A RANDOMIZED CONTROLLED TRIAL ON THE IMPACT OF REMOTE AND ASYNCHRONOUS FEEDBACK ON SURGICAL PERFORMANCE: RESULTS FROM AN INTERIM ANALYSIS

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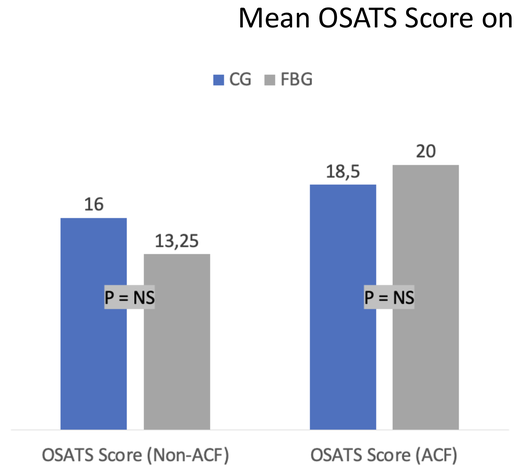
Background

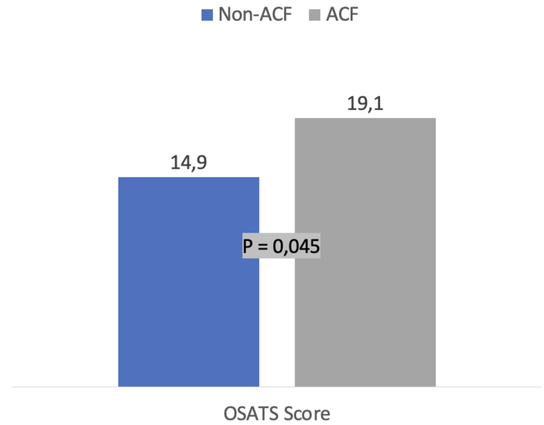
The SAGES Safe Cholecystectomy Program highlights the importance of standardized techniques and continuous education to reduce bile duct injuries during laparoscopic cholecystectomy (LC). While operating room training is vital for developing surgical competency, opportunities for in-depth feedback are often limited. Remote, asynchronous video-based feedback has proven effective in simulation settings and holds potential for real-case surgical education. This study (ANID FONDECYT national grant #1221490) evaluates the impact of such feedback on residents' LC performance, aiming to enhance surgical performance and safety aligned with the Safe Cholecystectomy initiative.

Methods

A multicenter, open-label, randomized controlled trial was conducted. Surgical residents were randomized into an intervention group (FBG) receiving detailed feedback via a web-based platform and a control group (CG) receiving no additional feedback. Residents uploaded videos of their LCs, which were assessed by calibrated surgeons using the Objective Structured Assessment of Technical Skills (OSATS) and a cholecystectomy-specific Operative Performance Rating Scale (OPRS). The primary outcome was to compare the learning curves of both groups using OSATS scores, stratified by simulation training levels. The 10th +/-1 LC was used as a proxy for learning progress in this interim analysis. Secondary outcome: the impact of an advanced laparoscopic simulation course, comparing residents with the course finished (ACF) vs. non-ACF participants.

Results





ACF: Simulation-based advanced laparoscopy course finished
CG: Control Group
FBG: Group with video-based remote and deferred feedback

27 residents have uploaded 225 LC videos: 13 participants from the CG (129 LCs) and 14 from the FBG (96 LCs). No significant difference in performance was found between the FBG and CG on their 10th ±1 LC, with mean OSATS scores of 16,6 and 17,3, respectively (p = 0,79). Non-ACF residents from both FBG and CG performed similarly (mean OSATS 13,25 vs. 16,0; p = 0,49). Comparable results were observed among ACF residents (mean OSATS 20,0 vs. 18,5 for FBG and CG, respectively; p = 0,17).

Notably, **ACF residents performed better in real cases, with a mean OSATS score of 19,1 vs. 14,9 for non-ACF residents (p = 0,045) on their 10th ±1 LC, indicating a significant impact of the advanced laparoscopic course.**

Conclusion

Preliminary results from the early learning curve show that remote, asynchronous feedback did not significantly impact overall performance, however exhibited a non-significant trend benefiting previously trained residents. Remarkably, these residents performed significantly better in real cases. Further follow-up will clarify the effect of this feedback on the ongoing learning curve and on Safe-Cholecystectomy practices.

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