

# World Journal of *Clinical Cases*

*World J Clin Cases* 2021 June 26; 9(18): 4460-4880



### OPINION REVIEW

- 4460** Surgery for pancreatic tumors in the midst of COVID-19 pandemic

*Kato H, Asano Y, Arakawa S, Ito M, Kawabe N, Shimura M, Hayashi C, Ochi T, Yasuoka H, Higashiguchi T, Kondo Y, Nagata H, Horiguchi A*

### REVIEW

- 4467** Roles of exosomes in diagnosis and treatment of colorectal cancer

*Umwali Y, Yue CB, Gabriel ANA, Zhang Y, Zhang X*

### MINIREVIEWS

- 4480** Dynamics of host immune responses to SARS-CoV-2

*Taherkhani R, Taherkhani S, Farshadpour F*

- 4491** Current treatment for hepatitis C virus/human immunodeficiency virus coinfection in adults

*Laiwatthanapaisan R, Sirinawastien A*

- 4500** Anti-tumor effect of statin on pancreatic adenocarcinoma: From concept to precision medicine

*Huang CT, Liang YJ*

- 4506** Roles of vitamin A in the regulation of fatty acid synthesis

*Yang FC, Xu F, Wang TN, Chen GX*

### ORIGINAL ARTICLE

#### Basic Study

- 4520** Identification of the circRNA-miRNA-mRNA regulatory network and its prognostic effect in colorectal cancer

*Yin TF, Zhao DY, Zhou YC, Wang QQ, Yao SK*

- 4542** Tetramethylpyrazine inhibits proliferation of colon cancer cells *in vitro*

*Li H, Hou YX, Yang Y, He QQ, Gao TH, Zhao XF, Huo ZB, Chen SB, Liu DX*

#### Case Control Study

- 4553** Significance of highly phosphorylated insulin-like growth factor binding protein-1 and cervical length for prediction of preterm delivery in twin pregnancies

*Lan RH, Song J, Gong HM, Yang Y, Yang H, Zheng LM*

**Retrospective Cohort Study**

- 4559** Expected outcomes and patients' selection before chemoembolization—"Six-and-Twelve or Pre-TACE-Predict" scores may help clinicians: Real-life French cohorts results

*Adhoute X, Larrey E, Anty R, Chevallier P, Penaranda G, Tran A, Bronowicki JP, Raoul JL, Castellani P, Perrier H, Bayle O, Monnet O, Pol B, Bourliere M*

**Retrospective Study**

- 4573** Application of intelligent algorithms in Down syndrome screening during second trimester pregnancy  
*Zhang HG, Jiang YT, Dai SD, Li L, Hu XN, Liu RZ*
- 4585** Evaluation of a five-gene signature associated with stromal infiltration for diffuse large B-cell lymphoma  
*Nan YY, Zhang WJ, Huang DH, Li QY, Shi Y, Yang T, Liang XP, Xiao CY, Guo BL, Xiang Y*
- 4599** Efficacy of combination of localized closure, ethacridine lactate dressing, and phototherapy in treatment of severe extravasation injuries: A case series  
*Lu YX, Wu Y, Liang PF, Wu RC, Tian LY, Mo HY*
- 4607** Observation and measurement of applied anatomical features for thoracic intervertebral foramen puncture on computed tomography images  
*Wang R, Sun WW, Han Y, Fan XX, Pan XQ, Wang SC, Lu LJ*
- 4617** Histological transformation of non-small cell lung cancer: Clinical analysis of nine cases  
*Jin CB, Yang L*
- 4627** Diagnostic value of amygdala volume on structural magnetic resonance imaging in Alzheimer's disease  
*Wang DW, Ding SL, Bian XL, Zhou SY, Yang H, Wang P*
- 4637** Comparison of ocular axis and corneal diameter between entropion and non-entropion eyes in children with congenital glaucoma  
*Wang Y, Hou ZJ, Wang HZ, Hu M, Li YX, Zhang Z*

**Observational Study**

- 4644** Risk factors for postoperative delayed gastric emptying in ovarian cancer treated with cytoreductive surgery and hyperthermic intraperitoneal chemotherapy  
*Cui GX, Wang ZJ, Zhao J, Gong P, Zhao SH, Wang XX, Bai WP, Li Y*
- 4654** Clinical characteristics, gastrointestinal manifestations and outcomes of COVID-19 patients in Iran; does the location matters?  
*Mokarram P, Dalivand MM, Pizuorno A, Aligolighasemabadi F, Sadeghdoust M, Sadeghdoust E, Aduli F, Oskrochi G, Brim H, Ashktorab H*
- 4668** AWGS2019 vs EWGSOP2 for diagnosing sarcopenia to predict long-term prognosis in Chinese patients with gastric cancer after radical gastrectomy  
*Wu WY, Dong JJ, Huang XC, Chen ZJ, Chen XL, Dong QT, Bai YY*

**Prospective Study**

- 4681** Clinical outcomes and 5-year follow-up results of keratosis pilaris treated by a high concentration of glycolic acid

*Tian Y, Li XX, Zhang JJ, Yun Q, Zhang S, Yu JY, Feng XJ, Xia AT, Kang Y, Huang F, Wan F*

