

Comparison of 2D versus 3D in the Basic Single Incision Laparoscopy Training.

A Randomized Controlled Trial

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Abstract

Background: Single incision laparoscopic surgery is a technically challenging procedure. The use of 3D laparoscopy can potentially improve training results. The aim of the present study was to compare the short-term effects of the 2D vs 3D single incision laparoscopy training.

Methods: Forty novices (25 males and 15 females) with no prior experience in single incision laparoscopic surgery participated in the study. The participants were randomized into 2D or 3D training mode.

Results: Twenty participants were assigned to 2D and twenty to 3D training group. Time to finish the first task with the polypropylene ball transfer was significantly shorter in the 3D group with no difference in the total number of errors during the task ($p=0.007$). Overall number of attempts and number of successful attempts were similar between the groups while the number of errors was significantly higher in the 2D group during the needle grasping task ($p=0.033$). In the intracorporeal knot tying test the probability of completing the task was significantly higher in the 3D group ($p=0.02$).

Conclusion: 3D training in basic single incision laparoscopy techniques seems to offer advantage over standard 2D training mode.

Key words: 3D laparoscopy, single incision laparoscopic surgery, SIES, surgical training, minimally invasive surgery