTRODUCTION

Nephrectomy means removal of kidney, laparoscopic nephrectomy is an effective way to remove a diseased or cancerous kidney.¹ Nephrectomy is performed to treat malignant or benign tumors of the kidney, or severe unilateral parenchymal damage from nephrosclerosis, pyelonephritis, reflux, or congenital dysplasia. Nephrectomy can be performed through open or laparoscopic procedure.² During the 20th century, most nephrectomies for benign and malignant renal disease were performed by an open approach.³ There has been widespread interest in urologic laparoscopy since the first total laparoscopic nephrectomy was performed by Clayman in 1990.⁴ Laparoscopic nephrectomy is performed through transperitoneal or retroperitoneal approach. When compared with an open procedure, many surgeons find that laparoscopic nephrectomy offers shorter length of hospital stay, shorter time to oral intake, less pain medication requirement, earlier return to work and daily activities, a more favorable cosmetic

result and outcomes identical to that of open surgery.^{5,8} The procedures have similar complication and cancer-control rates. Numerous studies have documented longer operative time for laparoscopic approaches; however, with surgeon experience, operative times may even be shorter than with open techniques.⁹ Present study was conducted aimed to examine the initial experience of laparoscopic nephrectomy and determine the outcomes such as conversion rates, postoperative complications and postoperative hospital stay.

MATERIAL AND METHODS

This prospective descriptive study was conducted at Department of Urology Hospital Services Hospital Lahore from 1st January 2018 to 30th June 2019 for a period of 1.5 years. A total of 50 patients of both genders with ages 18 to 70 years were included in this study. Patients detailed demographics including age, gender, indications and operation site was recorded after taking informed consent. Patient with history of previous multiple surgeries in the same

side, history of laparotomy and patient refusal for laparoscopy were excluded.

All patients had undergone laparoscopic nephrectomy through transperitoneal approach under general anesthesia. Outcomes such as operative time, conversion rate, need for blood transfusion, postoperative complications and postoperative hospital stay were recorded.

Statistical analysis:

All the data was analyzed by SPSS 20.0. Mean SD was applied. Frequencies and percentages were obtained.

RESULTS

Out of 50 patients 28 (56%) patients were females and 44% patients were male. 6 (12%) patients were ages <25 years, 20 (40%) were ages 25 to 40 years, 18 (36%) were ages 41 to 55 years and 6 (12%) were ages above 55 years. Non-functional kidney due to stone disease was the most common cause of nephrectomy 35 (70%) followed by PUJ obstruction 10 (20%), chronic pyelonephritis 3 (6%) and others 2 (4%). Thirty (60%) patients had right site nephrectomy and 20 (40%) patients had left site of operation (Table-1).

Mean operative time was 170.43±8.45 minutes. Two (4%) patients need blood transfusion, 1 (2%) patient had conversion to open nephrectomy, mean hospital stay 4.32±1.45 days. One (2%) patient had wound infection. No mortality was recorded (Table-2)

Variable	No.	%
Gender		
Male	22	44.0
Female	28	56.0
Age (years)		
<25	6	12.0
25 – 40	20	40.0
41 – 55	18	36.0
>55	6	12.0
Indications		
Due to Stone	35	70.0
Due to PUJ Obstructions	10	20.0
Chronic Pyelonephritis	3	6.0
Others(small renal tumors)	2	4.0
Site		
Right	30	60.0
Left	20	40.0

Table-1: Demographic information of the patients

Outcome	No.	%
Mean operative time (minutes)	170.43±8.45	
Blood transfusion	2	4.0
Conversion to open	1	2.0
Wound infection	1	2.0
Mean hospital stay(days)	4.32±1.45	

Table-2: Outcomes recorded after Laparoscopic nephrectomy

DISCUSSION

Laparoscopic nephrectomy is commonly performed surgical minimally invasive procedure in urology settings with better outcomes and lesser complications rate.^{10,11} Laparoscopic nephrectomy is associated with a long learning curve for surgeons and at the same time in start bit lengthy operative time. Looking at the published literature one of the recent study published in which it was mentioned that although the operative time was 22 min more in laparoscopic nephrectomy group as compared to open surgery but there was decreased post op pain and decreased hospital stay.¹² Many of studies had been conducted to determine the outcomes of laparoscopic nephrectomy for non-functional kidney disease and benign renal disorders and they reported less hospital stay, low rate of conversion with better cosmetic results.^{13,14} The present study aimed to examine the outcomes of laparoscopic nephrectomy in our institution. During the study period 50 patients had received laparoscopic nephrectomy due to non-functional kidney disease and small renal tumors. In our study majority of patients were females 56% followed by male 44%. A study conducted by Khan MM et al¹⁵ regarding outcomes of laparoscopic nephrectomy in which they reported male patients was high in numbers as compared to females 53.3% vs 46.7%.

In our study we found 6 (12%) patients were ages <25 years, 20 (40%) were ages 25 to 40 years, 18 (36%) were ages 41 to 55 years and 6 (12%) were ages above 55 years. These results were similar to some other studies in which majority of patients were ages 30 to 50 years.¹⁶ In this study the most common cause of nephrectomy was non-functional kidney due to stone disease found in 35 (70%) patients followed by PUJ obstruction 10 (20%), chronic pyelonephritis 3 (6%) and small renal tumors 2 (4%). A study by Nareshet al¹⁷ reported PUJ obstruction was the most common etiology of nephrectomy.

In present study the mean operative time was 170.43 ± 8.45 minutes. Many of studies reported less operative time for laparoscopic nephrectomy as compared to open surgery.^{18,19} In our study 2 (4%) patients need blood transfusion, 1 (2%) patient had conversion to open nephrectomy, mean hospital stay 4.32 ± 1.45 days. One (2%) patient had wound infection. No mortality was recorded. These results were similar to many other studies in which patients treated with laparoscopic nephrectomy had less conversion rate, less blood loss and less hospital stay as compared to conventional open surgical procedure.^{20,21}

CONCLUSION

Laparoscopic nephrectomy considered as a safe and very effective treatment procedure with very low rate of complications. In view of the inherent benefits for patients, in terms of reduced pain, faster recovery, improved cosmetic results and shorter hospital stay, the laparoscopic approach has become the standard approach for nephrectomy in our institution.

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