**Randomized Controlled Trial**

- 4690** Tenofovir disoproxil fumarate in Chinese chronic hepatitis B patients: Results of a multicenter, double-blind, double-dummy, clinical trial at 96 weeks

*Chen XF, Fan YN, Si CW, Yu YY, Shang J, Yu ZJ, Mao Q, Xie Q, Zhao W, Li J, Gao ZL, Wu SM, Tang H, Cheng J, Chen XY, Zhang WH, Wang H, Xu ZN, Wang L, Dai J, Xu JH*

**SYSTEMATIC REVIEWS**

- 4700** Mesenteric ischemia in COVID-19 patients: A review of current literature

*Kerawala AA, Das B, Solangi A*

- 4709** Role of theories in school-based diabetes care interventions: A critical review

*An RP, Li DY, Xiang XL*

**CASE REPORT**

- 4721** Alport syndrome combined with lupus nephritis in a Chinese family: A case report

*Liu HF, Li Q, Peng YQ*

- 4728** Botulinum toxin injection for Cockayne syndrome with muscle spasticity over bilateral lower limbs: A case report

*Hsu LC, Chiang PY, Lin WP, Guo YH, Hsieh PC, Kuan TS, Lien WC, Lin YC*

- 4734** Meigs' syndrome caused by granulosa cell tumor accompanied with intrathoracic lesions: A case report

*Wu XJ, Xia HB, Jia BL, Yan GW, Luo W, Zhao Y, Luo XB*

- 4741** Primary mesonephric adenocarcinoma of the fallopian tube: A case report

*Xie C, Shen YM, Chen QH, Bian C*

- 4748** Pancreas-preserving duodenectomy for treatment of a duodenal papillary tumor: A case report

*Wu B, Chen SY, Li Y, He Y, Wang XX, Yang XJ*

- 4754** Pheochromocytoma with abdominal aortic aneurysm presenting as recurrent dyspnea, hemoptysis, and hypotension: A case report

*Zhao HY, Zhao YZ, Jia YM, Mei X, Guo SB*

- 4760** Minimally invasive removal of a deep-positioned cannulated screw from the femoral neck: A case report

*Yang ZH, Hou FS, Yin YS, Zhao L, Liang X*

- 4765** Splenic Kaposi's sarcoma in a human immunodeficiency virus-negative patient: A case report

*Zhao CJ, Ma GZ, Wang YJ, Wang JH*

- 4772** Neonatal syringocystadenoma papilliferum: A case report  
*Jiang HJ, Zhang Z, Zhang L, Pu YJ, Zhou N, Shu H*
- 4778** Disappeared intralenticular foreign body: A case report  
*Xue C, Chen Y, Gao YL, Zhang N, Wang Y*
- 4783** Femoral neck stress fractures after trampoline exercise: A case report  
*Nam DC, Hwang SC, Lee EC, Song MG, Yoo JI*
- 4789** Collision carcinoma of the rectum involving neuroendocrine carcinoma and adenocarcinoma: A case report  
*Zhao X, Zhang G, Li CH*
- 4797** Therapeutic effect of autologous concentrated growth factor on lower-extremity chronic refractory wounds: A case report  
*Liu P, Liu Y, Ke CN, Li WS, Liu YM, Xu S*
- 4803** Cutaneous myiasis with eosinophilic pleural effusion: A case report  
*Fan T, Zhang Y, Lv Y, Chang J, Bauer BA, Yang J, Wang CW*
- 4810** Severe hematuria due to vesical varices in a patient with portal hypertension: A case report  
*Wei ZJ, Zhu X, Yu HT, Liang ZJ, Gou X, Chen Y*
- 4817** Rare coexistence of multiple manifestations secondary to thalamic hemorrhage: A case report  
*Yu QW, Ye TF, Qian WJ*
- 4823** Anderson-Fabry disease presenting with atrial fibrillation as earlier sign in a young patient: A case report  
*Kim H, Kang MG, Park HW, Park JR, Hwang JY, Kim K*
- 4829** Long-term response to avelumab and management of oligoprogression in Merkel cell carcinoma: A case report  
*Leão I, Marinho J, Costa T*
- 4837** Central pontine myelinolysis mimicking glioma in diabetes: A case report  
*Shi XY, Cai MT, Shen H, Zhang JX*
- 4844** Microscopic transduodenal excision of an ampullary adenoma: A case report and review of the literature  
*Zheng X, Sun QJ, Zhou B, Jin M, Yan S*
- 4852** Growth hormone cocktail improves hepatopulmonary syndrome secondary to hypopituitarism: A case report  
*Ji W, Nie M, Mao JF, Zhang HB, Wang X, Wu XY*
- 4859** Low symptomatic COVID-19 in an elderly patient with follicular lymphoma treated with rituximab-based immunotherapy: A case report  
*Łęcki S, Wyżgolik K, Nicze M, Georgiew-Nadziakiewicz S, Chudek J, Wdowiak K*

