

ANSWERING REVIEWERS

November 9, 2015

Dear Editor,

Please find enclosed the edited the full-text manuscript in Word format



Title: Novel and safer endoscopic cholecystectomy using only a flexible endoscope via single port

Author: Hirohito Mori, Nobuya Kobayashi, Hideki Kobara, Noriko Nishiyama, Shintaro Fujihara, Taiga Chiyo, Maki Ayaki, Takashi Nagase and Tsutomu Masaki

ESPS Manuscript NO: 22998

The manuscript has been improved according to the suggestions of reviewers:

1. Format has been updated
2. Revision has been made according to the suggestions of the reviewer
3. References and typesetting were corrected

All responses to comments are as following pages.

Sincerely yours,

Hirohito Mori, MD, PhD

Department of Gastroenterology and Neurology,

Faculty of medicine, Kagawa University, Japan

e-mail:hiro4884@med.kagawa-u.ac.jp

Tel: +81-87-891-2156

Fax: +81-87-891-2158

EDITOR (We response as attached file.)

COMMENT 1

Please provide language certificate letter by professional English language editing companies (Classification of manuscript language quality evaluation is B).

For manuscripts submitted by non-native speakers of English, please provided language certificate by professional English language editing companies mentioned in 'The Revision Policies of BPG for Article'.

RESPONSE 1: I agree with you. We added "CERTIFICATE of ENGLISH EDITING by Nikesh Gosalia, Vice President, Author Services, Editage.

Please see the attached file of ENGLISH CERTIFICATION.

COMMENTS 2

Authors are required to make these statements in the manuscript's title page (please see sample wording in attachment).

Besides, please provide these files, which are necessary for final acceptance, each in a separate PDF file, signed by the Correspondence author or a copy of Institution approval document(s)/letter(s) or waiver of confirmation. For sample wording and detailed information, please see the Revision policy in the attachment or Instruction to authors on our website. Thank you!

RESPONSE 2: Thank you for your informative comment: We added and revised Institutional animal care and use committee statement and Conflict-of-interest statement as revised manuscript.

COMMENT 3

Audio core tip:

In order to attract readers to read your full-text article, we request that the author make an audio file describing your final core tip, it is necessary for final acceptance. Please refer to Instruction to authors on our website or attached Format for detailed information.

RESPONSE 3

I agree with you. We added AUDIO CORE TIPS as follows:

Audio core tip

Applying the LECS concept and the ESD technique to the laparoscopic cholecystectomy, flexible endoscopic cholecystectomy approaching through a blunt port may be safer and more reliable surgical procedure and concept than conventional laparoscopic cholecystectomy. A flexible endoscope with a tip attachment and local saline injection into a layer of loose connective tissue between the gallbladder bed and liver enabled us to easily obtain sufficient space and resect the gallbladder without any damage or bleeding. Moreover, flexible endoscopic cholecystectomy needed only 1 blunt port. When it comes to the resection of the neck of the gallbladder, the ring-shaped thread sliding technique was very useful to pull up the gallbladder and to extend the neck of the gallbladder. In conclusion, we are sure of feasibility of this surgical procedure "endoscopic cholecystectomy via single port" for human.

REVIEWER #1 (2510721)

COMMENT

This paper shows a new miniinvasive procedure for cholecystectomy. It is not very clear and evident the usefulness and the need of this new procedure. It is also not proper and reasonable to consider this proposal as LECS which is instead very different.

RESPONSE

Thank you for your informative comments.

We agree with you that this new surgical procedure (endoscopic cholecystectomy: EC) isn't a kind of LECS (Laparoscopy and endoscopy cooperative surgery), but the concept is derived from LECS because it uses only 1 endoscope via single port to resect gallbladder (GB).

We revised and added the significances to make effort to establish more minimal invasive cholecystectomy in DISCUSSION section as follows (Page 9, line 10):

There are 3 advantageous points in this procedure (EC). We described these advantages as follows:

1: Reduction of port: In general, we perform laparoscopic cholecystectomy creating 4 ports by open technique (1 blunt port 12 mm in diameter in umbilical portion which is used to insert a rigid endoscopic camera and make pneumoperitoneum to keep stable pressure, 1 port 12mm in diameter in epigastric region, 2 port 5mm in diameter in Rt. hypochondriac regions to assist pulling up the fundus of the GB). In this technique (EC), the most innovative points are not only to approach to the GB via single blunt port in Rt. hypochondriac region and make pneumoperitoneum keeping stable pressure, but also to use functional advantages of flexible endoscope such as cleaning its lens function, water jet function and manual insufflation/deflation function under stable pressure by pneumoperitoneum system of the blunt port. The concept of this technique (EC) isn't similar to the natural orifice transluminal endoscopic surgery (NOTES) at all, but LECS concept which approached via port created at the abdominal wall. This procedure (EC) requires only 1 port via abdominal wall without perforation of the gut wall to approach the abdominal cavity and GB bed.

