

PANCREATICODUODENECTOMY FOR PEDIATRIC PANCREATIC MALIGNANCY: A SINGLE-CENTER RETROSPECTIVE ANALYSIS

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Aim of the Study: Pancreaticoduodenectomy (PDD) is rarely required to treat malignant tumors in young patients. Although extensively studied in adults, few analyses have examined its use in pediatric/adolescent patients. We reviewed our institutional experience with this procedure, assessing indications, technique, complications, and patient outcomes.

Methods: With IRB approval, we identified all patients age ≤ 18 years who underwent PDD between 1993 and 2015. Data on demographics, diagnosis, management, and outcomes were evaluated.

Main Results: We identified 12 patients (7 female, 5 male) with a median age of 9 years (range: 2-18). Diagnoses included pancreatoblastoma (n=3), solid pseudopapillary tumor (n=3), neuroblastoma (n=2), rhabdomyosarcoma (n=2), and neuroendocrine carcinoma (n=2). Nine patients (75%) underwent chemotherapy or radiotherapy prior to surgery; 7 patients underwent PDD for treatment of recurrent tumor. A pylorus-sparing approach was used in all. Nine patients had a pancreaticojejunostomy (ductal anastomosis in 4, invagination in 5) while 3 underwent a pancreaticogastrostomy. The median operative time was 7 hours with a mean blood loss of 590cc. The mean intensive care stay and overall hospitalization were 5.2 and 10.6 days, respectively. There were no operative deaths. Four patients (34%) had Grade II complications, 1 had a Grade IIIb complication (chest tube), and 1 had a Grade IV (re-exploration) complication. The Grade IV complication was a pancreatic leak in one patient who had a pancreaticogastrostomy. Five patients (42%), all of whom had solid pseudopapillary tumors or rhabdomyosarcoma, are currently alive with a mean survival of 77.4 months. The remaining 7 patients (58%) died from progressive disease after a mean survival of 42.3 months.

Conclusion: Pancreaticoduodenectomy using the duodenal-sparing approach is a feasible management strategy for pediatric pancreatic malignancies and is associated with acceptable morbidity and overall survival. All three types of pancreatic reconstruction were successful. Long-term outcome is most dependent on underlying tumor biology.