- 4866** Adult rhabdomyosarcoma originating in the temporal muscle, invading the skull and meninges: A case report  
*Wang GH, Shen HP, Chu ZM, Shen J*
- 4873** *Listeria monocytogenes* bacteremia in a centenarian and pathogen traceability: A case report  
*Zhang ZY, Zhang XA, Chen Q, Wang JY, Li Y, Wei ZY, Wang ZC*

**ABOUT COVER**

Editorial Board Member of *World Journal of Clinical Cases*, Shingo Tsujinaka, MD, PhD, Assistant Professor, Senior Lecturer, Surgeon, Department of Surgery, Saitama Medical Center, Jichi Medical University, Saitama 330-8503, Japan. tsujinakas@omiya.jichi.ac.jp

**AIMS AND SCOPE**

The primary aim of *World Journal of Clinical Cases* (WJCC, *World J Clin Cases*) is to provide scholars and readers from various fields of clinical medicine with a platform to publish high-quality clinical research articles and communicate their research findings online.

WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

**INDEXING/ABSTRACTING**

The WJCC is now indexed in Science Citation Index Expanded (also known as SciSearch®), Journal Citation Reports/Science Edition, Scopus, PubMed, and PubMed Central. The 2020 Edition of Journal Citation Reports® cites the 2019 impact factor (IF) for WJCC as 1.013; IF without journal self cites: 0.991; Ranking: 120 among 165 journals in medicine, general and internal; and Quartile category: Q3. The WJCC's CiteScore for 2019 is 0.3 and Scopus CiteScore rank 2019: General Medicine is 394/529.

**RESPONSIBLE EDITORS FOR THIS ISSUE**

Production Editor: Ji-Hong Lin; Production Department Director: Xiang Li; Editorial Office Director: Jin-Lai Wang.

**NAME OF JOURNAL**

*World Journal of Clinical Cases*

**ISSN**

ISSN 2307-8960 (online)

**LAUNCH DATE**

April 16, 2013

**FREQUENCY**

Thrice Monthly

**EDITORS-IN-CHIEF**

Dennis A Bloomfield, Sandro Vento, Bao-Gan Peng

**EDITORIAL BOARD MEMBERS**

<https://www.wjnet.com/2307-8960/editorialboard.htm>

**PUBLICATION DATE**

June 26, 2021

**COPYRIGHT**

© 2021 Baishideng Publishing Group Inc

**INSTRUCTIONS TO AUTHORS**

<https://www.wjnet.com/bpg/gerinfo/204>

**GUIDELINES FOR ETHICS DOCUMENTS**

<https://www.wjnet.com/bpg/GerInfo/287>

**GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH**

<https://www.wjnet.com/bpg/gerinfo/240>

**PUBLICATION ETHICS**

<https://www.wjnet.com/bpg/GerInfo/288>

**PUBLICATION MISCONDUCT**

<https://www.wjnet.com/bpg/gerinfo/208>

**ARTICLE PROCESSING CHARGE**

<https://www.wjnet.com/bpg/gerinfo/242>

**STEPS FOR SUBMITTING MANUSCRIPTS**

<https://www.wjnet.com/bpg/GerInfo/239>

**ONLINE SUBMISSION**

<https://www.f6publishing.com>

## Pancreas-preserving duodenectomy for treatment of a duodenal papillary tumor: A case report

Biao Wu, Shi-Yong Chen, Yuan Li, Yu He, Xin-Xin Wang, Xiao-Jun Yang

**ORCID number:** Biao Wu 0000-0003-4792-1133; Shi-Yong Chen 0000-0003-2678-7019; Yuan Li 0000-0002-4994-9773; Yu He 0000-0002-7127-3773; Xin-Xin Wang 0000-0003-4622-677X; Xiao-Jun Yang 0000-0003-3770-8451.

**Author contributions:** Wu B and Chen SY contributed equally to this work and should be considered as co-first authors; all authors substantially contributed to the conception and design of the study as well as acquisition, analysis, and interpretation of the data; all authors drafted the article, made critical revisions related to the intellectual content of the manuscript, and approved the final version of the article to be published.

**Supported by** The National Natural Science Foundation of China, No. 81660398; and The Hospital Key Program of National Scientific Research Cultivation Plan, No. 19SYPYA-12.

**Informed consent statement:** The patient provided informed consent for the publication of his case.

**Conflict-of-interest statement:** All authors have no conflict of interest to report.

**CARE Checklist (2016) statement:** The authors have read the CARE

**Biao Wu, Shi-Yong Chen, Yuan Li, Yu He, Xin-Xin Wang, Xiao-Jun Yang,** Department of General Surgery, Gansu Provincial Hospital, Lanzhou 730000, Gansu Province, China

**Biao Wu, Shi-Yong Chen, Yuan Li,** School of Clinical Medicine, Ningxia Medical University, Yinchuan 750000, Ningxia Hui Autonomous Region, China

**Corresponding author:** Xiao-Jun Yang, MD, PhD, Chief Doctor, Professor, Surgeon, Department of General Surgery, Gansu Provincial Hospital, No. 204 Donggang West Road, Chengguan District, Lanzhou 730000, Gansu Province, China. [yangxjmd@aliyun.com](mailto:yangxjmd@aliyun.com)

### Abstract

#### BACKGROUND

Duodenal papillary tumor is a rare tumor of the digestive tract, accounting for about 0.2% of gastrointestinal tumors and 7% of periampullary tumors. The clinical manifestations of biliary obstruction are most common. Some benign tumors or small malignant tumors are often not easily found because they have no obvious symptoms in the early stage. Surgical resection is the only treatment for duodenal papillary tumors. At present, the methods of operation for duodenal papillary tumors include pancreatoduodenectomy, duodenectomy, ampullectomy, and endoscopic resection.

