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Original Research

Evaluation of efficacy of analgesia with quadratus lumborum in patients undergoing laparoscopic renal surgeries

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ABSTRACT:
Background: One common technique for renal therapy is laparoscopic renal surgery (LRS), which can be performed via the retroperitoneal or transperitoneal approach. However, moderate-to-severe pain persists in the early postoperative phase even though LRS causes less surgical trauma than open surgery. The present study assessed efficacy of analgesia with QLB in unilateral laparoscopic renal surgeries. **Materials & Methods:** 70 patients of unilateral laparoscopic renal surgeries of both genders were studied. Two groups of thirty-five patients each were created. At the conclusion of surgery, group I received QLB while group II did not receive any block. A 1 mg bolus and a 10-minute lockout interval were used while administering morphine via a patient-controlled analgesia pump. The amount of morphine consumed overall was noted. Both groups received standardized general anesthesia. A Visual Analogue Scale (VAS) was used to measure the pain. **Results:** Group I had 20 males and 15 females and group II had 18 males and 17 females. The mean age was 36.5 years in group I and 40.5 years in group II, height was 160.2 cm in group I and 162.4 cm in group II, weight was 67.4 kgs in group I and 73.1 kgs in group II, duration of surgery was 49.3 minutes in group I and 43.2 minutes in group II in group I and II respectively. Total morphine consumption was 3.2 mg in group I and 9.6 mg in group II and duration of post- operative analgesia was 1116.3 minutes in group I and 189.6 minutes in group II. The difference was non- significant ($p > 0.05$). Type of surgery performed was laparoscopic nephrectomy 14 in group I and 12 in group II, laparoscopic pyelolithotomy seen in 11 in group I and 11 in group II, and laparoscopic pyeloplasty 10 in group I and 12 in group II. The mean VAS was 2.8 in group I and 3.7 in group II. The difference was non- significant ($p > 0.05$). **Conclusion:** After laparoscopic renal procedures with ultrasound-guided QLB, there was a decrease in the use of opioids.
Key words: laparoscopic renal surgery, pain, Ultrasound-guided QLB

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INTRODUCTION

One common technique for renal therapy is laparoscopic renal surgery (LRS), which can be performed via the retroperitoneal or transperitoneal approach.[1] However, moderate-to-severe pain persists in the early postoperative phase even though LRS causes less surgical trauma than open surgery. For a speedy recovery following surgery, adequate pain management is essential. Despite being the most often used analgesics, opioids have adverse effects such respiratory depression, gastrointestinal ileus, and postoperative nausea and vomiting.[2,3]

For moderate to severe post-operative pain following abdominal procedures, opioids are frequently utilized as the standard of care. Strong opioids, however, can result in constipation, nausea, vomiting, pruritus, urine retention, decreased intestinal motility, and even respiratory depression. Irrational non-steroidal anti-inflammatory medications (NSAIDs) cause gastrointestinal hemorrhage, renal failure, and disturbed hemostasis.[4] In contrast to transversus abdominis plane (TAP) block, which eliminates somatic pain, ultrasound (US)-guided quadratus lumborum (QL) block is a newly developed block that has been demonstrated to give both somatic and visceral analgesia.[5]Carney has documented the use of quadratuslumborum (QL) block as an analgesic for abdominoplasty (unpublished). The distribution of the

dye and local anesthetics from T4-L1 has been demonstrated by the radiological investigation on the posterior approach of Transversus Abdominis Plane block (now known as QL block) in volunteers. Its effectiveness in a major surgery has not yet been established.[6]The present study assessed efficacy of analgesia with QLB in unilateral laparoscopic renal surgeries.

MATERIALS & METHODS

The present study comprised of 70 patients of unilateral laparoscopic renal surgeries of both genders.All were informed regarding the study and their written consent was obtained.

Data such as name, age, gender etc. was recorded. Two groups of thirty-five patients each were created. At the conclusion of surgery, group I received QLB while group II did not receive any block. A 1 mg bolus and a 10-minute lockout interval were used while administering morphine via a patient-controlled analgesia pump. The amount of morphine consumed overall was noted. Both groups received standardized general anesthesia. A Visual Analogue Scale (VAS) was used to measure the pain. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Groups	Group I	Group II
Agent	QLB	No block
M:F	20:15	18:17

Table I shows that group I had 20 males and 15 females and group II had 18 males and 17 females.

