



Robotic-assisted spleen-preserving distal pancreatectomy in patients with small neuroendocrine neoplasms: perioperative outcomes and short-term oncological safety

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INTRODUCTION

The preservation of the spleen offers substantial benefits to the immunological status of patients with malignancies and reduces the risk of overwhelming post-splenectomy infection. Achieving complete tumor resection, along with adequate lymphadenectomy, is crucial for patients with pancreatic neuroendocrine neoplasms (pNEN). This study aims to assess the oncological safety of robotic-assisted spleen-preserving distal pancreatectomy (SPDP) in patients with pNEN.

METHODS

Between 2022 and 2025, a cohort of 15 patients with left-sided pancreatic neuroendocrine neoplasms (pNEN) was treated. We conducted an analysis of prospectively collected data from the robotic registry.

RESULTS

Six patients were allocated to the SPDP group, while nine were assigned to the distal pancreatectomy with splenectomy (DPS) group. There was no difference in patients age ($P = 0.44$), body mass index ($P = 0.30$), duration of surgery ($P = 0.73$), blood loss

($P = 0.20$), and length of hospital stay ($P = 0.18$). Tumor size was notably smaller in the SPDP group (12 vs 24.5 mm; $P = 0.03$). There was no difference in the number of retrieved lymph nodes ($P = 0.75$) or the incidence of CR-POPF ($P = 0.80$). R0 was achieved in 93%. All patients are followed up by oncologist with no sign of disease recurrence.

CONCLUSION

Robotic-assisted spleen-preserving distal pancreatectomy is associated with comparable short-term oncological outcomes to traditional splenopancreatectomy in patients with pancreatic neuroendocrine neoplasms measuring less than 20 mm. However, a larger patient cohort is necessary for a comprehensive evaluation of SPDP, particularly in patients with larger pancreatic neuroendocrine neoplasms.