#### CASE SUMMARY

A 47-year-old man was admitted to because of a duodenal mass that had been discovered 2 mo previously. Electronic gastroscopy at another hospital revealed a duodenal papillary mass that had been considered to be a high-grade intraepithelial neoplasia. Therefore, we conducted a multidisciplinary group discussion and decided to perform a pancreas-preserving duodenectomy and a R0 resection was successfully performed. After surgery, the patient underwent a follow-up period of 5 yr. No recurrence or metastasis occurred.

#### CONCLUSION

According to our experience with a duodenal papillary tumor, compared with pancreaticoduodenectomy, the use of pancreas-preserving duodenectomy can preserve pancreatic function, maintain gastrointestinal structure and function, reduce tissue damage and complications, and render the postoperative recovery faster. Pancreas-preserving duodenectomy for treatment of a duodenal papillary tumor is feasible under strict control of surgical indications.



checklist (2016), and the manuscript was prepared and revised according to the CARE checklist (2016).

**Open-Access:** This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

**Manuscript source:** Unsolicited manuscript

**Specialty type:** Surgery

**Country/Territory of origin:** China

#### Peer-review report's scientific quality classification

Grade A (Excellent): 0  
Grade B (Very good): 0  
Grade C (Good): C  
Grade D (Fair): 0  
Grade E (Poor): 0

**Received:** November 9, 2020

**Peer-review started:** November 9, 2020

**First decision:** December 3, 2020

**Revised:** December 16, 2020

**Accepted:** April 23, 2021

**Article in press:** April 23, 2021

**Published online:** June 26, 2021

**P-Reviewer:** Rangarajan M

**S-Editor:** Zhang L

**L-Editor:** Wang TQ

**P-Editor:** Wang LL



**Key Words:** Duodenal papillary tumor; Benign tumor; Malignant tumor; Pancreas-preserving duodenectomy; Case report

©The Author(s) 2021. Published by Baishideng Publishing Group Inc. All rights reserved.

**Core Tip:** Duodenal papillary tumor is a rare digestive tract tumor because of its special anatomical location. The clinical manifestations of biliary obstruction are most common. Some benign tumors or small malignant tumors are often not easily found because they have no obvious symptoms in the early stage. Surgical resection is the only treatment for duodenal papillary tumors. With the advancement of surgical technology, reducing trauma and improving the quality of life have attracted more and more attention, and the surgical methods have changed accordingly. This case highlights that, under the condition of strictly controlling the indications of operation, pancreas-preserving duodenectomy for treatment of duodenal papillary tumors is feasible.

**Citation:** Wu B, Chen SY, Li Y, He Y, Wang XX, Yang XJ. Pancreas-preserving duodenectomy for treatment of a duodenal papillary tumor: A case report. *World J Clin Cases* 2021; 9(18): 4748-4753

**URL:** <https://www.wjgnet.com/2307-8960/full/v9/i18/4748.htm>

**DOI:** <https://dx.doi.org/10.12998/wjcc.v9.i18.4748>

## INTRODUCTION

Duodenal papillary tumor is a rare tumor of the digestive tract, and most researchers believe that for benign tumors in that area, the long-term effect of local mass resection is similar to that of pancreaticoduodenectomy. There is still much debate over its indications and effects because of the lack of comparative analysis on long-term effects of local resections and pancreaticoduodenectomies. Therefore, we report a patient with pancreas-preserving duodenectomy and review the relevant literature to improve our understanding of this disease.

## CASE PRESENTATION

### Chief complaints

A duodenal mass that had been discovered 2 mo previously

### History of present illness

A 47-year-old man was admitted to our hospital on November 20, 2015 because of a duodenal mass that had been discovered 2 mo previously. Electronic gastroscopy at another hospital revealed a duodenal papillary mass that had been considered to be a high-grade intraepithelial neoplasia and was left untreated. The patient reported having no significant, recent weight loss. We carried out relevant examinations, confirmed the diagnosis, and took further treatment measures.

### History of past illness

The patient was healthy before.

### Personal and family history

The patient and families were healthy before.

### Physical examination

The patient's vital signs were: Temperature, 36.2 °C; pulse rate, 75 bpm; respiratory rate, 20 breaths/min; and blood pressure, 110/70 mmHg. The physical examination revealed a normal countenance; absence of superficial lymph node enlargement and heart abnormalities; a flat abdomen; liver and spleen not palpated below the costal

margin; hypogastric region tenderness; no shifting dullness absent; bowel sounds of 4 times/min, with no increase or decrease; and gurgles and abdominal vascular murmurs not audible.

