TRANSLATIONAL ANDROLOGY AND UROLOGY

Peer Review File

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Reviewer A

Point 1:

The authors report a systematic review and meta-analysis comparing 2 surgical techniques for laparoscopic inguinal hernia repair. They conclude that the extraperitoneal technique (TEP) leads to a higher rate of seroma formation and that the transperitoneal one (TAPP) is associated with less genital edema.

> **Reply 1:** Thank you Reviewer A for all of your effort on our work. We tried our best to contribute to this topic by including all current accessible evidence for testing the difference in complications between totally extraperitoneal (TEP) and transabdominal preperitoneal (TAPP) in herniorrhaphy.

Point 2:

From a methodological standpoint the authors should be congratulated. They flawlessly describe and accomplish all the required steps of a true systematic review, including a comprehensive search strategy with clear inclusion / exclusion criteria and data abstraction performed by independent researchers, risk of bias assessment and adequate statistical analysis and reporting.

> **Reply 2:** Thank you Reviewer A for your understanding. Our team received relevant training to do systematic review and meta-analysis. We kept rigorous methods in conducting systematic review and meta-analysis for providing clinicians better evidence in clinical practice.

Point 3:

My main criticism is related to the quality of the actual studies being reviewed and the importance of evaluating this research question. The complications mentioned could be considered minor. Any given surgical procedure is inextricably associated with complications; seromas, hematomas, wound infections and edema are not THAT common. A closer look at the included studies reveals very small sample sizes and number of events; so it is not unreasonable to consider that most of these studies are underpowered. Even if one possessed all the resources to do an RCT on hernia surgery, would we want to invest time and money to identify which surgical technique causes less seromas? I would submit that this would be a great topic for patient-oriented outcomes research; in other words we should be thinking about what is most relevant to patients pursuing hernia repair. Our future efforts (with properly powered studies) should be aimed at those.

> **Reply 3.1:** Thank you Reviewer A for your precious criticisms, and we really appreciate your comments. Quality of the randomized controlled trials we included in our synthesis had been

shown in the Supplementary File 2 in the previous submission, while no description for the quality assessment. We added descriptions for the quality among the trials (Please see Page 9, lines 217 to 220).

Changes 1 (Page 9, lines 217 to 220): Selection bias, performance bias, and attrition bias should be concerned due to insufficient information in randomization sequence and concealment, no blinding to health providers, and about 15% lost follow-up. However, many trials in this synthesis may be low risk of bias in detection and selected reporting.

Reply 3.2: We understand your concern about the importance of complications in laparoscopic herniorrhaphy, and thank you for giving us opportunity to respond to the concern. We know that recurrence rate, hospital stay, and postoperative pain after herniorrhaphy are commonly discussed in clinical practice. To our knowledge (we carefully reviewed relevant systematic reviews, meta-analyses, and randomized controlled trials (1-9)), previous evidence showed similar findings about differences in recurrence rate and hospital stay between TEP and TAPP with low heterogeneity; and a favoring trend toward TEP in postoperative pain though the findings are moderate to high heterogeneity (this may be due to subjective outcome). As we mentioned in our introduction, safety might be important information in choosing laparoscopic herniorrhaphy approach when TEP and TAPP showed comparable success rate with insignificant difference in recurrence rate. We enhanced our argument about the importance of this synthesis (Please see Pages 4 and 5, lines 111 to 113 and 119 to 120).

Changes 2.1 (Page 4, lines 111 to 113): no overview on complications between TEP and TAPP has been appropriately synthesized in previous systematic reviews and meta-analyses (3,9,10).

Changes 2.2 (Page 5, lines 119 to 120): It is necessary to conduct a comprehensive synthesis about complications between TEP and TAPP,….

Reply 3.3: Thank you Reviewer A for your valuable comments about complication. Complications after laparoscopic herniorrhaphy are not rare although they are usually minor. The HerniaSurge Group pointed out that TAPP complication rates ranged from 1.23 to 49% (median of 11.4%) and TEP complication rates ranged from 1.3 to 50.3% (median 12.5%). We added description about complication rate after laparoscopic herniorrhaphy (Please see Page 4, lines 110 to 111). In our findings, rates of seroma and edema are also higher than 10%. These may raise some concerns in clinical encounters, especially in patients. To be close to clinical practice, we, moreover, made Summary of Finding Table (Table 3) for our main findings according to the Grading of Recommendations Assessment, Development and Evaluation (GRADE) method. Then, we have noticed that absolute measures of seroma and edema may be worth to be shared to clinicians and patients (Please see Page 12, lines 305 to 307, and Table 3. We only report text below, but the table is not presented here).

