A systematic review and meta-analysis of single port laparoscopic myomectomy compared with conventional laparoscopic myomectomy

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INTRODUCTION

We are to access the feasibility, safety and potential benefits of single port laparoscopic myomectomy (SPLM) compared to conventional laparoscopic myomectomy (CLM).

MATERIALS & METHODS

We searched different databases including MEDLINE, Embase, Cochrane, Pubmed, and Google scholar up to January 2018. Randomized controlled trials (RCT) and cohort studies comparing SPLM to CLM were included. The meta-analysis was performed according to the MOOSE guideline. The quality of evidence was rated following the GRADE system.

CONCLUSION

SPLM is comparable to CLM in aspect of safety and feasibility. In addition, SPLM was found to be more advantageous in terms of immediate postoperative pain. Whether SPLM is more beneficial in terms of cosmetic outcome and patient satisfaction requires additional well-designed prospective studies for the future.

RESULTS

Two RCTs and 6 cohort studies met the inclusion criteria. By combining all the studies included in the analysis, 408 patients were assigned to the SPLM group and 499 patients were assigned to the CLM group. Various methods were used to repair myometrium. Intra-corporeal and extra-corporeal suture were used in the interrupted suture method, and clip or barbed suture material were utilized in the continuous suture. To evacuate the resected myomas from the abdominal cavity, pouch and scalpel was used in 6 studies, and electrical morcellator was used in 2 studies.

Minor complication rate including wound infection, transfusion, ileus, and so on was not different between both groups [OR 1.33 (0.67, 2.63), I2 = 0%]. Major complications requiring re-operation (massive bleeding or trocar site herniation) were 1 case in the SPLM group and 2 cases in the CLM group, and there was no statistical difference. Conversion to laparotomy did not occur in either groups, and the conversion rate from SPLM to multi-port operation was 2.1% (6/288).

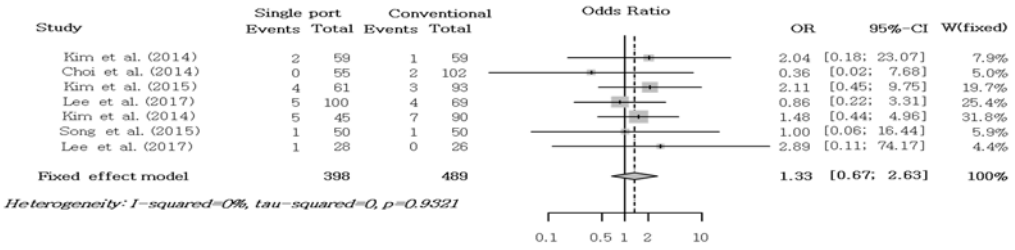

Figure 1. . Forest plot of minor complication

The VAS (visual analogue scale) score after one hour postoperatively was significantly lower in the SPLM group [MD -0.41 point (-0.63, -0.18), I2 = 3.7%]. However, these differences were not observed after 6 and 24 hours postoperatively. When analyzing the surgical outcomes, there was no difference in operation time [MD -0.1 min (-0.56, 0.37), I2 = 90.7%], estimated blood loss [MD -0.1 mL (-0.36, 0.15), I2 = 55.1%], and hemoglobin decrease [MD 0.12 g/dL (-0.15, 0.38), I2 = 67%] between the two groups. In addition, there was no difference in hospital stay after operation between the two groups [MD -0.3 day (-0.7, 0.1), I2 = 87.7%].

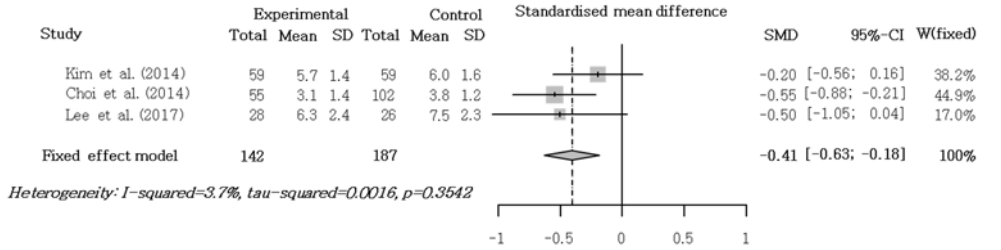

Figure 2. Forest plot of of VAS score 1 hour after operation

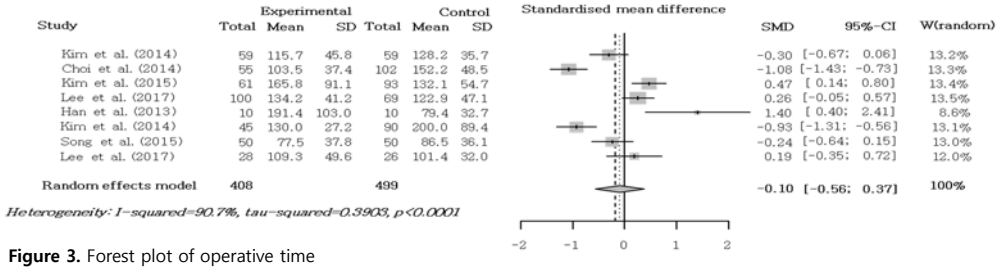

Figure 3. Forest plot of operative time

Two studies compared the obstetrical outcome and there was no statistical difference between the groups, but the number of subjects was too small for the meta-analysis. Only one study (RCT) analyzed the cosmetic outcome and patient satisfaction, and the SPLM group was analyzed as better than CLM group, but this also has a disadvantage that the number of subjects is small.

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