

**P-04**

**AN EVALUATION OF THE ENDOSCOPIC SURGICAL SKILLS ASSESSMENT WITH VIDEO ANALYSIS SOFTWARE**

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Abstract

*Backgrounds:* Recently, endoscopic surgical skills of surgeons have been focused by many people and society. Hence, the importance of the training and education for safe endoscopic surgery is gradually increasing. We developed our own motion analysis system called as the HUESAD and already demonstrated its construct validity. In this study we verified another motion analysis system (dartfish software) could assess the surgeons' endoscopic surgical skills.

*Methods:* Experts (who had experience in performing more than 100 laparoscopic surgeries), surgeons (who had experience in performing more than 100 general surgeries) and the novices (who had no experience in performing laparoscopic surgery) were recruited for this study. The task was suturing in dry box trainer. The time and the locus tracing of the both sides' needle holders were analyzed by the video analysis software. The study used Linear discriminant analysis, a classification method to automatically determine the threshold level for classifying experts, surgeons or novice according to the time and the locus tracing of the both sides' needle holders. Performance of the classification methods was examined using a cross-validation.

*Results:* The results indicate that there is a statistically significant difference among the three groups on the two variables (time:  $p < 0.05$ , the locus tracing of the both sides' needle holders:  $p < 0.05$ ). Moreover, our classification

methods can correctly classify 80% of experts in the three groups.

*Conclusions:* The results of this study demonstrated that motion analysis by the dartfish software were well correlated with operator's skill.