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The broad-view camera system improves the difficult situation due to the mirror image of laparoscopic surgery in vivo model.

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Laparoscopic surgery under mirror-image conditions is very difficult situation. To overcome this situation, we developed the broad-view camera system which is capable of providing a wider view of the internal organ during laparoscopic surgery. We have already reported that the broad-view camera system improved the performance of laparoscopic surgical skills in ex vivo model by objective analysis with HUESAD. The aim of this study is to verify whether the broad-view camera system improves laparoscopic performance in vivo.

All participants (n=8) performed suturing for 3-times under each conditions for scope position 0°, 180°(mirror image), and 180°using the broad-view camera system (mirror image + the broad view camera system). Execution time was used as a parameter for assessment of this task.

Execution times for this task in 180°(mirror image) are more than 600 seconds and significantly longer than that of other two conditions. Moreover, there are no significant differences in execution times for this task between in position 0°and in 180° using the broad-view camera system.

In conclusion, the broad-view camera system has the possibility to improve laparoscopic performance in the mirror image situation during the operation.