### Laboratory examinations

Laboratory test results included: White blood cell count,  $4.5 \times 10^9/L$ ; erythrocyte count,  $4.42 \times 10^{12}/L$ ; hemoglobin, 144 g/L; platelet count,  $130 \times 10^9/L$ ; normal liver and kidney function; prothrombin time, 14 s; fibrinogen, 3.09 g/L; tumor marker CA-125, 7.19 U/mL (normal < 35 U/mL); CA-199, 7.07 U/mL (normal < 37 U/mL); alpha-fetoprotein, 3.17 ng/mL (normal 0.89-8.78 ng/mL); and CEA, 1.67 ng/mL (normal < 5 ng/mL). The rest of the parameters were within the normal range.

### Imaging examinations

Abdominal computed tomography showed a space-occupying lesion at the head of the pancreas and the duodenal bulb (Figure 1A). Due to the aforementioned imaging findings, a preliminary diagnosis of a duodenal papillary space-occupying lesion was made.

### Perioperative management

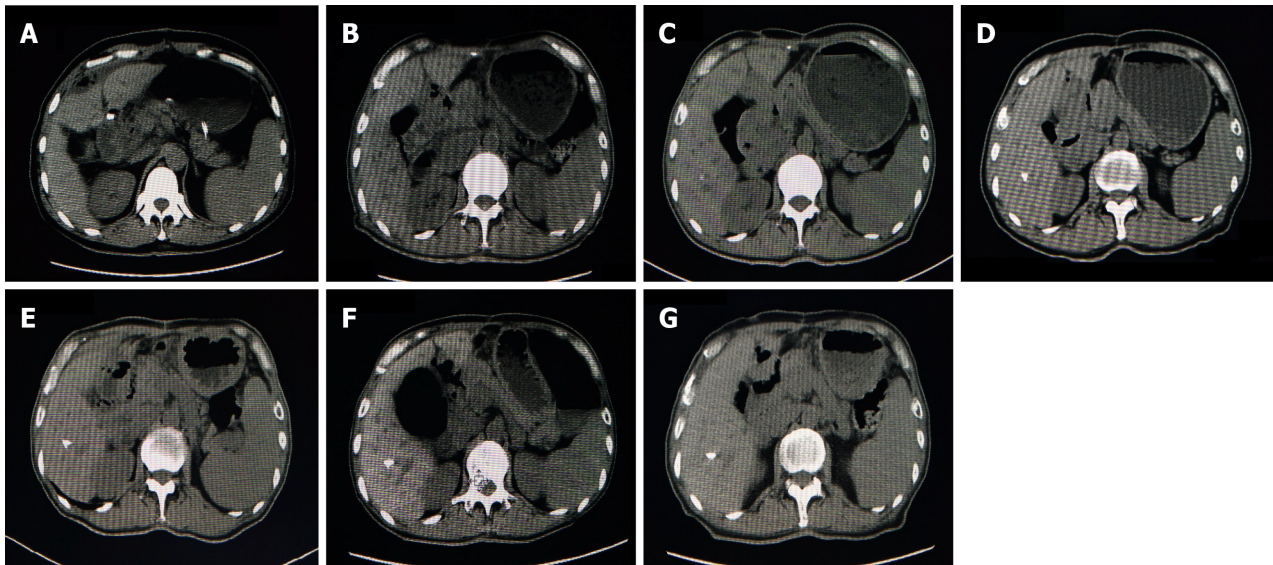
Two days before the operation, the patient was fed a liquid diet. After fasting for 8 h before surgery, an intravenous injection of 2 g cefazoxime sodium was given 30 min before surgery to prevent infection. A patient-controlled analgesia pump was provided postoperatively. The patient was treated by hemostasis, nutrition, and water and electrolyte supplementation. Routine blood and biochemical indexes were monitored.

