

Pain score in Laparoscopic Nephrectomy -An Initial Experience in IGMC, Shimla

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Abstract

Background: Laparoscopic nephrectomy has been established as the standard of care for the management of benign non-functioning kidneys and has gained worldwide popularity over the past decade.

Methods: This study was conducted in the Department of General surgery, Indira Gandhi medical college, Shimla on 20 selected patients of benign non functional kidney admitted for elective Laparoscopic Nephrectomy between July 2018 to June 2019

Results: In patients converted to open nephrectomy 5 patients have mild pain Patients with successful lap nephrectomy were having a mean score of 0.16 ± 0.38 and in lap converted to open 0.23 ± 0.48 which is statistically significant with the value of $p=0.024$. It is concluded in our study that successful laparoscopic Nephrectomy pain was significantly low as compared to patient converted to open.

Conclusion: The pain was significantly low in the laparoscopic nephrectomy group as compared to the patient converted to open.

Keywords: Laparoscopy, Nephrectomy, VAS

Introduction

Ralph Clayman and his team at Washington university began to explore the potential for laparoscopic nephrectomy after multiple laboratory experiments on pig and observation of general surgery laparoscopy. They successfully completed the first laparoscopic nephrectomy at Washington university in 1990 via transperitoneal route with aid of newly designed tissue morcellator and organ entrapment sac tumour bearing 190 gm and kidney was delivered through an 11 mm incision. Operation time was 7hr and patient was discharged on 6th day¹. Urological laparoscopy was ushered into a new era with, the performance of this surgery.

In 1992 Winfield et.al² performed the first partial nephrectomy in a partially infected stone bearing kidney laparoscopically in a 31 yr old patient. The first laparoscopic live donor nephrectomy was performed by Dr. Louis Kavoussi and Dr. Lloyd Ratner at the Johns Hopkins Bay View Medical Center, Baltimore, USA on

8 February 1995³. Laparoscopic nephrectomies for adult polycystic kidney performed by Clayman and colleagues between 1993-1995 proved that even “Giant kidneys could be removed laparoscopically⁴.

In 1990 Kerbl K, et al. ⁵ in study of laparoscopic nephrectomy for benign and malignant disease of the kidney concluded that Laparoscopic nephrectomy is time consuming to perform, but results in minimal post-operative discomfort, a brief hospital stay and a rapid convalescence.

Material and method

Study period: This study was conducted in the Department of General surgery, Indira Gandhi medical college, Shimla on 20 selected patients of benign non functional kidney admitted for elective Laparoscopic Nephrectomy between July 2018 to June 2019

Study design: observational

Method of Collection of Data: Patients diagnosed with nonfunctioning kidney were assessed clinically, hematologically & radiologically and were taken up for laparoscopic nephrectomy. Various parameters were studied intra operatively and findings were reported as per performa attached.

The following patients were included in the study

Patient of all age groups and of both sex with nonfunctioning kidney due to

- Stone disease
- PUJ narrowing
- Renal tuberculosis
- Chronic pyelonephritis

The Patients with following conditions were excluded

- A prior abdominal surgery with the formation of intra-abdominal adhesions

- Morbid obesity
- Uncorrected coagulopathy
- Untreated infection and hypovolemic shock
- Severe cardiac or pulmonary disease
- With Pregnancy
- With Malignancy
- With Uncontrolled diabetes and uncontrolled hypertension

Results

The patients were asked to comment on the pain scale based on the visually scale at 6 hrs,12, 24, 2 wk and at 3 wk. After 6 hr of surgery, 12 (100%) patients in the lap group were having score of 5 to 8 and 6 patients in 8 to 10 pain score groups which belongs to lap converted to open group with a mean score of 3 ± 0 in lap group and 3 ± 0.5 in lap converted to open group which is statistically significant with P-value of 0.0342. There were 12 patients in the 1-2 pain score group and 10 patients in the 3-4 pain score group. Taken the end of 1 day, there was a mean score of 2 in lap group and 2.8 in lap completed by open which is statistically significant (P-value 0.0005). 10 patients in successful lap nephrectomy were pain-free and 2 patients were having a score of 1-2. In patients converted to open nephrectomy 5 patients have mild pain Patients with successful lap nephrectomy were having a mean score of 0.16 ± 0.38 and in lap converted to open 0.23 ± 0.48 which is statistically significant with the value of $p=0.024$. It is concluded in our study that successful laparoscopic nephrectomy pain was significantly low as compared to patient converted to open

Table 1: VAS score

Type of surgery	Mean VAS Score						
	6Hrs	24 Hrs	1WEEK	2 Weeks	3 Weeks	Total patients	%
LAP	3.0	2.0	1.3	1.0	0.2	12	60
Hand-assisted	3.0	2.0	1.0	1.0	1.0	1	05
LAP>Open	3.4	2.8	1.8	1.3	0.7	7	35
P value	0.0342	0.000	0.0511	0.3959	0.0240	20	100

Discussion

The patients were asked to comment on the pain scale based on the visually scale at 6 hrs, 12, 24, 2 wk and at 3 wk. After 6 hr of surgery, 12 (100%) patients in the lap group were having score of 5 to 8 and 6 patients in 8 to 10 pain score groups which belongs to lap converted to open group with a mean score of 3±0 in lap group and 3±0.5 in lap converted to open group which is statistically significant With P-value of 0.0342. There were 12 patients in the 1-2 pain score group and 10 patients in the 3-4 pain score group. Taken the end of 1 day, there was a mean score of 2 in lap group and 2.8 in lap completed by open which is statistically significant (p-value 0.0005) . 10 patients in successful lap nephrectomy were pain-free and 2 patients were having a score of 1-2, In patients converted to open nephrectomy 5 patients have mild pain. Patients with successful lap nephrectomy were having a mean score of 0.16±0.38 and in lap converted to open 0.23 ±0.48 which is statistically significant with the value of P=0.024. It is concluded in our study that successful laparoscopic nephrectomy pain was significantly low as compared to patient converted to open.

Analgesic was given according to the VAS score pain score might be associated with a person's preoperative preparation, pain sensitivity and personal expectations. Parenteral Paracetamol, Tramadol and Bupivacaine epidural top-up were given to patients. The analgesic

requirement for the laparoscopic group was a range from (4 to 8 days). The mean day of analgesic used in lap group was 4.5 ± 1 days and in lap converted to open was 6.4± 1.5 days which is significantly low in lap group with (p-value of 0.00451) which is statistically significant. Hemal et al⁶ observed analgesic requirement for 3.5 days

In the present study, a mean 5.25 gm of PCM was used, 43 mg of Bupivacaine & 289.2 mg of Tramadol was used. Fornara et al ⁷ LN group required less morphine sulfate equivalent (12 vs. 20 mg) for pain control Kerbl et al⁸ (1994) observed analgesic requirement of 54 mg morphine sulfate, McDougall et al⁹ observed requirement of 37 MS.

Conclusion

The pain was significantly low in the laparoscopic nephrectomy group as compared to the patient converted to open. In early stage nephrectomy pain was less

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