

# World Journal of *Clinical Cases*

*World J Clin Cases* 2023 February 6; 11(4): 719-978



## Contents

Thrice Monthly Volume 11 Number 4 February 6, 2023

## MINIREVIEWS

- 719 Development and refinement of diagnostic and therapeutic strategies for managing patients with cardiogenic stroke: An arduous journey  
*Fan ZX, Liu RX, Liu GZ*
- 725 Portal vein aneurysm-etiology, multimodal imaging and current management  
*Kurtcehajic A, Zerem E, Alibegovic E, Kunosic S, Hujdurovic A, Fejzic JA*

## ORIGINAL ARTICLE

## Clinical and Translational Research

- 738 CD93 serves as a potential biomarker of gastric cancer and correlates with the tumor microenvironment  
*Li Z, Zhang XJ, Sun CY, Fei H, Li ZF, Zhao DB*

## Retrospective Study

- 756 Chest computed tomography findings of the Omicron variants of SARS-CoV-2 with different cycle threshold values  
*Ying WF, Chen Q, Jiang ZK, Hao DG, Zhang Y, Han Q*
- 764 Major depressive disorders in patients with inflammatory bowel disease and rheumatoid arthritis  
*Haider MB, Basida B, Kaur J*
- 780 Selective laser trabeculoplasty as adjunctive treatment for open-angle glaucoma *vs* following incisional glaucoma surgery in Chinese eyes  
*Zhu J, Guo J*
- 788 Efficacy of transvaginal ultrasound-guided local injections of absolute ethanol for ectopic pregnancies with intrauterine implantation sites  
*Kakinuma T, Kakinuma K, Matsuda Y, Yanagida K, Ohwada M, Kaijima H*

## Clinical Trials Study

- 797 Efficacy of incremental loads of cow's milk as a treatment for lactose malabsorption in Japan  
*Hasegawa M, Okada K, Nagata S, Sugihara S*

## Observational Study

- 809 Transdiagnostic considerations of mental health for the post-COVID era: Lessons from the first surge of the pandemic  
*Goldstein Ferber S, Shoval G, Rossi R, Trezza V, Di Lorenzo G, Zalsman G, Weller A, Mann JJ*
- 821 Effect of patient COVID-19 vaccine hesitancy on hospital care team perceptions  
*Caspi I, Freund O, Pines O, Elkana O, Ablin JN, Bornstein G*

**Randomized Clinical Trial**

- 830** Improvement of inflammatory response and gastrointestinal function in perioperative of cholelithiasis by Modified Xiao-Cheng-Qi decoction  
*Sun BF, Zhang F, Chen QP, Wei Q, Zhu WT, Ji HB, Zhang XY*

**CASE REPORT**

- 844** Metagenomic next-generation sequencing for pleural effusions induced by viral pleurisy: A case report  
*Liu XP, Mao CX, Wang GS, Zhang MZ*
- 852** *Clostridium perfringens* gas gangrene caused by closed abdominal injury: A case report and review of the literature  
*Li HY, Wang ZX, Wang JC, Zhang XD*
- 859** Is lymphatic invasion of microrectal neuroendocrine tumors an incidental event?: A case report  
*Ran JX, Xu LB, Chen WW, Yang HY, Weng Y, Peng YM*
- 866** *Pneumocystis jirovecii* diagnosed by next-generation sequencing of bronchoscopic alveolar lavage fluid: A case report and review of literature  
*Cheng QW, Shen HL, Dong ZH, Zhang QQ, Wang YF, Yan J, Wang YS, Zhang NG*
- 874** Identification of 1q21.1 microduplication in a family: A case report  
*Huang TT, Xu HF, Wang SY, Lin WX, Tung YH, Khan KU, Zhang HH, Guo H, Zheng G, Zhang G*
- 883** Double pigtail catheter reduction for seriously displaced intravenous infusion port catheter: A case report  
*Liu Y, Du DM*
- 888** Thyroid storm in a pregnant woman with COVID-19 infection: A case report and review of literatures  
*Kim HE, Yang J, Park JE, Baek JC, Jo HC*
- 896** Computed tomography diagnosed left ovarian venous thrombophlebitis after vaginal delivery: A case report  
*Wang JJ, Hui CC, Ji YD, Xu W*
- 903** Preoperative 3D reconstruction and fluorescent indocyanine green for laparoscopic duodenum preserving pancreatic head resection: A case report  
*Li XL, Gong LS*
- 909** Unusual presentation of systemic lupus erythematosus as hemophagocytic lymphohistiocytosis in a female patient: A case report  
*Peng LY, Liu JB, Zuo HJ, Shen GF*
- 918** Polyarteritis nodosa presenting as leg pain with resolution of positron emission tomography-images: A case report  
*Kang JH, Kim J*
- 922** Easily misdiagnosed complex Klippel-Trenaunay syndrome: A case report  
*Li LL, Xie R, Li FQ, Huang C, Tuo BG, Wu HC*

