



General Surgery

A COMPARATIVE STUDY OF LICHTENSTEIN HERNIOPLASTY PERFORMED UNDER SPINAL VERSUS LOCAL ANAESTHESIA IN UNILATERAL INGUINAL HERNIA

Dr. K. Sudeep Srivatsav	Junior Resident, Department of General Surgery, Saraswathi Institute of Medical Sciences.
Dr. Amit Agarwal	Professor and Head of Department, Department of General Surgery, Saraswathi Institute of Medical Sciences.
Dr. Rajib Kumar Majumdar	Professor, Department of General Surgery, Saraswathi Institute of Medical Sciences.
Dr Shaleen Jain	Associate professor, Department of general surgery, Saraswathi institute of medical sciences.

ABSTRACT **Background:** Lichtenstein tension-free mesh hernioplasty is the gold standard for open inguinal hernia repair. The choice of anaesthesia significantly influences postoperative recovery and complication rates. **Materials And Methods:** A prospective comparative study was conducted on 84 patients undergoing unilateral inguinal hernia repair under spinal or local anaesthesia. **Results:** Local anaesthesia was associated with significantly lower postoperative pain, earlier ambulation, fewer anaesthesia-related complications, and shorter hospital stay. **Conclusion:** Local anaesthesia is a safe and effective alternative to spinal anaesthesia.

KEYWORDS : Inguinal hernia, Lichtenstein hernioplasty, Local anaesthesia, Spinal anaesthesia, Postoperative pain

INTRODUCTION

Inguinal hernia repair is one of the most frequently performed procedures in general surgery. The Lichtenstein tension-free mesh technique has gained universal acceptance due to its low recurrence rates and technical simplicity. Anaesthetic technique plays a pivotal role in perioperative outcomes. Spinal anaesthesia, though widely practiced, is associated with urinary retention, hypotension, and delayed ambulation. Local anaesthesia offers effective analgesia, early mobilization, reduced hospital stay, and lower healthcare costs.

MATERIALS AND METHODS

This prospective non-randomized comparative study was conducted at Saraswathi Institute of Medical Sciences, Hapur. Eighty-four adult male patients with uncomplicated unilateral inguinal hernia were included. Patients were divided into two equal groups based on anaesthetic technique. Postoperative pain was assessed using the Visual Analogue Scale (VAS). Statistical analysis was performed using SPSS software, and a p-value < 0.05 was considered statistically significant.

Table 1: Demographic Profile Of Study Population

Parameter	Local Anaesthesia (n=42)	Spinal Anaesthesia (n=42)
Mean age (years)	45.6 ± 9.8	46.2 ± 10.1
Indirect hernia	30	28
Direct hernia	12	14

RESULTS

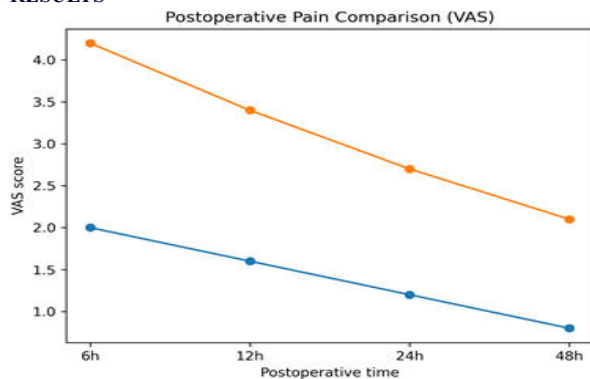


Figure 1: Postoperative pain comparison using VAS score (line diagram).

The demographic characteristics of both groups were comparable with no statistically significant difference in age or hernia type.

Postoperative pain assessment revealed a statistically significant reduction in VAS scores in the local anaesthesia group at 6, 12, 24, and 48 hours postoperatively ($p < 0.001$). The mean VAS score at 6 hours was 2.0 ± 0.6 in the local anaesthesia group compared to 4.2 ± 0.8 in the spinal anaesthesia group. Early ambulation within 6 hours was achieved in 90% of patients receiving local anaesthesia, whereas delayed ambulation was common in the spinal anaesthesia group due to residual motor blockade. Anaesthesia-related complications such as urinary retention, post-dural puncture headache, and hypotension were significantly more frequent in the spinal anaesthesia group. The mean duration of hospital stay was significantly shorter in the local anaesthesia group (1.2 ± 0.4 days) compared to the spinal anaesthesia group (2.6 ± 0.7 days).