Changes 2.3 (Page 4, lines 110 to 111): Unfortunately, complication rate after laparoscopic herniorrhaphy is about 10%(11),….

Changes 2.4 (Page 12, lines 305 to 307): Summary of the main findings can be found in Table 3, and certainty of the evidence ranged from very low to moderate level according to the Grading of Recommendations Assessment, Development and Evaluation (GRADE) method (12).

Reply 3.4: We really appreciate your suggestion about future efforts on this topic. Therefore, we revised our conclusion to emphasize the importance of taking patients' preference into consideration (Please see Page 18, lines 443 to 448).

Changes 2.5 (Page 18, lines 443 to 448): It might be not necessary to spend time and money on identifying which herniorrhaphy approach leads to less complications, but it is better to take patients preference into consideration in the future. In other words, besides investigation of the efficacy and safety between TEP and TAPP, providing patients more information about benefits and risk of each laparoscopic herniorrhaphy and involving patients in decision-making on laparoscopic hernia repairment are important in clinical practice.

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Reference

1. Bansal VK, Krishna A, Manek P, et al. A prospective randomized comparison of testicular functions, sexual functions and quality of life following laparoscopic totally extra-peritoneal (TEP) and trans-abdominal pre-peritoneal (TAPP) inguinal hernia repairs. Surgical Endoscopy and Other Interventional Techniques 2017;31:1478-86.
2. Bracale U, Melillo P, Pignata G, et al. Which is the best laparoscopic approach for inguinal hernia repair: TEP or TAPP? A systematic review of the literature with a network meta-analysis. Surgical Endoscopy and Other Interventional Techniques 2012;26:3355-66.
3. Chen LS, Chen WC, Kang YN, et al. Effects of transabdominal preperitoneal and totally extraperitoneal inguinal hernia repair: an update systematic review and meta-analysis of randomized controlled trials. Surg Endosc 2019;33:418-28.
4. Jeelani S, Ahmad MS, Dar HM, et al. A comparative study of transabdominal preperitoneal verses totally extra-peritoneal mesh repair of inguinal hernia. Applied Medical Research 2015;1:57-61.
5. Krishna A, Misra MC, Bansal VK, et al. Laparoscopic inguinal hernia repair: Transabdominal preperitoneal (TAPP) versus totally extraperitoneal (TEP) approach: A prospective randomized controlled trial. Surgical Endoscopy and Other Interventional Techniques 2012;26:639-49.
6. McCormack K, Wake BL, Fraser C, et al. Transabdominal pre-peritoneal (TAPP) versus totally extraperitoneal (TEP) laparoscopic techniques for inguinal hernia repair: a systematic review. Hernia 2005;9:109-14.
7. Sharma D, Yadav K, Hazrah P, et al. Prospective randomized trial comparing laparoscopic transabdominal preperitoneal (TAPP) and laparoscopic totally extra peritoneal (TEP) approach for bilateral inguinal hernias. International Journal of Surgery 2015;22:110-7.
8. Wake BL, McCormack K, Fraser C, et al. Transabdominal pre-peritoneal (TAPP) vs totally extraperitoneal (TEP) laparoscopic techniques for inguinal hernia repair. Cochrane database of systematic reviews (Online) 2005:CD004703.
9. Wei FX, Zhang YC, Han W, et al. Transabdominal Preperitoneal (TAPP) Versus Totally Extraperitoneal (TEP) for Laparoscopic Hernia Repair: A Meta-Analysis. Surg Laparosc Endosc Percutan Tech 2015;25:375-83.
10. Aiolfi A, Cavalli M, Micheletto G, et al. Primary inguinal hernia: systematic review and Bayesian network meta-analysis comparing open, laparoscopic transabdominal preperitoneal, totally extraperitoneal, and robotic preperitoneal repair. Hernia 2019;23:473-84.
11. HerniaSurge G. International guidelines for groin hernia management. Hernia : the journal of hernias and abdominal wall surgery 2018;22:1-165.
12. Guyatt G, Oxman AD, Akl EA, et al. GRADE guidelines: 1. Introduction—GRADE evidence profiles and summary of findings tables. 2011;64:383-94.