2: Direction of approach to the GB: Single incision laparoscopic surgery (SILS) needs higher surgical technique than this technique using a flexible endoscope. This is because the approach direction by SILS is from the perpendicular direction to the GB bed, and this makes it difficult to resect GB without minor injury and bleeding of the liver. On the other hand, in the EC procedure, we can approach the GB bed from the parallel direction. It is very easy to inject the natural saline to the GB bed and dissect it using attachment from parallel direction by a flexible endoscope using endoscopic submucosal dissection (ESD) method.

3: The Ring-shaped thread technique: After dissected GB bed, it is difficult to obtain clear surgical view at the Calot triangle. However, the ring thread is inserted into the GB through the endoscopic channel using grasping forceps. After clipped at 2 points, the third clip hooks 1 side of the ring thread and slides the thread crosswise to pull up the GB and is then clipped.

In this study, there are several limitations as follows and needed more animal experiments

to confirm safety of EC:

1. Small number experiments.

2. EC requires endoscopist to learn the anatomy of only the Calot triangle and its anomaly.

REVIEWER #2 (1468173)

COMMENT

Thank you for submitting your paper. The authors presented the procedure of endoscopic cholecystectomy using a flexible endoscopy via single port. This issue is interesting and worthwhile for readers. However, the aim of this experiment was unclear. What do you want to clarify? Is it beneficial for the patient to use a flexible endoscopy or to achieve whole procedure via single port? Is it true that this method is safe or beneficial compared with conventional cholecystectomy? Could you comment about them?

RESPONSE

Thank you for your informative comments.

We agree with you that this new surgical procedure (endoscopic cholecystectomy: EC) isn't a kind of LECS (Laparoscopy and endoscopy cooperative surgery), but the concept is derived from LECS because it uses only 1 endoscope via single port to resect gallbladder (GB).

We revised and added the significances to make effort to establish more minimal invasive cholecystectomy in DISCUSSION section as follows (Page 9, line 10):

There are 3 advantageous points in this procedure (EC). We described these advantages as follows:

1: Reduction of port: In general, we perform laparoscopic cholecystectomy creating 4 ports by open technique (1 blunt port 12 mm in diameter in umbilical portion which is used to insert a rigid endoscopic camera and make pneumoperitoneum to keep stable pressure, 1 port 12mm in diameter in epigastric region, 2 ports 5mm in diameter in Rt. hypochondriac regions to assist pulling up the fundus of the GB). In this technique (EC), the most innovative points are not only to approach to the GB via single blunt port in Rt. hypochondriac region and make pneumoperitoneum keeping stable pressure, but also to use functional advantages of flexible endoscope such as cleaning its lens function, water jet function and manual insufflation/deflation function under stable pressure by pneumoperitoneum system of the blunt port. The concept of this technique (EC) isn't similar to the natural orifice transluminal endoscopic surgery (NOTES) at all, but LECS concept which approached via port created at the abdominal wall. This procedure (EC) requires only 1 port via abdominal wall without perforation of the gut wall to approach the abdominal cavity and GB bed.

2: Direction of approach to the GB: Single incision laparoscopic surgery (SILS) needs higher surgical technique than this technique using a flexible endoscope. This is because the approach direction by SILS is from the perpendicular direction to the GB bed, and this makes it difficult to resect GB without minor injury and bleeding of the liver. On the other hand, in the EC procedure, we can approach the GB bed from the parallel direction. It is very easy to inject the natural saline to the GB bed and dissect it using attachment from parallel direction by a flexible endoscope using endoscopic submucosal dissection (ESD)

method.

3: The Ring-shaped thread technique: After dissected GB bed, it is difficult to obtain clear surgical view at the Calot triangle. However, the ring thread is inserted into the GB through the endoscopic channel using grasping forceps. After clipped at 2 points, the third clip hooks 1 side of the ring thread and slides the thread crosswise to pull up the GB and is then clipped.

In this study, there are several limitations as follows and needed more animal experiments to confirm safety of EC:

1. Small number experiments.

2. EC requires endoscopist to learn the anatomy of only the Calot triangle and its anomaly.

Sincerely yours,

Hirohito Mori, M.D, PhD

Department of Gastroenterology and Neurology,

Faculty of medicine, Kagawa University, Japan

e-mail:hiro4884@med.kagawa-u.ac.jp

Tel: +81-87-891-2156

Fax: +81-87-891-2158