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Surgical outcomes of first 50 cases of robotic pancreaticoduodenectomy

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Introduction : Robotics has shown encouraging results for a number of technically demanding abdominal surgeries including pancreaticoduodenectomy, which has originally represented a difficult field to the application of the minimally-invasive technique. We aimed to investigate the perioperative outcomes of robotic pancreaticoduodenectomy (RPD) by assessing a consecutive series of totally robotic procedures.

Methods : All consecutive patients who underwent RPD were included in the present analysis from Dec 2015 to Dec 2018. All procedures were performed by a single surgeon. In order to investigate the role of the learning curve, surgical outcomes were also used to compare the early and late phase of our experience.

Results : A total of 50 patients (28 female and 22 male) underwent surgery. Mean age and BMI were 56.4 years (range 29-75) and 23.3 kg/m2. Mean operative time was 418 min (range 310 - 750). Intra- and post-operative transfusion were developed in 2 and 1 patients, respectively. Median hospital stay was 10 days (7 -35), with overall morbidity and mortality of 36% and 0%, respectively. Of note, the rate of clinically relevant pancreatic fistula was 12%. R0 resections were achieved in 96% of patients. There was no open conversion or postoperative bleeding. The most common diagnosis was ampullary cancer (n=17) followed by bile duct cancer. With the experience, operative time decreased significantly between the first 20 and the late 20 cases (482 vs. 362 min).

Conclusions : RPD is feasible and safe in terms of perioperative outcomes. However, further analyses of long-term oncologic outcomes and cost-effectiveness are required.

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