

Analysis of Errors in Laparoscopic Cholecystectomy

Ali Aminian

Assistant Professor of General Surgery, Tehran University of Medical Sciences, Iran

INTRODUCTION

Laparoscopic cholecystectomy (LC), as a standard of care in symptomatic gallstone disease, is the most commonly performed operation of the gastrointestinal tract.¹ However, complication rate of LS is higher than open surgery,²⁻⁴ which is not a matter for discussion only at morbidity and mortality conferences or at meetings: patients are being injured.⁵ In surgical practice even a simple error may have profound consequences.

Surgical practice must be effective and safe. One of the most important responsibilities of surgical educators is teaching of safe surgery. Accordingly, one of the main objectives of world association of laparoscopic surgeons (WALS) is education of correct way of minimal access surgery. The aim of this study is to increase the awareness of laparoscopic surgeons about possible errors during laparoscopic procedures.

MATERIAL AND METHODS

In the attached DVD to this issue of world journal of laparoscopic surgery (WJLS), there is a video of LC with several errors. This operation was performed by a general surgery resident postgraduate year 4 in the teaching university hospital without the attending supervision in December 2008. This real-time video was divided into 10 parts. A questionnaire form (both paper-based and computer-based) has been made. It included the demographic data and a table. It is expected that the surgeons see the video carefully and write all errors happened in each parts of the operation. The completed form can be sent to quiz@wals.in. An award and certificate will be given to five surgeons specifying more errors in each parts of video by WALS during the next upcoming WALS meeting at 2010.

RESULTS

After receiving and analyzing the answers, a complete set of errors happened in this video will be published in the next issue of WJLS. This process will increase the awareness of laparoscopic surgeons about different errors in LC and has a great educational impact.

DISCUSSION

Training in error analysis and prevention has been well-established in high-risk activities such as aviation and space travel. There has been little research in why and how errors occur during surgery. Additionally, most of these studies concentrate on postoperative adverse events and do not reflect on surgical technical skill errors and why they may occur.⁶ Several studies have indicated that most of the adverse events are preventable.^{7,8}

Performing laparoscopic surgery involves a complex cascade of psychomotor skills. While performing such highly technical tasks, it may be very difficult not to commit some errors. Therefore, the recognition and the execution of errors is an important task for surgeons.^{6,8-10}

A good method for assessing and improving knowledge is to try to detect errors. Previous studies confirmed that the ability to detect errors is closely correlated with technical performance. By examining the error rather than reading a book or having a verbal explanation may help improve their avoidance.^{11,12} In conclusion, this study will try to improve the knowledge and subsequently the skill of laparoscopic surgeons in a novel fashion.

ANALYSIS OF ERRORS IN LAPAROSCOPIC CHOLECYSTECTOMY

One of the main objectives of world association of laparoscopic surgeons (WALS) is education of correct way of minimal access surgery. It has been proved that a good method for assessing and improving knowledge is to try to detect errors. The aim of this study is to increase the awareness of laparoscopic surgeons about possible errors during laparoscopic procedures. There is a video of laparoscopic cholecystectomy with several errors. This real-time video was divided into 10 parts. A questionnaire form (including demographic data and tables) in word format has been made. We request to see the video and write all errors happened in each parts of the operation. The completed form can be sent to quiz@wals.in Deadline for sending the answers will be at the end of the June 2009. An award and certificate will be given to five surgeons specifying more errors in each parts of video by WALS during the next upcoming WALS meeting at 2010.

Please see the video for errors and write in the Table below:
Download the video from <http://wals.in/quiz.htm>

Questionnaire (1/2)
Analysis of Errors in Laparoscopic Cholecystectomy

<i>Part</i>	<i>Errors in Section 1</i>	<i>Errors in Section 2</i>	<i>Errors in Section 3</i>	<i>Errors in Section 4</i>	<i>Errors in Section 5</i>
E R R O R S					

Questionnaire (2/2)
Analysis of Errors in Laparoscopic Cholecystectomy

<i>Part</i>	<i>Errors in Section 6</i>	<i>Errors in Section 7</i>	<i>Errors in Section 8</i>	<i>Errors in Section 9</i>	<i>Errors in Section 10</i>
E R R O R S					

Please send the completed questionnaire to:

Email: quiz@wals.in

LAPAROSCOPY HOSPITAL, 8/10 Tilak Nagar, New Delhi, 110 018. India.

Phones: +91(0)9811416838, +91(0)9811912768, +91(0)11-42138116

REFERENCES

- Orlando R 3rd, Russell JC, Lynch J, Mattie A. Laparoscopic cholecystectomy. A statewide experience. The Connecticut Laparoscopic Cholecystectomy Registry. Arch Surg 1993; 128(5):494-99.
- Archer SB, Brown DW, Smith CD, Branum GD, Hunter JG. Bile duct injury during laparoscopic cholecystectomy: results of a national survey. Ann Surg 2001;234(4):549-59.
- Karimian F, Aminian A, Mirsharifi R, Mehrkhani F. Surgical options in the management of cystic duct avulsion during laparoscopic cholecystectomy. Patient Saf Surg 2008;2:17.
- Dolan JP, Diggs BS, Sheppard BC, Hunter JG. Ten-year trend in the national volume of bile duct injuries requiring operative repair. Surg Endosc 2005;19(7):967-73.
- Rosser JC Jr, Murayama M, Gabriel NH. Minimally invasive surgical training solutions for the twenty-first century. Surg Clin North Am 2000;80(5):1607-24.
- Sarker SK, Chang A, Vincent C, Darzi AW. Technical skills errors in laparoscopic cholecystectomy by expert surgeons. Surg Endosc 2005;19(6):832-35.
- Brennan TA, Leape LL, Laird NM, Hebert L, Localio AR, Lawthers AG, Newhouse JP, Weiler PC, Hiatt HH: Incidence of adverse events and negligence in hospitalized patients: results of

- the Harvard Medical Practice Study I. *N Engl J Med* 1991;324:370-76.
8. Tang B, Hanna GB, Joice P, Cuschieri A. Identification and categorization of technical errors by Observational Clinical Human Reliability Assessment (OCHRA) during laparoscopic cholecystectomy. *Arch Surg* 2004;139(11):1215-20.
 9. Seymour NE, Gallagher AG, Roman SA, O'Brien MK, Andersen DK, Satava RM. Analysis of errors in laparoscopic surgical procedures. *Surg Endosc* 2004;18(4):592-95.
 10. Schonman R, De Cicco C, Corona R, Soriano D, Koninckx PR. Accident analysis: Factors contributing to a ureteric injury during deep endometriosis surgery. *BJOG* 2008;115(13):1611-15.
 11. Bann S, Khan M, Datta V, Darzi A. Surgical skill is predicted by the ability to detect errors. *Am J Surg* 2005;189(4):412-15.
 12. Bann S, Datta V, Khan M, Darzi A. The surgical error examination is a novel method for objective technical knowledge assessment. *Am J Surg* 2003;185(6):507-11.