### Surgery and outcomes

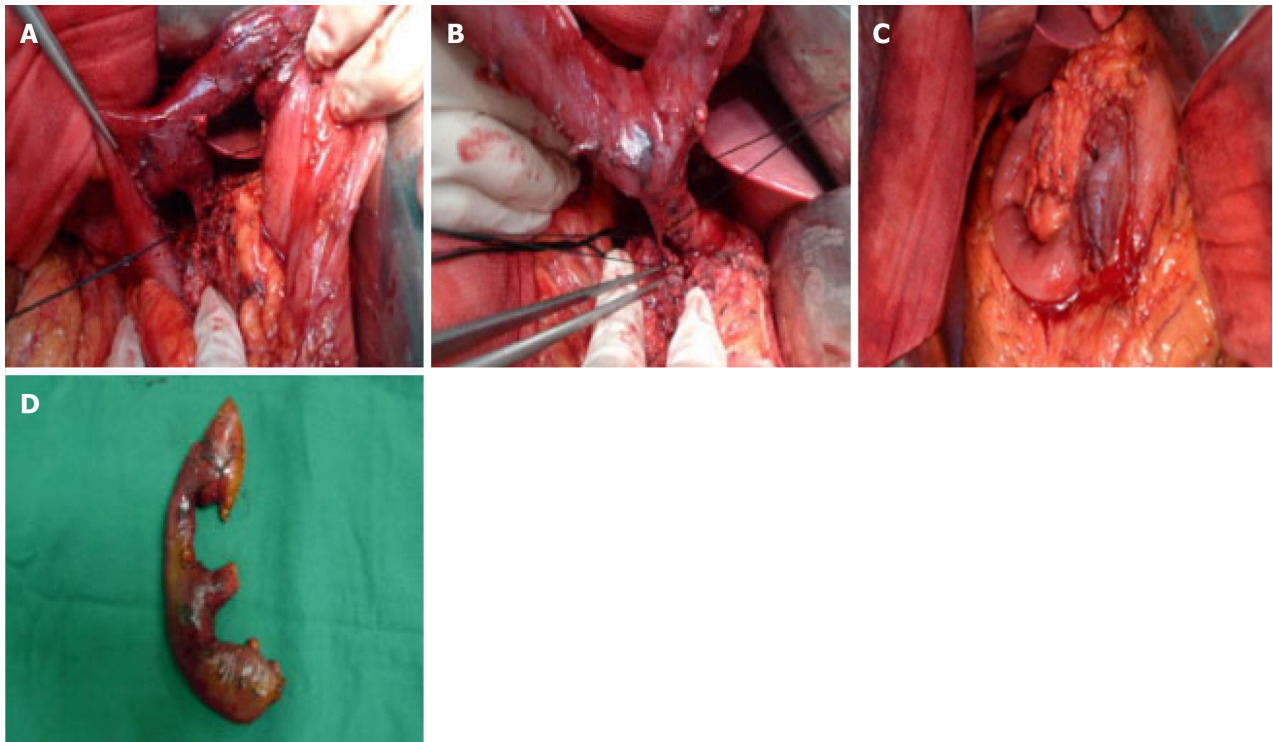
After general anesthesia, the patient was placed in a supine position, and then disinfected and trocar inserted. A laparoscopic exploration was then performed. As the gallbladder wall tension was not increased, the hepatoduodenal lymph nodes were not significantly enlarged, and there were no other significant findings in the peritoneal and pelvic cavities, we decided to perform a pancreas-preserving duodenectomy with a median abdominal incision. The gastocolic ligament was opened to expose the duodenum, which was dissociated along the upper edge of the duodenum until the ligament of Treitz. The branch vessels entering the upper end of the duodenal bulb and the pancreas were ligated using USP 0 sutures. On turning the descending part of duodenum to the right and freeing the common bile duct and pancreatic duct on the inner side of the descending part of the duodenum (Figure 2A and B), a 3 cm × 3 cm solid mass with a hard, firm texture was palpable. The mass was not found to involve the pancreas and hepatoduodenal ligament. The common bile duct was freed along the duodenal papilla upward, until no significant mass invasion could be found. The common bile duct was severed at the pancreas side and the pancreatic duct was freed from the head of the pancreas toward the inner side until no significant mass invasion was found. After the distal part of the stomach, duodenum, and the tissues surrounding the pancreas were freed, the stomach was transected 6 cm from the pylorus using an endoscopic linear cutter and the jejunum was also transected 5 cm under the ligament of Treitz using a 6-0 linear cutter. After removing the specimen, the distal part of the jejunum was lifted from behind the colon to the level of the porta hepatis. An incision with a length equivalent to the opening of the bile duct was made on the contralateral edge of the mesojejunum, 5 cm from the jejunal stump. Bilioenteric anastomosis was performed through full-thickness continuous sutures using 6-0 prolene sutures. The residual pancreatic body and tail were freed and lifted for placement of an infusion tube scalp needle with an opening on the side. The main pancreatic duct and jejunal mucosa were continuously sutured using 5-0 prolene sutures, and the head of the pancreas and the seromuscular layer of the jejunum were sutured in an interrupted manner, using USP 0 sutures. A Frankman 25 stapler was used for Billroth I *in situ* anastomosis between the pyloric part and the jejunum, and the serous layer at the anastomosis site was sutured using USP 0 sutures (Figure 2C). The operation was successful and the tumor was completely removed. The operative time was 295 min, and the intraoperative blood loss was 100 mL. There were no obvious postoperative complications, and the patient was discharged 14 d after the operation.

### Postoperative pathology tests

The macroscopic examination of the surgical specimen showed a cancerous tumor



**Figure 1 Computed tomography.** A: Computed tomography (CT) scan before the surgery; B: CT scan 1 year after the surgery; C: CT scan 5 years after the surgery; D: CT scan 2 years after the surgery; E: CT scan 3 years after the surgery; F: CT scan 4 years after the surgery; and G: CT scan 5 years after the surgery.



