INPLASY PROTOCOL

To cite: Dong et al. Safety of unfixed mesh in laparoscopic total extraperitoneal inguinal hernia repair: a meta-analysis of randomized controlled trials. Inplasy protocol 2022120044. doi: 10.37766/inplasy2022.12.0044

Received: 10 December 2022

Published: 10 December 2022

Corresponding author:
Dengchao Wang

wangdengchaopwk@163.com

Author Affiliation:
Zigong Fourth People's Hospital.

Support: **None.**

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

Conflicts of interest:
None declared.

SAFETY OF UNFIXED MESH IN LAPAROSCOPIC TOTAL EXTRAPERITONEAL INGUINAL HERNIA REPAIR: A META-ANALYSIS OF RANDOMIZED CONTROLLED TRIALS

Dong, H[1]; Li, L[2]; Feng, HH[3]; Wang, DC[4]; Jiang, T[5]; Chen, WX[6]; Yu, M[7].

Review question / Objective: **Whether the effect of the unfixed mesh during laparoscopic total extraperitoneal (TEP) inguinal hernia repair is safe and whether it can lead to hernia recurrence remains controversial.**
Condition being studied: **Whether the mesh should be fixed during laparoscopic total extraperitoneal inguinal hernia repair has always been controversial. Some studies believe that displacement of the mesh is the main cause of postoperative hernia recurrence; therefore, fixing the mesh has been recommended to prevent hernia recurrence. However, other studies believe that the fixation of mesh is related to nerve injury, foreign body sensation in the operation area and chronic pain and increases the operation cost. The authors of these studies advocated that the mesh should not be fixed during TEP inguinal hernia repair.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 10 December 2022 and was last updated on 10 December 2022 (registration number INPLASY2022120044).

INTRODUCTION

Review question / Objective: **Whether the effect of the unfixed mesh during laparoscopic total extraperitoneal (TEP) inguinal hernia repair is safe and whether it can lead to hernia recurrence remains controversial.**

Condition being studied: **Whether the mesh should be fixed during laparoscopic total extraperitoneal inguinal hernia repair has always been controversial. Some studies believe that displacement of the mesh is the main cause of postoperative hernia recurrence; therefore, fixing the mesh has been recommended to prevent hernia**

recurrence. However, other studies believe that the fixation of mesh is related to nerve injury, foreign body sensation in the operation area and chronic pain and increases the operation cost. The authors of these studies advocated that the mesh should not be fixed during TEP inguinal hernia repair.

METHODS

Participant or population: Adult patients with inguinal hernia.

Intervention: The mesh was not fixed.

Comparator: The mesh was fixed.

Study designs to be included: Randomized controlled trials (RCTs).

Eligibility criteria: Adult patients with inguinal hernia, whether primary or recurrent, indirect or direct, unilateral or bilateral.

Information sources: The Cochrane Library, Embase, and PubMed databases.

Main outcome(s): Operation time, postoperative 24-hour pain score, hospital stay, time to resume normal activities after operation, cost, incidence of haematoma, incidence of urinary retention, incidence of chronic pain, and recurrence rate.

Quality assessment / Risk of bias analysis: The two authors independently evaluated the risk of bias included in the study, cross-checked the results and negotiated when they disagreed. The bias risk assessment tool recommended in 5.3 of the Cochrane System Evaluator's Manual was used to evaluate the quality of the included RCTs, including random sequence generation, allocation concealment, blinding of study subjects and performers, blinding of outcome assessors, and incomplete outcomesdata, selective reporting, and other biases were classified as low risk, unclear, and high risk.

Strategy of data synthesis: RevMan 5.3 software provided by the Cochrane Collaboration was used for meta-analysis. The risk ratio (RR) was used as the effect size for dichotomous variables, and the weighted mean difference (WMD) was used as the effect size for continuous variables. All effects were expressed as the 95% confidence interval (CI). The $\chi 2$ test was used to analyse the heterogeneity among the included studies, and I2 was used to quantitatively determine the magnitude of heterogeneity. If there was no statistical heterogeneity among the studies ($P > 0.10$, $I2 \leq 50\%$), the fixed effect model was used for meta-analysis. In contrast, after excluding obvious clinical heterogeneity, a random effect model was used for meta-analysis.

Subgroup analysis: Subgroup analysis was conducted for studies with obvious heterogeneity.

Sensitivity analysis: Sensitivity analysis was repeated each time after a single study was removed to evaluate the impact of the study on the combined effect and evaluate the impact of the study on this indicator.

Country(ies) involved: China.

Keywords: Inguinal hernia; Laparoscopic; Mesh fixation; Meta-analysis.

Contributions of each author:
Author 1 - Hui Dong.
Author 2 - Li Li.
Author 3 - Hui-He Feng.
Author 4 - Deng-Chao Wang.
Author 5 - Tao Jiang.
Author 6 - Wen-Xing Chen.
Author 7 - Miao Yu.