Editorial

Laparoscopic pancreaticoduodenectomy for periampullary tumors

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We read with great interest the findings from Palanivelu *et al.* comparing laparoscopic versus open pancreaticoduodenectomy (PD) for periampullary tumors. This study addresses a critical gap in the field. Despite widespread adoption of a laparoscopic approach to PD, the majority of studies comparing minimally invasive and open approaches are limited to retrospective analyses and case series. Since laparoscopic surgery reduces recovery time in a variety of operative environments, it would stand to reason that minimally invasive PD could impart similar benefits. However, high quality, randomized prospective data are lacking.

To address this, Palanivelu *et al.* randomized 64 patients to undergo laparoscopic *vs.* open PD in a high-volume, tertiary-care facility in India (1). Laparoscopic PD was associated with reduced blood loss, fewer transfusions and a significantly shorter hospital stay (7 *vs.* 13 days). These findings support the widespread use of laparoscopic PD in resectable periampullary tumors. However, selection criteria for the application of a laparoscopic approach, particularly in pancreatic adenocarcinoma, remain controversial.

The current study emphasizes the relative safety and effectiveness of laparoscopic PD in both ampullary and duodenal adenocarcinoma, cumulatively representing nearly 80% (25/32) of the laparoscopic group. The strict randomization of these patients to laparoscopic *vs.* open PD in surgeons well trained with both approaches is laudable. However, the focus in the field appears to have shifted toward the appropriate selection of patients for laparoscopic PD. In our experience, pancreatic cancer is the most common indication for PD associated with malignant disease (2), indicating two key factors missing from the current study. First, pancreatic adenocarcinoma was only represented in less than 10% (3/32) of patients in the laparoscopic group. Second, patients undergoing neoadjuvant chemotherapy/chemoradiation were excluded, representing a growing proportion of patients requiring PD in the United States.

The authors are clear in their distinction that these data do not apply to patients with borderline resectable tumors. In fact, the only conversion in the laparoscopic group was due to a patient requiring *vs.* resection, which was not anticipated preoperatively. The rates of early postoperative complications are within expected ranges in both groups, further supporting the effectiveness of the minimally invasive approach at reducing wound infections and length of stay (2-4). Thus, for the treatment of benign disease and adenocarcinoma that is not pancreatic in origin, this trial confirms previous data supporting the use of laparoscopic PD, provided the surgeon has accumulated sufficient experience with the operation. However, the debate continues regarding the use of laparoscopic PD in pancreatic adenocarcinoma, particularly in borderline resectable tumors and those individuals undergoing neoadjuvant therapy.

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