Peer Review File

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Reviewer A

This is a well-written paper containing interesting results which merit publication. For the benefit of the reader, however, a few points need clarifying and certain statements require justification. These are given.

1.The rate of complications and death should be written in the latter part of the paper.
Reply:

The rate of complications and death issues were discussed in the paper. It was added to the introduction section in order not to disrupt the integrity of the meaning and the flow of the text.

2.How do you change surgical techniques in the complicated cases with acute cholecystitis? What is the indications for Laparoscopic subtotal cholecystectomy.
Reply:

In our clinical practice, we employ modified methods such as the two-port with contraction suture, three-port modified, and four-port on the bikini line techniques. Notably, we refrain from utilizing these modified approaches in patients with symptomatic cholelithiasis whom we anticipate may develop complications, or in cases of cholecystitis graded above 1 according to the Tokyo Classification. Instead, our approach involves treating such patients exclusively with the standard four-port laparoscopic cholecystectomy (LC).

As emphasized in the article, we staunchly advocate for prioritizing safety in the surgical treatment of gallstone diseases. Given that the focus of the article is on technical advancements in laparoscopic cholecystectomy, indications for subtotal cholecystectomy were intentionally omitted. However, where we are unable to establish a "Critical View of Safety" or define the anatomy in our clinical routine, the alternative of subtotal cholecystectomy has in the back of our minds always.

Reviewer B

Thank you for review of an interesting review on laparoscopic cholecystectomy.

Comments:
1. When first discussing the American style compared to the European style with surgical positioning, please use a source. Many European surgeons in fact position themselves on the left of the patient rather than in between abducted legs (lines 65-70). In most literature, the positioning of the surgeon in lithotomy position is referred to as the “French” technique.
Youssef Y, Lee G, Godinez C, Sutton E, Klein RV, George IM, Jacob Seagull F, Park A. Laparoscopic cholecystectomy poses physical injury risk to surgeons: analysis of hand

technique and standing position. Surgical endoscopy. 2011 Jul; 25:2168-74. DOI: 10.1007/s00464-010-1517-9

Kramp KH, van Det MJ, Totte ER, Hoff C, Pierie JP. Ergonomic assessment of the French and American position for laparoscopic cholecystectomy in the MIS Suite. Surgical endoscopy. 2014 May; 28:1571-8. DOI: 10.1007/s00464-013-3353-1

Reply:

In line with your suggestions, the articles you mentioned above were reviewed and the text was rephrased.

2. In line 92-94, the gallbladder fundus should be advanced above the liver at 10 o'clock rather than the right axilla to prevent a traction injury and bile spillage. This description of the technique should be re-phrased.

Reply:

Rephrased.

3. From line 97, when discussing dissection around posterior and anterior folds, please discuss the relevance of Rouviere's sulcus in order to begin a safe dissection.

Hugh TB, Kelly MD, Mekisic A. Rouviere's sulcus: a useful landmark in laparoscopic cholecystectomy. Journal of British Surgery. 1997 Sep;84(9):1253-4. doi: 10.1046/j.1365-2168.1997.02769.x.

Reply:

Rephrased.

4. Please cite a source of the three-port modified laparoscopic cholecystectomy technique.

Reply:

Cite sources have been added.

5. Please consider discussing 3D assisted laparoscopic cholecystectomy within robotic assisted cholecystectomy. 3D laparoscopic cholecystectomy offers improved visualisation of surgical planes due to stereopsis similar to visualisation in robotic assisted procedures. 3D only differs to robotic surgery by articulation of instruments and reduced tremor, which, for experienced surgeons would not be too beneficial for the surgeon. Therefore, 3D laparoscopic cholecystectomy is much more accessible compared to robotic due to cheaper costs and allows for similar visualisation experience.

Reply:

The text was rephrased and added the following section.

"However, there are almost no studies in the literature comparing three-dimensional (3D) imaging laparoscopic cholecystectomy with robot-assisted cholecystectomy. 3D imaging provides three-dimensional visualization and stereopsis similar to robot-assisted cholecystectomy. Its disadvantage lies in the lack of instrument articulation, but this does not pose a significant drawback for experienced surgeons performing cholecystectomy surgery. In the current literature to the best of our knowledge, 3D imaging LC is often compared with traditional LC and not with robot-assisted cholecystectomy. Although the results vary, the general opinion is that it shortens the operation time and reduces complication rates."

6. Please cite sources for natural orifice transluminal endoscopic surgery.

Reply:

Cite sources have been added.

7. Consider discussing rates of bile duct injury across laparoscopic cholecystectomy. de'Angelis N, Catena F, Memeo R, Coccolini F, Martinez-Perez A, Romeo OM, et al. 2020 WSES guidelines for the detection and management of bile duct injury during cholecystectomy. World J Emerg Surg. 2021;16(1):30.

Reply:

Bile duct injury rates were discussed and the part of text was revised.

8. For literature reviews, consider discussing strengths and limitations on studies. For example when discussing length of procedures, determine study types. However, for operative techniques RCTs offer little insight as the surgeon can never be blinded to the technique therefore retrospective studies should be utilised.

Reply:

There are several limitations of this review. Due to the concept of narrative reviews, some articles may have been excluded from the study despite a careful literature review. The study design of the cited articles may not have been the optimal study design for the relevant sections and interpretation of the results may also have been affected. For example, RCTs offer little insight for operative techniques as the surgeon can never be blinded to the technique therefore retrospective studies should be utilized. These limitations may confer an increased likelihood of bias. Although this narrative review has little validity in terms of evidence, discussing evidence gaps and limitations may prompt readers to start new research in these areas.

9. Needlescopic cholecystectomy is introduced in the discussion. Define the technique earlier in the review article to offer context.

Reply:

Needlescopic cholecystectomy was discussed and a new subheading was added.

10. Length of hospital stay should also be considered in terms of elective vs emergent cases. Is there any difference between techniques when considering them in a solely elective setting or both.

Reply:

Based on your suggestions, the cited articles and relevant literature were reviewed again and the text was rephrased.

General comments:

Given that this is a review article, please make sure any assertions are supported by appropriate citations. There are quite a few minor grammatical errors, please proofread article to ensure readability. The discussion should be extended and existing literature should be appraised to strengthen this literature review.