

INPLASY PROTOCOL

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Meta-analysis of mesh -plug repair and Lichtenstein repair in the treatment of primary inguinal hernia

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Review question / Objective: Population: Adults with inguinal hernia Intervention: mesh-plug repair Comparison: Lichtenstein repair Outcome: ① operation time; ② discomfort in the inguinal region; ③ haematoma; ④ seroma; ⑤ infection; ⑥ time to return to normal activities; ⑦ incidence of postoperative chronic pain; and ⑧ recurrence rate . Study design: Published randomized controlled trials (RCT) meet the eligibility criteria.

Condition being studied: The number of cases reported in the literature is small, the observation indicators are incomplete, the study conclusions are not consistent, the statistical results are not wholly persuasive, and there is a lack of high-quality, large-scale, long-term follow-up surveys and systematic evaluations of the above two types of herniorrhaphy. At present, there is still some controversy about the choice of mesh-plug and Lichtenstein herniorrhaphy. To further explore the clinical effects of the above two kinds of herniorrhaphy, this study performed a meta-analysis of the two methods.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 20 July 2020 and was last updated on 20 July 2020 (registration number INPLASY202070088).

INTRODUCTION

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METHODS

Participant or population: Adults with inguinal hernia.

Intervention: Mesh-plug repair.

Comparator: Lichtenstein repair.

Study designs to be included: The study was a randomized controlled trial.

Eligibility criteria: (1) The study was a randomized controlled trial; (2) the language is English; (3) the type of primary hernia was a direct hernia, indirect hernia, unilateral hernia, or hernia; (4) the full text of the published literature can be retrieved; (5) mesh-plug herniorrhaphy and Lichtenstein herniorrhaphy were used in the trial and control group, respectively, and the two were compared; and (6) the outcomes included operation time, groin discomfort, haematoma, seroma, infection, time to return to normal activities, incidence of postoperative chronic pain, recurrence rate, and at least one of the outcomes included in the literature.

Information sources: PubMed, Embase, and the Cochrane Library were searched.

Main outcome(s): ① operation time; ② discomfort in the inguinal region; ③ haematoma; ④ seroma; ⑤ infection; ⑥ time to return to normal activities; ⑦ incidence of postoperative chronic pain; and ⑧ recurrence rate.

Quality assessment / Risk of bias analysis: Two researchers independently screened the literature according to the inclusion and exclusion criteria, and a third party participated in the discussion and reached a decision when there were disagreements.

Strategy of data synthesis: RevMan 5.3 software was used for the meta-analysis. Statistics were analysed using relative risk (RR) and 95% confidence interval (CI) as indicators for dichotomous variables and mean difference (MD) and 95% confidence interval (CI) for continuous variables. Literature heterogeneity was qualitatively assessed by the Q-test and I² test; when there was no significant heterogeneity among the results of each included study (P > 0.1, I² < 50%), the fixed-effect model was used to combine and analyse the results of each study.

Subgroup analysis: We will consider subgroups such as samples.

Sensibility analysis: We conduct sensitivity analysis by changing the inclusion criteria (especially controversial studies) and excluding low-quality studies.

Country(ies) involved: China.

Keywords: Hernia, groin; mesh-plug; Lichtenstein; tension-free hernia repair; Meta-analysis

Contributions of each author:

Author 1 - Miao Yu - Author 1 drafted the manuscript.

Author 2 - Wenxian Xie - The author provided statistical expertise.

Author 3 - Sheng Li - The author contributed to the development of the selection criteria, and the risk of bias assessment strategy.

Author 4 - Dengchao Wang - The author read, provided feedback and approved the final manuscript.

Author 5 - Liyan Huang - Extract study data, such as general information, outcome indicators.

Author 6 - Jian Wei - Extract study data, such as general information, outcome indicators.

Author 7 - Yue-hua Lei - Review the data extracted by author 5 and author 6.