

# Letter to the Editor

## Laparoscopic pancreaticoduodenectomy for tumors of the head of the pancreas; 10 cases for a single center experience

*Dear Editor,*

We read with great interest the article by Caruso et al<sup>1</sup> regarding their experience in a series of 10 patients undergoing laparoscopic pancreaticoduodenectomy (LPD) for a tumor in the head of the pancreas.

The authors reported their single-center experience in this field so far, focusing on outcomes compared with open pancreaticoduodenectomy (PD).

There were no intraoperative complications and none of the procedures was converted to open surgery. The results of this series are very encouraging, thus data reported in literature about LPD described a conversion rate from laparoscopic to open of 30%. This was probably due to the high expertise of the surgeon who has more than ten years of experience in laparoscopy and pancreatic surgery, also demonstrated by mean operative time (224 min.). However, the authors highlighted that their results should be read taking into account that an accurate preoperative patient selection was performed. As a matter of fact, 5 patients did not show any comorbidity. Regarding postoperative complications, 2 patients developed a pancreatic fistula (1 grade A and 1 grade B), 1 patient developed abdominal collection, and 1 patient died in the POD 25 for severe acute hemorrhagic gastritis. The overall postoperative complication rate was 40%. The main message from this experience is that their results are comparable with those reported in the literature about the open technique and concluding that LPD is a feasible surgical procedure.

LPD still occupies a small proportion of PD. Gagner et al<sup>2</sup> reported the first LPD in 1994; however, LPD is still not accepted as a standard alternative to open PD. There are several obstacles to the adoption of LPD. However, the most challenging factor is the anastomoses construction, in particular the pancreaticojejunostomy (PJ) anastomosis, because of the small size of the pancreatic duct. However, minimally invasive pancreaticoduodenectomy is feasible, safe, and effective in selected patients in highly experienced medical centers as reported in the current literature<sup>3</sup>.

Some centers proposed the use of a "Hybrid Approach", i.e. laparoscopic plus robotic approach, for PD, in particular to perform end-to-side duct to mucosa PJ after laparoscopic resection. The Society of American Gastrointestinal and Endoscopic Surgeons meeting in 2001 was the platform for the presentation of some of the early experiences regarding the feasibility and safety of performing abdominal procedures using laparoscopic and robotic instrumentation. Since that time, applications of robot-assisted surgical procedures have increased throughout all disciplines<sup>4</sup>. This has opened the door to the use of robotics in more complex operations as PD. Robotic-assisted reconstruction after laparoscopic resection, in particular for PJ, can benefit of the advantages offered by the Robotic Surgical System in articulated instrumentation, three-dimensional magnified view with stable handling and precise suturing because of the enhanced degree of freedom<sup>4</sup>. The advantage of using robotic instrumentation is the possibility of completing a complex and technically challenging laparoscopic case in a minimally invasive fashion.

Currently, the use of robotic systems is gaining popularity as a valuable operative option in the field of pancreatic surgery. In particular, several limitations of the standard laparoscopic approach have been overcome by the robotic platform. The major advantages from the robotic surgery are a magnified intraoperative imaging, an increased range of motion within narrow and deep spaces, and the enhanced surgical dexterity, affording optimal control during surgical dissections and reconstructions<sup>5</sup>. Compared to some initial experiences from the first decade of the years 2000, there is now evidence that a fully robotic approach for PD is safe and effective<sup>6</sup>, and is associated to a lower rate of conversion to the traditional open approach when compared to standard laparoscopy<sup>7</sup>. High volume centers for pancreatic surgery should, therefore, develop strategies to define clearer indications to the robotic approach for pancreatic surgery.

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#### Conflict of Interest

The Authors declare that they have no conflict of interests.

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