Figures

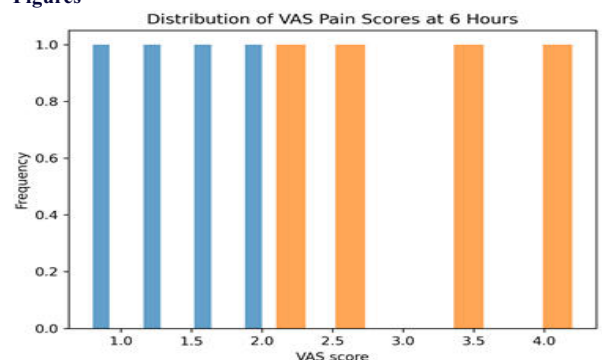


Figure 2: Histogram showing distribution of VAS pain scores at 6 hours postoperatively.

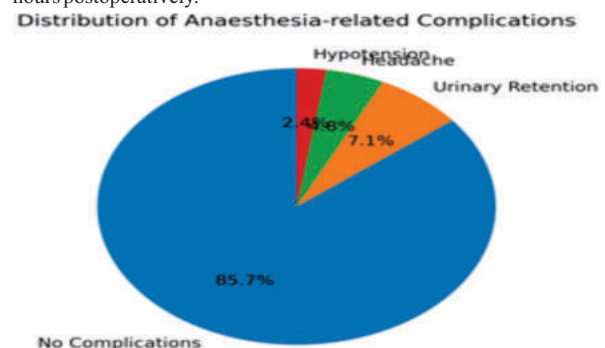


Figure 3: Pie chart depicting distribution of anaesthesia-related complications.

DISCUSSION

The present study demonstrates that local anaesthesia provides superior postoperative outcomes compared to spinal anaesthesia for Lichtenstein inguinal hernioplasty. Significantly lower postoperative pain scores observed in the local anaesthesia group can be attributed to sustained local analgesic effects and avoidance of neuraxial sympathetic blockade. Early ambulation observed in this group reduces the risk of thromboembolic events and enhances patient comfort and satisfaction. In contrast, spinal anaesthesia was associated with higher rates of urinary retention and post-dural puncture headache, which contributed to prolonged hospital stay. These findings are consistent with multiple randomized controlled trials and international guidelines, which recommend local anaesthesia as the preferred technique for uncomplicated inguinal hernia repair. The adoption of local anaesthesia is particularly advantageous in high-volume and resource-limited settings. Limitations of the present study include the non-randomized design and relatively short follow-up period; however, the consistency of results with existing literature supports the validity of the conclusions.

CONCLUSION

Local anaesthesia is a safe, effective, and patient-friendly alternative to spinal anaesthesia for Lichtenstein hernioplasty. It is associated with reduced postoperative pain, fewer complications, earlier ambulation, and shorter hospital stay.

Ethical Approval

Approved by the Institutional Ethics Committee of Saraswathi Institute of Medical Sciences, Hapur.

Informed Consent

Written informed consent was obtained from all participants.

Conflict Of Interest

The authors declare no conflict of interest.

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REFERENCES

1. Lichtenstein IL, Shulman AG, Amid PK, Montllor MM. The tension-free hernioplasty. *Am J Surg*. 1989.
2. Amid PK. Lichtenstein tension-free hernioplasty: its inception, evolution, and principles. *Hernia*. 2004.
3. Kingsnorth A, LeBlanc K. Hernias: inguinal and incisional. *Lancet*. 2003.
4. Kehlet H, White PF. Optimizing anesthesia for inguinal hernia repair. *Anesth Analg*. 2002.
5. Nordin P et al. Local, regional, or general anaesthesia in groin hernia repair. *Br J Surg*. 2003.
6. Callesen T et al. Pain after groin hernia repair. *Br J Surg*. 1998.
7. Song D et al. Recovery profiles after hernia repair. *Anesth Analg*. 2000.
8. EU Hernia Trialists Collaboration. Mesh versus non-mesh repair. *N Engl J Med*. 2002.
9. Bay-Nielsen M et al. Chronic pain after hernia repair. *Lancet*. 2001.
10. Kehlet H. Fast-track surgery principles. *Br J Surg*. 2008.
11. Alfieri S et al. International guidelines for groin hernia management. *Hernia*. 2018.
12. Miserez M et al. European Hernia Society guidelines. *Hernia*. 2014.