

INPLASY

Effectiveness of Self-gripping Mesh vs Sutured Mesh in Lichtenstein Inguinal Hernia Repair: A Meta-analysis and GRADE Assessment

INPLASY202620050

doi: 10.37766/inplasy2026.2.0050

Received: 14 February 2026

Published: 14 February 2026

Jiang, T; Li, YJ; Zhang, C; Dong, H.

Corresponding author:

Tao Jiang

jiangtaozigong@163.com

Author Affiliation:

Zigong Fourth People's Hospital.

ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202620050

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 14 February 2026 and was last updated on 14 February 2026.

INTRODUCTION

Review question / Objective This systematic review and meta-analysis aims to compare the clinical effectiveness and safety of self-gripping mesh and sutured mesh in Lichtenstein inguinal hernia repair, focusing on surgical time, postoperative pain, hospital stay, complications, and recurrence rates.

Condition being studied Inguinal hernia requiring Lichtenstein repair, a common condition that requires mesh for long-term reinforcement. The choice between self-gripping and sutured meshes could influence surgical outcomes.

METHODS

Participant or population Adult patients diagnosed with unilateral or bilateral primary inguinal hernia who underwent elective Lichtenstein tension-free hernia repair, regardless of gender, BMI, or comorbidities.

Intervention Lichtenstein hernia repair using self-gripping mesh.

Comparator Lichtenstein hernia repair using traditional sutured mesh.

Study designs to be included Randomized controlled trials.

Eligibility criteria Randomized controlled trials (RCTs).

Adult patients undergoing Lichtenstein hernia repair.

Direct comparison between self-gripping and sutured mesh.

Reporting at least one of the following outcomes: surgical time, postoperative pain, hospital stay, chronic pain incidence, or recurrence.

Information sources The literature search was conducted in PubMed, Embase, Cochrane Library, and Web of Science.

Main outcome(s) Surgical time, Postoperative pain (24-hour pain score), Hospital stay, seroma incidence, hematoma incidence, Chronic pain incidence (1-year and 2-year postoperative), Recurrence rate.

Quality assessment / Risk of bias analysis Risk of bias was assessed using the Cochrane Risk of Bias tool (RoB 1.0) across various domains.

Strategy of data synthesis Meta-analysis was conducted using RevMan 5.4 software. Continuous outcomes were expressed as mean differences (MD) with 95% confidence intervals (CI), and dichotomous outcomes as relative risks (RR) with 95% CI. Fixed- or random-effects models were applied depending on heterogeneity (I^2 statistic).

Subgroup analysis Subgroup analyses were conducted based on sample size, whether self-gripping mesh was sutured, and publication year.

Sensitivity analysis Sensitivity analysis was performed to check the robustness of the results.

Country(ies) involved China.

Keywords Self-gripping mesh; Sutured mesh; Lichtenstein inguinal hernia repair; Meta-analysis; GRADE assessment; Randomized controlled trial.

Contributions of each author

Author 1 - Tao Jiang.

Author 2 - Yuejuan Li.

Author 3 - Chen Zhang.

Author 4 - Hui Dong.