- 931** Benign lymphoepithelial cyst of parotid gland without human immunodeficiency virus infection: A case report  
*Liao Y, Li YJ, Hu XW, Wen R, Wang P*
- 938** Epithelioid trophoblastic tumor of the lower uterine segment and cervical canal: A case report  
*Yuan LQ, Hao T, Pan GY, Guo H, Li DP, Liu NF*
- 945** Treatment of portosystemic shunt-borne hepatic encephalopathy in a 97-year-old woman using balloon-occluded retrograde transvenous obliteration: A case report  
*Nishi A, Kenzaka T, Sogi M, Nakaminato S, Suzuki T*
- 952** Development of Henoch-Schoenlein purpura in a child with idiopathic hypereosinophilia syndrome with multiple thrombotic onset: A case report  
*Xu YY, Huang XB, Wang YG, Zheng LY, Li M, Dai Y, Zhao S*
- 962** Three cases of jejunal tumors detected by standard upper gastrointestinal endoscopy: A case series  
*Lee J, Kim S, Kim D, Lee S, Ryu K*
- 972** Omental infarction diagnosed by computed tomography, missed with ultrasonography: A case report  
*Hwang JK, Cho YJ, Kang BS, Min KW, Cho YS, Kim YJ, Lee KS*

**ABOUT COVER**

Editorial Board Member of *World Journal of Clinical Cases*, Sahand Samieirad, DDS, MS, MSc, Associate Professor, Oral and Maxillofacial Surgery Department, Mashhad Dental School, Mashhad University of Medical Sciences, Mashhad 9178613111, Iran. samieerads@mums.ac.ir

**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 abstracted and indexed in Science Citation Index Expanded (SCIE, also known as SciSearch®), Journal Citation Reports/Science Edition, Current Contents®/Clinical Medicine, PubMed, PubMed Central, Scopus, Reference Citation Analysis, China National Knowledge Infrastructure, China Science and Technology Journal Database, and Superstar Journals Database. The 2022 Edition of Journal Citation Reports® cites the 2021 impact factor (IF) for WJCC as 1.534; IF without journal self cites: 1.491; 5-year IF: 1.599; Journal Citation Indicator: 0.28; Ranking: 135 among 172 journals in medicine, general and internal; and Quartile category: Q4. The WJCC's CiteScore for 2021 is 1.2 and Scopus CiteScore rank 2021: General Medicine is 443/826.

**RESPONSIBLE EDITORS FOR THIS ISSUE**

Production Editor: Si Zhao; Production Department Director: Xu Guo; Editorial Office Director: Jin-Lei 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**

Bao-Gan Peng, Jerzy Tadeusz Chudek, George Kontogeorgos, Maurizio Serati, Ja Hyeon Ku

**EDITORIAL BOARD MEMBERS**

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

**PUBLICATION DATE**

February 6, 2023

**COPYRIGHT**

© 2023 Baishideng Publishing Group Inc

**INSTRUCTIONS TO AUTHORS**

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

**GUIDELINES FOR ETHICS DOCUMENTS**

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

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

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

**PUBLICATION ETHICS**

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

**PUBLICATION MISCONDUCT**

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

**ARTICLE PROCESSING CHARGE**

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

**STEPS FOR SUBMITTING MANUSCRIPTS**

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

**ONLINE SUBMISSION**

<https://www.f6publishing.com>



# Preoperative 3D reconstruction and fluorescent indocyanine green for laparoscopic duodenum preserving pancreatic head resection: A case report

