Minimally invasive surgery has gained wide acceptance for minor liver resections. However, major resections (>3 segments) are still considered technically challenging and data from randomised control trials is awaited.

The aim of this study to compare safety and feasibility of the traditional open approach versus a laparoscopic approach for major liver resections in the setting of colorectal liver metastasis.

From 2000 to 2018, 123 major liver resections were performed for colorectal liver metastasis by a single surgeon.

Propensity score matching was performed between open and laparoscopic approach; based on age, gender, ASA score, preoperative chemotherapy, number and maximum dimension of the metastasis.

51 patients were included in each group.

Median intra-operative blood loss was similar (laparoscopic group 606 ml versus open group 680 ml).

Positive resection margin occurred in 4/51 in the laparoscopic group versus 2/51 in the open group.

Conversion rate of 10% to open approach.

There was no difference in the postoperative complication rate between the laparoscopic (22%) and open group (21%).

The median length of stay in the open group was 9 days compared to 7 days in the laparoscopic group (p< 0.01).

Our study showed comparative perioperative outcomes between both groups, providing evidence regarding safety and efficacy of laparoscopic major hepatic resections for colorectal liver metastasis.