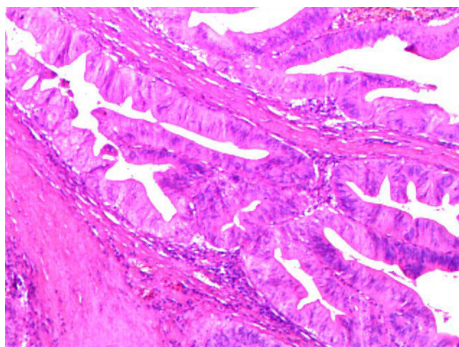
**Figure 2 Intraoperative images.** A and B: Dissociation of the pancreatic duct and bile duct; C: Duodenectomy, lymphadenectomy around the pancreatic head, pancreatic-jejunal anastomosis, cholangio-jejunal anastomosis, gastro-jejunal anastomosis, and reconstruction *in situ* were completed; D: Surgical specimen.

with a white-gray color and a hard texture in the duodenal papilla (Figure 2D). A pathological diagnosis of adenocarcinoma of the duodenal papilla with infiltration in the full thickness of the intestinal wall was made. The stumps of the pancreatic duct and bile duct and the lymph nodes were negative and thus an R0 resection was achieved. No atypical cells were found in the pancreatic tissues surrounding the pancreatic duct and bile duct (Figure 3) (pT<sub>2</sub>N<sub>0</sub>M<sub>0</sub>).

#### Postoperative treatment

A patient-controlled analgesia pump was provided postoperatively. The patient was treated by hemostasis, nutrition, and water and electrolyte supplementation. Routine blood and biochemical indexes were monitored. The patient refused to receive





**Figure 3 Postoperative pathology.** Duodenal papillary adenocarcinoma with full-thickness invasion of the intestinal wall (pT<sub>2</sub>N<sub>0</sub>M<sub>0</sub>; 200 ×).

chemotherapy, and no obvious abnormalities were found in relevant examinations.

---

## FINAL DIAGNOSIS

---

Adenocarcinoma of duodenal papilla.

---

## TREATMENT

---

Pancreas-preserving duodenectomy.

---

## OUTCOME AND FOLLOW-UP

---

The patient underwent a follow-up period of 5 yr, computed tomography examination was performed after 1-5 yr, and no recurrence or metastasis was found (Figure 1B-G).

---

## DISCUSSION

---

Duodenal papillary tumor is a rare benign or malignant disease in the digestive tract [1]. Surgical resection is the only treatment for duodenal papillary tumors. At present, the methods of operation for duodenal papilla tumor include pancreatoduodenectomy, duodenectomy, ampullectomy and endoscopic resection. From the design and implementation of the first case of pancreatoduodenectomy in 1935, Whipple operation has been a classic procedure for the treatment of tumors in the ampulla, head of the pancreas, and duodenal papilla [2]. However, with surgical technique improvements and more research on duodenal papilla tumors, the operative methods are evolving towards the direction of minimally invasive surgery. As the selection of operative methods is directly related to a patient's prognosis and postoperative quality of life, it is critical for doctors to be familiar with the indications for different operative methods. Currently, although the approach of local tumor resection in the treatment of duodenal papillary tumors is attracting increasing attention from experts and scholars in China and other countries, there is still much debate over its indications and effects. Studies have demonstrated that the indications of local tumor resections include: Benign tumors at the duodenal papilla; pathologically confirmed malignant transformation of benign tumors; tumors with a diameter  $\leq 2$  cm, no infiltration, a margin with negative biopsy results, and no lymph node metastasis; well differentiated duodenal papillary cancer with a diameter  $< 1$  cm and no lymph node metastasis (T<sub>1-2</sub>N<sub>0</sub>M<sub>0</sub>); for older patients with multiple complications and higher surgical risks, local tumor resection can be adopted to improve the quality of life [3,4]. Most researchers believe that for benign tumors and early malignant tumors (T<sub>1-2</sub>N<sub>0</sub>M<sub>0</sub>) in that area, the long-term outcomes of local mass resection are similar to those of pancreaticoduodenectomy. Pancreaticoduodenectomies are still the primary treatment method for malignant tumors because of the lack of comparative analysis on long-term outcomes of pancreas-preserving duodenectomy and pancreaticoduodenectomies.

Although the mortality rate after pancreatoduodenectomy is less than 5%, the rate of postoperative complications is still as high as 30%-50%, among which pancreatic fistula is the most common one, with a rate as high as 20%-26% [5]. However, Rattner *et al* [6] suggested that pancreaticoduodenectomy is associated with better long-term outcomes than local tumor resection and that the indications of local tumor resection need to be strictly controlled. According to Asbun *et al* [7], the effect of local tumor resection is better than or the same as that of pancreaticoduodenectomy for stage T1 duodenal papillary cancer. Tarazi *et al* [8] studied the relationship between the operative method for ampullary cancer and a patient's prognosis and reported a 5-year survival rate of 37.8% for pancreaticoduodenectomy and a 5-year survival rate of 40.9% for local tumor resection, with no statistically significant difference between the two rates. A follow-up study conducted at the Department of Hepatobiliary Surgery of The First Affiliated Hospital of Zhengzhou University reported a 5-year survival rate of 73.3% in 15 patients with duodenal malignant tumors who had undergone local resections, which was a satisfactory result [9]. In addition, it has been reported that the effect of radical resection can be achieved when local resection is performed for benign tumors of the duodenal papilla, benign tumors with a pathologically confirmed malignant transformation, and early papillary cancer that is localized in the mucosa without lymph node metastasis [10]. For early malignant tumors, intraoperative frozen examination showed negative resection margins around the tumor and at the base, and pancreas-preserving duodenectomy could be performed as a safe and effective surgical method [11]. Therefore, we report a patient with pancreas-preserving duodenectomy and provide case support for the long-term outcomes of pancreas-preserving duodenectomy to duodenal papillary tumors.

