Beyond Excellence Toward the Best! APRIL 5-6, 2019 Seoul, Korea

BP OP 2-5

The single surgeon learning curve of pure laparoscopic pancreatoduodenectomy: A risk-adjusted CUSUM analysis

Sungho KIM¹, Yoo-Seok YOON^{* 2}, Ho-Seong HAN², Jai Young CHO², YoungRok CHOI², Kil Hwan KIM², Sunjong HAN²

¹Surgery, Korea University Ansan Hospital, Korea ²Surgery, Seoul National University Bundang Hospital, Korea

Introduction : Although laparoscopic pancreaticoduodenectomy (LPD) is a technically demanding operation to require a relatively long training for proficiency, there have been a few reports on learning curve of LPD. The present study aimed to evaluate the learning curve for LPD by a single surgeon.

Methods : From July 2007 to August 2018, 117 patients underwent LPD by a single surgeon at Seoul National University Bundang Hospital. The learning curve was analyzed using cumulative sum control chart (CUSUM) and risk-adjusted CUSUM (RA-CUSUM). Surgical failure was defined as conversion to open surgery and occurrence of major complication requiring reoperation or radiologic intervention.

Results : The RA-CUSUM reached two peak point at the 60th and 84th cases. According to results of the RA-CUSUM analysis, the consecutive 117 patients were divided into three group (phase 1: the initial 60, phase 2: the middle 20 and phase 3: the final 29 patients). Less blood loss was observed in phase 3 compared to phase 1 and 2 (p=0.045) and the operation time was longer in phase 1 with statistically difference (p=0.021). The median length of postoperative stay decreased significantly between phase 1 and 3 (from 15.4 to 9.3 days, p=0.005). There was no difference in terms of post-pancreatectomy hemorrhage (PPH) and postoperative pancreatic fistula (POPF) among the three groups.

Conclusions : The learning curve for LPD was minimal 60 cases according to RA-CUSUM analysis. Favorable perioperative outcomes were shown as surgical experience was gained. Efforts to decrease the long learning curve for safer dissemination of LPD are needed.

Corresponding Author. : Yoo-Seok YOON (arsyun@gmail.com)