Xiao-Li Li, Lian-Sheng Gong

**Specialty type:** Medicine, research and experimental

**Provenance and peer review:** Unsolicited article; Externally peer reviewed.

**Peer-review model:** Single blind

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

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

**P-Reviewer:** Casella C, Italy; Cianci P, Italy

**Received:** September 9, 2022

**Peer-review started:** September 9, 2022

**First decision:** October 12, 2022

**Revised:** October 21, 2022

**Accepted:** January 10, 2023

**Article in press:** January 10, 2023

**Published online:** February 6, 2023



**Xiao-Li Li, Lian-Sheng Gong,** Department of General Surgery, Xiangya Hospital, Central South University, Changsha 410008, Hunan Province, China

**Corresponding author:** Lian-Sheng Gong, MD, PhD, Professor, Department of General Surgery, Xiangya Hospital, Central South University, No. 87 Xiangya Road, Kaifu District, Changsha 410008, Hunan Province, China. [13973169263@163.com](mailto:13973169263@163.com)

## Abstract

### BACKGROUND

Duodenum-preserving pancreatic head resection (DPPHR) is the choice of surgery for benign or low-grade malignant tumors of the pancreatic head. Laparoscopic DPPHR (LDPPHR) procedure can be improved by preoperative 3D model reconstruction and the use of intravenous indocyanine green fluorescent before surgery for real-time navigation with fluorescent display to guide the surgical dissection and prevention of from injury to vessels and biliary tract.

### CASE SUMMARY

Here we report the successful short- and long-term outcomes after one year following LDPPHR for a 60-year lady who had an uneventful recovery and was discharged home one week after the surgery.

### CONCLUSION

There was no bile leakage or pancreatic leakage or delayed gastric emptying. The histopathology report showed multiple cysts in the pancreatic head and localized pancreatic intraepithelial tumor lesions. The resected margin was free of tumor.

**Key Words:** Duodenum-preserving pancreatic head resection; Fluorescent navigation; Laparoscopic 3D model reconstruction; Case report

©The Author(s) 2023. Published by Baishideng Publishing Group Inc. All rights reserved.

**Core Tip:** Duodenum-preserving pancreatic head resection (DPPHR) is the choice of surgery for benign or low-grade malignant tumors of the pancreatic head. Laparoscopic DPPHR (LDPPHR) procedure can be improved by preoperative 3D model reconstruction and the use of intravenous indocyanine green fluorescent before surgery for real-time navigation with fluorescent display to guide the surgical dissection and prevention of from injury to vessels and biliary tract. Here we report the successful short- and long-term outcomes after one year following LDPPHR for a 60-year lady who had an uneventful recovery and was discharged home one week after the surgery. There was no bile leakage or pancreatic leakage or delayed gastric emptying. The histopathology report showed multiple cysts in the pancreatic head and localized pancreatic intraepithelial tumor lesions. The resected margin was free of tumor.

**Citation:** Li XL, Gong LS. Preoperative 3D reconstruction and fluorescent indocyanine green for laparoscopic duodenum preserving pancreatic head resection: A case report. *World J Clin Cases* 2023; 11(4): 903-908

**URL:** <https://www.wjgnet.com/2307-8960/full/v11/i4/903.htm>

**DOI:** <https://dx.doi.org/10.12998/wjcc.v11.i4.903>

## INTRODUCTION

Duodenum-preserving pancreatic head resection (DPPHR) is the choice of surgery for benign or low-grade malignant tumors of the pancreatic head. The most common benign and borderline pancreatic neoplastic lesions include Cystic Tumor, Neuroendocrine Tumor, Solid Pseudopapillary Tumor and Intraductal Papillary Mucinous Neoplasm (IPMN). The DPPHR was first reported in 1972 by Beger for the treatment of the inflammatory mass caused by chronic pancreatitis[1]. Compared with traditional pancreatic surgery, this procedure retains the gastroduodenal continuity, reduces the extent of pancreatic resection, retains the pancreatic intestinal axis, and help preserve normal anatomical and physiological structures with good short- and long-term outcome. A variety of modifications in surgical techniques have been proposed, such as Frey's operation, Berne's operation, Takada's operation, *etc*[2-5].