Table II Comparison of parameters

Parameters	Group I	Group II	P value
Age (years)	36.5	40.5	0.91
Height (cm)	160.2	162.4	0.85
Weight (Kgs)	67.4	73.1	0.92
Duration of surgery (mins)	49.3	43.2	0.81
Total morphine consumption (mg)	3.2	9.6	0.01
Duration of post-operative analgesia (mins)	1116.3	189.6	0.001

Table II shows that mean age was 36.5 years in group I and 40.5 years in group II, height was 160.2 cm in group I and 162.4 cm in group II, weight was 67.4 kgs in group I and 73.1 kgs in group II, duration of surgery was 49.3 minutes in group I and 43.2 minutes in group IIin group I and II respectively. Total morphine consumption was 3.2 mg in group I and 9.6 mg in group II and duration of post- operative analgesia was 1116.3 minutes in group I and 189.6 minutes in group II. The difference was non- significant (p> 0.05).

Graph I Comparison of parameters

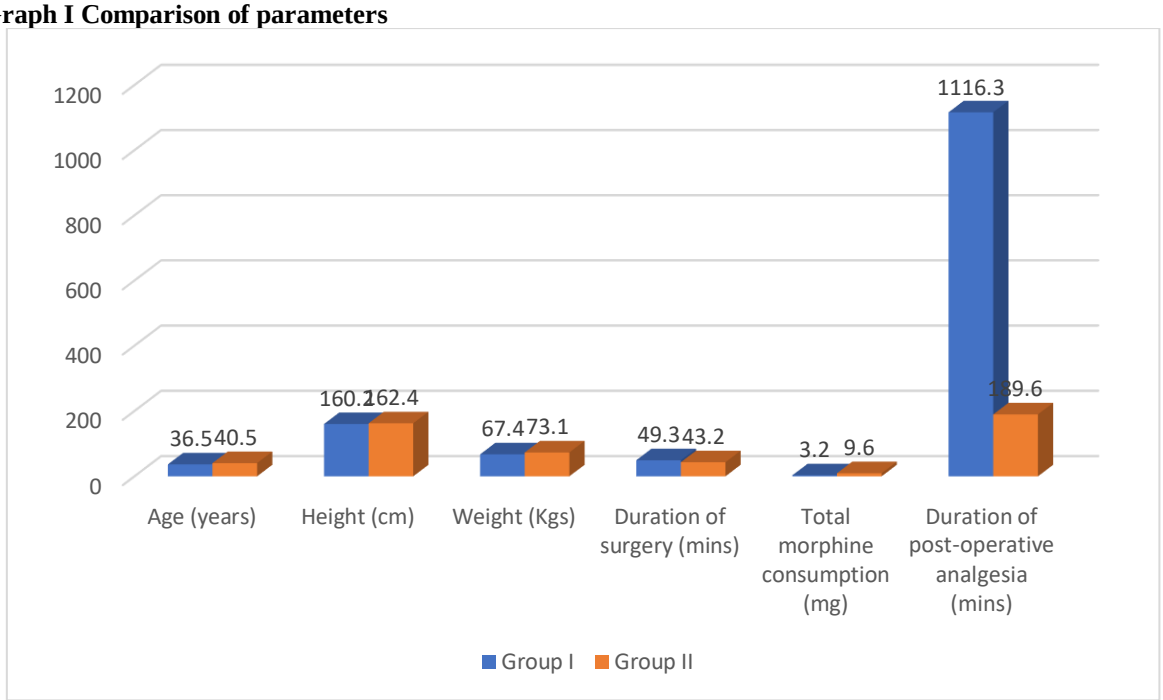
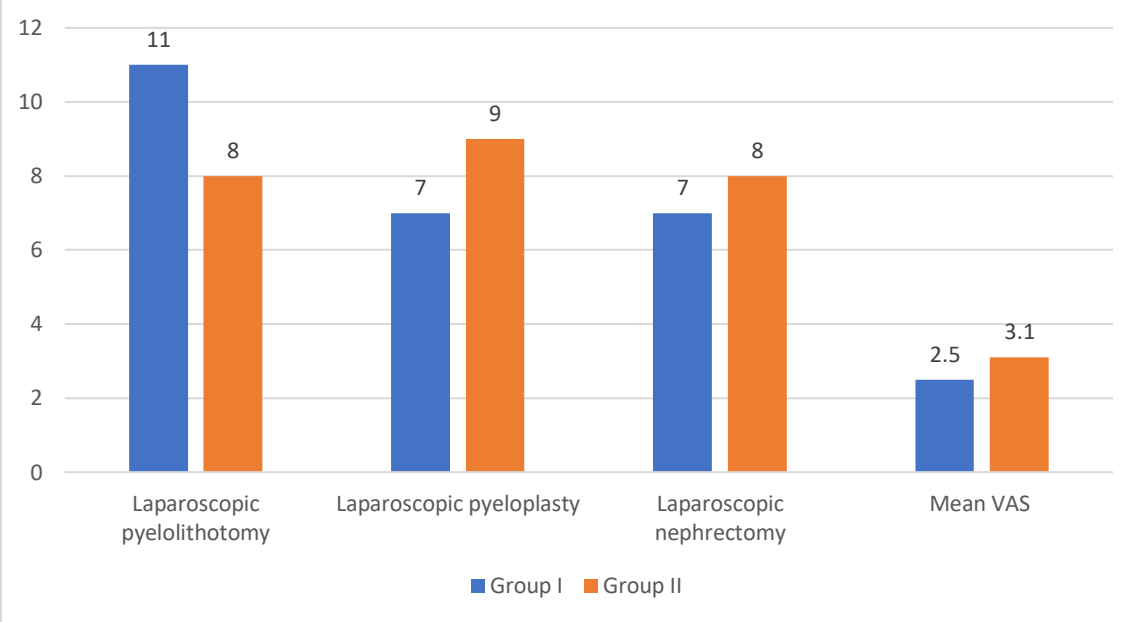


