



General Surgery

COMPARATIVE STUDY BETWEEN CYANOACRYLATE GLUE VERSUS SUTURES FOR FIXATION OF MESH IN LAPAROSCOPIC INGUINAL HERNIA REPAIR

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ABSTRACT **Introduction:** Laparoscopic inguinal hernia repair is a widely practiced technique, with mesh fixation methods playing a crucial role in determining post-operative outcomes. This study compares two common fixation methods—cyanoacrylate glue versus sutures—in terms of their clinical outcomes. **Objectives:** Comparison of the outcome of Cyanoacrylate Glue procedure versus Sutures for Fixation of Mesh procedure in the management of laparoscopic Inguinal Hernia Repair will be done in following terms of:

- Post-operative Pain (12, 24, 48, 72 hours, 1 week and 1 month)
- Chronic pain (3 months and 6 months)
- VAS Score
- Operative Time
- Hernia recurrence
- Wound/superficial infection
- Mesh/deep infection
- Hematoma
- Recovery Time

Methods: A prospective comparative observational study was conducted at SMT BK Shah Medical College, Vadodara, India, over a 12-month period. 60 patients with primary, uncomplicated inguinal hernia were randomized into two groups: Group A (suture fixation) and Group B (cyanoacrylate glue fixation). Follow-up assessments were conducted at 1 week, 1 month, 3 months, and 6 months. Various outcomes such as pain (VAS), complication rates, operative time, and recovery parameters were measured. **Results:** The cyanoacrylate glue fixation group exhibited significantly lower post-operative pain scores and required fewer rescue analgesics. The operative time and recovery time were shorter in the glue group, with a higher patient satisfaction score. No hernia recurrence was observed in either group. **Conclusion:** Cyanoacrylate glue fixation for laparoscopic inguinal hernia repair demonstrates superior outcomes in terms of post-operative pain management, faster recovery, and similar complication rates, making it a viable alternative to sutures.

KEYWORDS :

INTRODUCTION

Laparoscopic inguinal hernia repair is a widely practiced technique, with mesh fixation methods playing a crucial role in determining post-operative outcomes. This study compares two common fixation methods—cyanoacrylate glue versus sutures—in terms of their clinical outcomes.

METHODS

Design: Prospective Comparative Observational Study

Setting: Department of General Surgery, SBKS Medical Institute & Research Centre

Participants: 60 patients with primary, uncomplicated inguinal hernia

Intervention: Participants were randomized into two groups: Group A (suture fixation) and Group B (cyanoacrylate glue fixation).

Outcome: Pain (VAS), complication rates, operative time, and recovery parameters were measured.

Analysis: Descriptive statistics

RESULTS

Demographics: Mean age for suture fixation group was 45 years while for glue fixation it was 44 years.

Diagnosis: Right Sided uncomplicated inguinal hernia was more common

Procedure: Laparoscopic inguinal hernia repair under two groups

Group A : Suture Fixation

Group B : Cyanoacrylate glue fixation

Pain: The cyanoacrylate glue fixation group exhibited significantly lower post-operative pain scores and required fewer rescue analgesics.

Complications: Seroma occurred in 3.3% of glue fixation recipients while 10% of recipients of suture fixation had seroma as early complication

Hematoma in 6.7% of suture fixation group

Wound infection- 3.3% in both groups

Recovery: Patients with glue fixation had early return to normal activities

DISCUSSION

Our findings corroborate studies demonstrating cyanoacrylate glue fixation in laparoscopic inguinal hernia repair. Canonico S et al. (2008)

conducted a preliminary study in 2008 to evaluate the feasibility of using human fibrin glue (Tissucol) instead of sutures for mesh fixation. The authors reported that fibrin glue significantly reduced operative time (mean 35 vs. 48 minutes) and postoperative pain scores at 24 hours.

Paajanen H et al. (2011) performed a prospective randomized trial in 2011 comparing fibrin glue and sutures for mesh fixation in laparoscopic transabdominal preperitoneal (TAPP) hernia repair. The glue group had shorter operative times (42 vs. 55 minutes) and significantly lower pain scores at 24 hours (1.8 vs. 3.5).

Despite encouraging results seroma formation was seen as an early complication.

CONCLUSION

Cyanoacrylate glue fixation for laparoscopic inguinal hernia repair demonstrates superior outcomes in terms of post-operative pain management, faster recovery, and similar complication rates, making it a viable alternative to sutures.

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