With the development of minimally invasive and precision medicine, laparoscopic DPPHR (LDPPHR) has become a better option, but it is less practiced and rarely reported because of the complexity of the operation. Combined with fluorescence technology and preoperative 3D model reconstruction, the LDPPHR under fluorescence navigation is beneficial. The fluorescence dye, indocyanine green (ICG) used intravenously during surgery is excreted through the bile, showing green fluorescence under near-infrared light excitation[6]. The use of fluorescence navigation technology greatly improves the visualization of biliary anatomy for accurate planning and resection and prevents intraoperative bile duct injury. In extrahepatic biliary fluorescence imaging, Vlek *et al*[7] used the method of injecting ICG through peripheral vein 15~60 min before operation. After ICG was injected into peripheral vein, the liver could fluoresce within 2-5 min, and the biliary tract could fluoresce within 8-10 min. The concentration in bile reached its peak 30 min to 2 h after ICG intravenous injection.

## CASE PRESENTATION

### Chief complaints

A female patient, aged 60 years, was admitted with a pancreatic head mass found during the physical check-up.

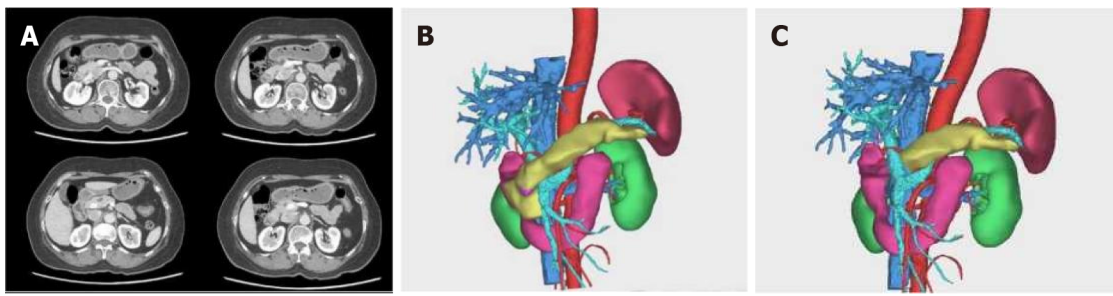
### History of present illness

A female patient, aged 60 years, was admitted with a pancreatic head mass found during the physical check-up. The blood routine, coagulation profile, liver function, renal function, serum electrolyte, the markers of HBV, and tumor antigen screening tests were normal. Endoscopic ultrasonography showed multiple mixed-echo nodules in the head and neck of the pancreas, with irregular shape and clear boundary, and mainly a hypoechoic parenchyma. The computed tomography (CT) scan showed cystic lesions in the head and neck of the pancreas. Some lesions were connected to the main pancreatic duct, suspicious of IPMN. The CT angiography (CTA) and venous-phase imaging (CTV) of peripancreatic vessels were normal (Figure 1A).

### Laboratory examinations

The blood routine, coagulation profile, liver function, renal function, serum electrolyte, the markers of HBV, and tumor antigen screening tests were normal.





DOI: 10.12998/wjcc.v11.i4.903 Copyright ©The Author(s) 2023.

**Figure 1 Preoperative examination and surgical planning.** A: Multiple cystic lesions with septum seen in the head and neck of the pancreas. The computer tomography value is 20 Hu. The lesions are connected to the main pancreatic duct; B: preoperative 3D reconstruction; C: plan of surgical resection with postoperative pancreatic changes are visualized in 3D reconstruction.

