Difficulty scoring system of pure laparoscopic donor right hemihepatectomy

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Background: The degree of difficulty in laparoscopic liver resection depends on the location of the tumor and the extent of liver resection. However, according to the current difficulty evaluation system, laparoscopic donor hepatectomy is hard to evaluate the real difficulty level. Because the donor was usually undergone right hemihepatectomy, and there was no underlying liver disease such as cirrhosis. However, this does not mean that all liver donor hepatectomy has the same difficulty. Also, we have not known which factors are affecting surgical difficulty. Therefore, a new system is needed to evaluate the difficulty of laparoscopic donor hepatectomy. In this study, we described the new scoring system and its corresponding factors that determine the difficulty of laparoscopic donor hepatectomy.

Methods: From January 2019 to December 2019, 93 donors who underwent pure laparoscopic right hemihepatectomy in Seoul National University Hospital were enrolled. Surgical difficulty score and related factors were evaluated by a surgeon, assistant, scopist, and scrub nurse after surgery immediately. We analyzed which factors are related to surgical difficulty and the relationship between surgical difficulty, surgical outcome, operative time, and complication.

Results: Difficulty scores were divided into 5 points, 1- and 2-point groups were classified into easy case groups, and the 3, 4, and 5-point groups were classified into difficulty groups. Variation of bile ducts or hepatic vein, small abdominal cavity, and huge liver were related to surgical difficulty in multivariate analysis. Operative time and blood loss were correlated positively with our difficulty score system. However, the complication was not related significantly to surgical difficulty.

Conclusions: New surgical difficulty evaluating the system in pure laparoscopic donor right hemihepatectomy is well correlated with operative time and estimated blood loss. But the surgical difficulty was not related to donor complication.

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