## CONCLUSION

According to our experience with a duodenal papillary tumor, compared with pancreaticoduodenectomy, the use of pancreas-preserving duodenectomy can preserve pancreatic function, maintain gastrointestinal structure and function, reduce tissue damage and complications, and render the postoperative recovery faster. Pancreas-preserving duodenectomy for the treatment of a duodenal papillary tumor is feasible under strict control of surgical indications.

## REFERENCES

- 1 Wang FS, Gao ZJ, Liu YF. Recent advances in diagnosis and treatment of primary duodenal tumors. *Zhonghua Xiaohuaxue Zazhi* 2014; **22**: 5221-5227 [DOI: [10.11569/wcjd.v22.i34.5221](https://doi.org/10.11569/wcjd.v22.i34.5221)]
- 2 Whipple AO, Parsons WB, Mullins CR. Treatment of carcinoma of the ampulla of Vater. *Ann Surg* 1935; **102**: 765 [DOI: [10.1097/0000658-193510000-00023](https://doi.org/10.1097/0000658-193510000-00023)]
- 3 Futakawa N, Kimura W, Wada Y, Muto T. Clinicopathological characteristics and surgical procedures for carcinoma of the papilla of Vater. *Hepatogastroenterology* 1996; **43**: 260-267 [PMID: [8682475](https://pubmed.ncbi.nlm.nih.gov/8682475/)]
- 4 Mansukhani VM, Desai GS, Mouli S, Shirodkar K, Shah RC, Palepu J. Transduodenal ampullectomy for ampullary tumors. *Indian J Gastroenterol* 2017; **36**: 62-65 [PMID: [28054258](https://pubmed.ncbi.nlm.nih.gov/28054258/) DOI: [10.1007/s12664-016-0726-0](https://doi.org/10.1007/s12664-016-0726-0)]
- 5 Kapoor VK. Complications of pancreato-duodenectomy. *Rozhl Chir* 2016; **95**: 53-59 [PMID: [27008166](https://pubmed.ncbi.nlm.nih.gov/27008166/)]
- 6 Rattner DW, Fernandez-del Castillo C, Brugge WR, Warshaw AL. Defining the criteria for local resection of ampullary neoplasms. *Arch Surg* 1996; **131**: 366-371 [PMID: [8615720](https://pubmed.ncbi.nlm.nih.gov/8615720/) DOI: [10.1001/archsurg.1996.01430160024003](https://doi.org/10.1001/archsurg.1996.01430160024003)]
- 7 Asbun HJ, Rossi RL, Munson JL. Local resection for ampullary tumors. Is there a place for it? *Arch Surg* 1993; **128**: 515-520 [PMID: [8098205](https://pubmed.ncbi.nlm.nih.gov/8098205/) DOI: [10.1001/archsurg.1993.01420170045006](https://doi.org/10.1001/archsurg.1993.01420170045006)]
- 8 Tarazi RY, Hermann RE, Vogt DP, Hoerr SO, Esselstyn CB Jr, Cooperman AM, Steiger E, Grundfest S. Results of surgical treatment of periampullary tumors: a thirty-five-year experience. *Surgery* 1986; **100**: 716-723 [PMID: [3764694](https://pubmed.ncbi.nlm.nih.gov/3764694/)]
- 9 Shen XW, Tang Z, Zhao YF. The application of local resection for duodenal papillary tumor. *Henan Yixue Yanjiu* 2013; **22**: 817-819 [DOI: [10.3969/j.issn.1004-437X.2013.06.006](https://doi.org/10.3969/j.issn.1004-437X.2013.06.006)]
- 10 Beger HG, Treitschke F, Gansauge F, Harada N, Hiki N, Mattfeldt T. Tumor of the ampulla of Vater: experience with local or radical resection in 171 consecutively treated patients. *Arch Surg* 1999; **134**: 526-532 [PMID: [10323425](https://pubmed.ncbi.nlm.nih.gov/10323425/) DOI: [10.1001/archsurg.134.5.526](https://doi.org/10.1001/archsurg.134.5.526)]
- 11 Xia H, Lu YB, Zhou J, Zhang ZP, Chen HX, Sun WJ. Clinical analysis of cancer of the duodenal papilla: a report of 80 cases. *Zhonghua Putong Waikao Zazhi* 2018; **27**: 468-473 [DOI: [10.3978/j.issn.1005-6947.2018.04.012](https://doi.org/10.3978/j.issn.1005-6947.2018.04.012)]



Published by **Baishideng Publishing Group Inc**  
7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA

**Telephone:** +1-925-3991568

**E-mail:** [bpgoffice@wjgnet.com](mailto:bpgoffice@wjgnet.com)

**Help Desk:** <https://www.f6publishing.com/helpdesk>

<https://www.wjgnet.com>

