**Purpose:** Despite increasing reports on favorable oncologic outcomes of laparoscopic surgery for left-sided pancreatic cancer compared to open surgery, there have been few reports with a focus on comparative survival outcomes according to the tumor stage. The aim of this study is to compare the oncologic outcomes of laparoscopic and open distal pancreatectomy for left-sided pancreatic cancer based on the AJCC 8th edition.

**Methods:** A total of 146 patients underwent distal pancreatectomy for left-sided pancreatic cancer from January 2003 to December 2016. Among them, 42 patients who underwent combined resection of major vessels or palliative resections were excluded. Therefore, 104 patients were analyzed finally. Clinicopathologic and oncologic variables were compared between laparoscopic group (n=48) and open group (n=56).

**Results:** There were no statistical differences in demographics between the two groups. The laparoscopic group showed less intraoperative blood loss (390.4±317.4 versus 533.1±306.5 ml, p=0.005) and shorter postoperative hospital stay (11.08±5.97 versus 21.32±30.22 days, p<0.001). Operative time, number of retrieved lymph nodes, resection margin status and postoperative complications were not different significantly between the two groups. The AJCC staging was similar between laparoscopic and open groups (p=0.075); stage I (13 (27.1%) versus 21 (37.5%)), stage II (22 (35.8%) versus 30 (53.6%) and stage III (13 (27.1%) versus 5 (8.9%)). There was no significant difference in overall survival (p=0.083) and disease free survival (p=0.393) between the two groups. The overall 3-year survival rates of each stage were similar between two groups: stage I (72.0% vs. 48.4%, p=0.182), stage II (41.6% vs. 26.7%, p=0.123), stage III (57.7% vs. 30.0%, p=0.696).

**Conclusion:** This study showed that laparoscopic surgery for left-sided pancreatic cancer had similar oncologic outcomes compared to open surgery even after adjusting the tumor staging with advantages of less blood loss and shorter hospital stay.