International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2025: 7.089

# Comparative Study of TAP Block and Quadratus Lumborum Block for Postoperative Analgesia in Inguinal Hernia Repair

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**Abstract:** ***Background: Postoperative pain after inguinal hernia repair can delay recovery and prolong hospital stay. Regional techniques such as Transversus Abdominis Plane (TAP) block and Quadratus Lumborum (QL) block are increasingly used to improve analgesia. Aim: To compare the analgesic efficacy and duration of ultrasound-guided TAP block and QL block. Methods: Sixty adult patients undergoing elective inguinal hernia repair under spinal anesthesia were randomly divided into two groups. Group T received TAP block and Group Q received QL block using 0.25% bupivacaine. Pain was assessed using VAS score, duration of analgesia, and rescue analgesic requirement. Results: QL block showed significantly prolonged analgesia (15.2 ± 2.4 hours) compared to TAP block (9.1 ± 2.1 hours). VAS scores were lower and rescue analgesic requirement was reduced in the QL group. Conclusion: QL block provides superior and longer-lasting postoperative analgesia compared to TAP block.***

**Keywords:** TAP block, Quadratus Lumborum block, inguinal hernia, postoperative analgesia

## 1. Introduction

Effective postoperative pain control is essential following inguinal hernia repair to facilitate early mobilization and enhance patient recovery. Systemic analgesics may cause adverse effects, prompting the use of regional techniques.

TAP block provides somatic analgesia of the anterior abdominal wall, while QL block may provide extended analgesia due to spread along the thoracolumbar fascia.

This study compares these two techniques.

## 2. Materials and Methods

This prospective randomized study included 60 patients (ASA I–II) aged 18–60 years undergoing elective inguinal hernia repair.

Patients were divided into:
- Group T: TAP block
- Group Q: QL block

Both blocks were administered under ultrasound guidance using 20 ml of 0.25% bupivacaine.

Primary outcome: Duration of analgesia

Secondary outcomes: VAS score, rescue analgesic requirement, complications

Statistical analysis was done using Student's t-test and Chi-square test. $P < 0.05$ was considered significant.

## 3. Results

Demographic data and outcomes are summarized below.

| Parameter | TAP | QL | p value |
|---|---|---|---|
| Age | 42.3 ± 8.1 | 41.7 ± 7.6 | 0.74 |
| Weight | 68.2 ± 6.5 | 67.5 ± 7.2 | 0.69 |
| Duration of surgery | 60 ± 10 | 58 ± 9 | 0.41 |

| Group | Duration of Analgesia (hrs) |
|---|---|
| TAP | 9.1 ± 2.1 |
| QL | 15.2 ± 2.4 |

## 4. Discussion

QL block provided significantly prolonged analgesia compared to TAP block. The likely mechanism is spread of local anesthetic along the thoracolumbar fascia, resulting in broader sensory blockade.

Findings are consistent with previous literature suggesting superiority of QL block in abdominal surgeries.

## 5. Limitations

Single-center study with limited sample size. Larger studies are recommended.

## 6. Conclusion

QL block is more effective than TAP block for postoperative analgesia in inguinal hernia repair.

## References

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