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BLOOD LOSS 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: Less than 100 ml of blood was lost in 3(15%) of the patient. 100 to 200 ml was lost in 9(45%) and in 3(15%) patients 200 to 300 ml blood was lost and 5 (25%) had blood loss more than 300 ml. The mean blood loss in successful laparoscopic nephrectomy was 129 ±123 ml and in lap converted to open was 435.7 ± 174.9 ml. which is significantly less in successful lap nephrectomy which is statistically significant with a p-value of o.oo3

Conclusion: Mean blood loss in laparoscopic nephrectomy was 145 ±144 ml and in converted cases, it was 350±200 ml. mean blood loss in hydronephrotic kidney was 145± 144.2 ml in pyonephrotic kidney 325± 318 in end stage nephrolithiasis 350± 200 ml .There was more blood loss in ESRD and pyonephrotic kidney due to dense adhesion whereas blood loss is less in hydronephrotic kidney due to well maintained plane for dissection .

Keywords: Laparoscopy, Nephrectomy, Blood loss

Introduction

Nephrectomy is one of the most common ablative surgeries performed by urologists. Apart from the psychological trauma of losing a kidney, the patient usually undergoes significant discomfort and disfigurement due to the extensive surgical incision. The traditional approaches require a large muscle cutting skin incision in order to reach the organ. Until the last decade there was no option but to undergo this mutilation in order to achieve the end result.[1]

In the last decade minimally invasive surgery has become the frontier of surgical development. From its initial diagnostic use in gynaecology to the current advanced oncological and reconstructive surgery, laparoscopy has become firmly established in the armamentarium of surgeons in every field. The advantages of lower post-operative pain, minimal scars, rapid recovery and early return to work have offset the marginal increase in instrumentation costs and longer training period for the surgeon. With the introduction of re-usable gadgetry and cost consciousness this can be minimized.[2,3]

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 non functioning 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 non functioning 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

Blood loss was estimated by the anesthetist based on the number of gauze pieces soaked & the amount of blood in the suction.

Less than 100 ml of blood was lost in 3(15%) of the patient. 100 to 200 ml was lost in 9(45%) and in 3(15%) patients 200 to 300 ml blood was lost and 5 (25%) had blood loos more than 300 ml.

The mean blood loss in successful laparoscopic nephrectomy was 129 ±123 ml and in lap converted to open was 435.7 ± 174.9 ml. which is significantly less in successful lap nephrectomy which is statically significant with a p-value of p= o.oo3

The Mean Blood loss in hydronephrotic kidney was 145 ml + 144.2, and in pyonephrotic kidney, it was 325 ml +318.19 and in end-stage nephrolithiasis, it was 350 ±200 ml

Table 1: Blood loss wise distribution

Estimated blood loss	No. of patients	Percentage distribution %
<100	3	15
100-200	9	45
200-300	3	15
>300	5	25

Table 2: Blood loss in different type of surgery

Type of surgery	Mean blood loss in ml	
Lap	145± 144.24	
Hand-assisted	325±318.19	p= o.oo3
Lap completed by open	350 ±200	

Discussion

In the present study blood loss was in the range of 50 to 200 ml and the mean blood loss in successful laparoscopic nephrectomy was 129 ±123 ml and in lap converted to open was 435.7 ± 174.9 ml. which is statically significant with a P-value of o.oo3. Patients converted to open resulted in higher blood loss, including end-stage nephrolithiasis, pyonephrosis and xanthogranulomatous and tubercular kidneys. It required postoperative blood transfusion.

Shekarriz B et al**.** [4]found that In the inflammatory and benign groups mean blood loss was 155 ± 163 and 59 ± 23 ml. LCheung, MC et al.[5] estimated mean blood loss was 370 mL, Kerbl et al [6] observed blood loss of 355 ml, Parra et al (1995)[7] observed blood loss of 140 ml Desai et al.[8] observed 169 Ml of blood loss

Conclusion

Mean blood loss in laparoscopic nephrectomy was 145 ±144 ml and in converted cases, it was 350±200 ml. mean blood loss in hydronephrotic kidney was 145± 144.2 ml in pyonephrotic kidney 325± 318 in end stage nephrolithiasis 350± 200 ml .There was more blood loss in ESRD and pyonephrotic kidney due to dense adhesion whereas blood loss is less in hydronephrotic kidney due to well maintained plane for dissection .

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