Nomogram For Predicting Postoperative Pancreatic Fistula After Minimally Invasive Pancreaticoduodenectomy

Munseok CHOI[1], Jae Hoon LEE[1], Sung Hoon CHOI[1], Chang Moo KANG*[1]

[1]Department Of Surgery, Yonsei University College Of Medicine, REPUBLIC OF KOREA

Background : Clinically relevant postoperative pancreatic fistulas (CR-POPF) are inherent severe risks of pancreatic resection. Previous researches proposed models that identify risk factors and predict CR-POPF. This study aimed to evaluate individual risks of POPF and propose a nomogram for predicting POPF in minimally invasive pancreaticoduodenectomy.

Methods : From 2012 to 2020, we reviewed medical records of 429 patients undergoing minimally invasive pancreaticoduodenectomy retrospectively. Variables with $p < 0.05$ in the multivariate logistic regression analysis were included in the nomogram

Results : Of 429 patients, 53 (12.4%) experienced CR-POPF. In multivariable analysis, pancreatic texture (p=0.003), open conversion (p=0.011) and intraoperative transfusion (p = 0.013) were identified as independent predictors for CR-POPF. In addition, the nomogram was developed using the following four clinical factors as variables (ASA class ≥3, type of surgical approach, CBD cancer or AoV cancer, and less than 40 cases of MIPD experience). The area under the curve (AUC) estimated from the receiver operating characteristic (ROC) graph was 0.709 in the train set and 0.729 in 1000 bootstrapping.

Conclusions : A CR-POPF nomogram for a minimally invasive pancreaticoduodenectomy was developed. This nomogram can help surgeons anticipate, select, and manage this critical complication.

Corresponding Author : **Chang Moo KANG** (cmkang@yuhs.ac)