Table III Type of surgery performed and VAS

Surgery	Group I	Group II	P value
Laparoscopic nephrectomy	14	12	0.52
Laparoscopic pyelolithotomy	11	11	
Laparoscopic pyeloplasty	10	12	
Mean VAS	2.8	3.7	

Table III shows that type of surgery performed was laparoscopic nephrectomy14 in group I and 12 in group II, laparoscopic pyelolithotomy seen in 11 in group I and 11 in group II, and laparoscopic pyeloplasty10 in group I and 12 in group II. The mean VAS was 2.8 in group I and 3.7 in group II. The difference was non- significant (p> 0.05).



DISCUSSION

Compared to open urological treatments including nephrectomy, pyelolithotomy, and pyeloplasty, the laparoscopic approach offers several advantages. This entails a shorter hospital stay, less tissue damage, quicker recovery, and a smaller incision.[7] Following laparoscopic urological operations, post-operative pain can impact improved recovery programs, increase morbidity, induce psychological disruptions, and lengthen hospital stays. There have also been numerous adverse effects and difficulties linked to epidural analgesia.[8,9] Regional nerve blocks and intravenous (IV) patient-controlled analgesia are being used in post-operative pain management. Excellent site-specific pain relief and a decrease in significant adverse effects are provided by regional nerve blocks. In addition to being helpful in effectively managing acute pain, newer methods of regional analgesia, longer-acting LA and adjuvants, and ultrasonic safety also help avoid the development of chronic pain.[10]The present study assessed efficacy of analgesia with QLB in unilateral laparoscopic renal surgeries.

We found that Group I had 20 males and 15 females and group II had 18 males and 17 females. The mean age was 36.5 years in group I and 40.5 years in group II, height was 160.2 cm in group I and 162.4 cm in group II, weight was 67.4 kgs in group I and 73.1 kgs in group II, duration of surgery was 49.3 minutes in group I and 43.2 minutes in group II in group I and II respectively. Total morphine consumption was 3.2 mg in group I and 9.6 mg in group II and duration of post-operative analgesia was 1116.3 minutes in group I and 189.6 minutes in group II. For post-operative analgesia after a cesarean delivery, Öksüz G et al[11] contrasted QLB with transversus abdominis plane block (TAPB). At the conclusion of the procedure, both blocks were executed bilaterally using 0.2% ropivacaine. They discovered that QLB had a considerably longer duration of post-operative analgesia (68.77 ± 1.74 hours) than TAPB (13.3 ± 1.21 hours). The authors explain that the sustained analgesia they were able to produce in their trial was caused by the local anesthetic spreading into the paravertebral area along the thoracolumbar and endothoracic fascias.

We found that type of surgery performed was laparoscopic nephrectomy 14 in group I and 12 in group II, laparoscopic pyelolithotomy seen in 11 in group I and 11 in group II, and laparoscopic pyeloplasty 10 in group I and 12 in group II. The mean VAS was 2.8 in group I and 3.7 in group II.Tran et al[12] conducted a study comparing QLB with TAPB in caesarean delivery. They were able to demonstrate that QLB produced long-lasting analgesia for more than 24 hours and required less consumption of

opioids.Blanco et al[13] conducted a study comparing QLB with TAPB in caesarean delivery. They were able to demonstrate that QLB produced long-lasting analgesia for more than 24 h and required less consumption of opioids.

CONCLUSION

Authors found that after laparoscopic renal procedures with ultrasound-guided QLB, there was a decrease in the use of opioids.

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