INPLASY

Sac transection versus complete sac reduction in laparoscopic hernia repair: A meta-analysis of randomized controlled trials

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ADMINISTRATIVE INFORMATION

Support - None.

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

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 30 May 2024 and was last updated on 30 May 2024.

INTRODUCTION

Review question / Objective This meta-analysis systematically evaluated the efficacy and safety of laparoscopic transection of the hernial sac (TS) versus complete sac reduction (RS) in tension-free repair of inguinal hernia.

Condition being studied Inguinal hernia, characterized by the protrusion of abdominal viscera into the inguinal region, was the focus of this study comparing sac transection and complete sac reduction in laparoscopic hernia repair.

METHODS

Participant or population Participants included patients diagnosed with inguinal hernia.

Intervention The experimental group underwent laparoscopic transection of the hernial sac.

Comparator The control group underwent complete reduction of the hernial sac laparoscopically.

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

Eligibility criteria The study included patients diagnosed with inguinal hernia.

Information sources PubMed, Embase, Cochrane Library, CNKI, Wanfang Data, VIP, and China Biology Medicine disc (CBM) were the data sources for this review.

Main outcome(s) The main outcome measures included operating time, postoperative 24-hour pain scores, length of hospital stay, incidence of

seroma, overall postoperative complication rate, and recurrence rate.

Quality assessment / Risk of bias analysis The risk of bias in the included studies was independently assessed by two authors, with discrepancies resolved through discussion or consultation with a third author. Quality evaluation of the randomized controlled trials (RCTs) followed the Cochrane Handbook for Systematic Reviews of Interventions 5.3 guidelines, covering various aspects such as random sequence generation, allocation concealment, blinding, handling of incomplete outcome data, selective reporting, and other potential biases, with each item categorized as low, unclear, or high risk.

Strategy of data synthesis Effect measures for continuous variables were represented by mean differences (MD), while dichotomous variables utilized relative risks (RR), each accompanied by a 95% confidence interval (CI). Statistical heterogeneity was assessed using the χ^2 test, with I2 quantifying the degree. A fixed-effects model was employed for meta-analysis in the absence of significant statistical heterogeneity (P > 0.10, I2 ≤ 50%). In cases of clinical heterogeneity, a random-effects model was applied after addressing sources of heterogeneity. Sensitivity analysis involved systematically removing one study at a time to assess its impact on the combined effect. Publication bias was evaluated through funnel plots when the number of included articles for a specific research indicator was ≥ 10.

Subgroup analysis This analysis was specifically conducted for studies exhibiting significant heterogeneity.

Sensitivity analysis To evaluate the robustness of the findings, sensitivity analysis involved systematically excluding individual studies and assessing their influence on the overall results for each outcome indicator.

Country(ies) involved China.

Keywords Laparoscopic; Inguinal hernia; Hernia Sac;Meta-analysis.

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