### Imaging examinations

Endoscopic ultrasonography showed multiple mixed-echo nodules in the head and neck of the pancreas, with irregular shape and clear boundary, and mainly a hypoechoic parenchyma. The CT scan showed cystic lesions in the head and neck of the pancreas. Some lesions were connected to the main pancreatic duct, suspicious of IPMN. The CTA and CTV of peripancreatic vessels were normal (Figure 1A).

The 3D reconstruction preoperatively (Figure 1B), and plan of surgical resection with postoperative pancreatic changes are visualized (Figure 1C).

## FINAL DIAGNOSIS

Multiple cysts in pancreatic head and localized pancreatic intraepithelial tumor lesions (PanIN-2).

## TREATMENT

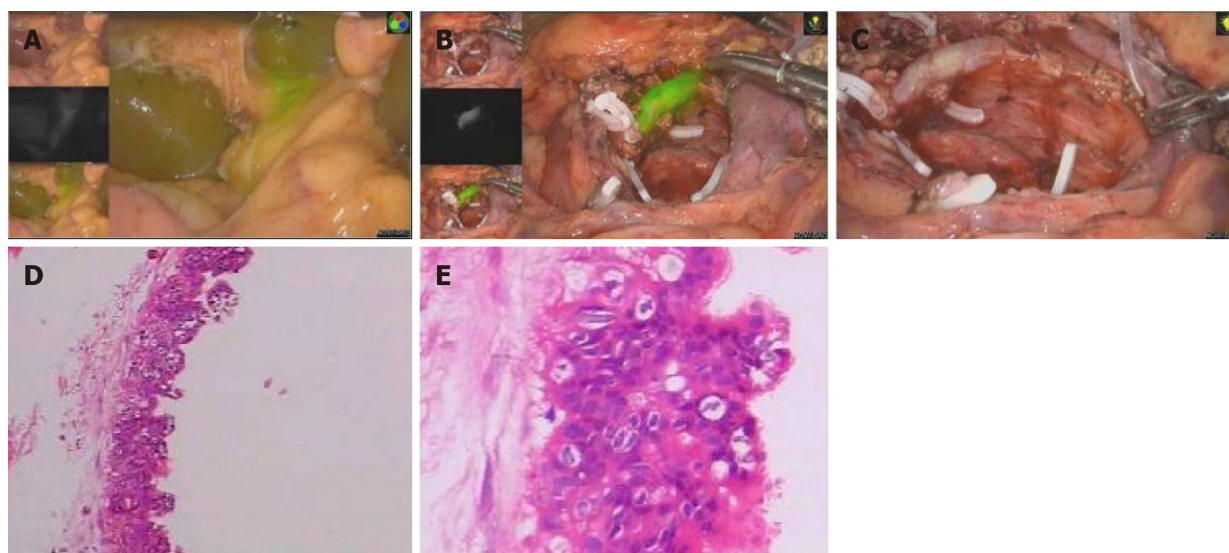
15 min Before operation, one ml (2.5 mg) ICG was injected into the peripheral vein (if the biliary tract development is not satisfactory during operation, the additional dose can be continued). The gastrocolonic ligament was dissected with an ultrasonic knife under laparoscopy, multiple cystic tumors in the pancreatic head were noted. The ultrasonic knife was used for dissection of duodenum and pancreatic head. The superior mesenteric vein was dissected at the lower edge of the pancreas. The tunnel behind the pancreatic neck was established. The pancreatic neck was taped and transected. The bile duct was evaluated in fluorescence laparoscopic mode (Figure 2A). Under fluorescent navigation, dissection of the uncinate process of the pancreas was continued from the lower border and upward under the postpancreatic head capsule. The anterior and posterior inferior pancreaticoduodenal vessels were exposed, and the branches of vessels entering the pancreas were severed keeping the integrity of the posterior fascia of the pancreas. Gastroduodenal artery was dissected. The superior anterior pancreaticoduodenal artery branches entering the pancreatic head were cut, retaining the blood supply of the duodenum. With fluorescent display, the pancreatic tissue was dissected off along the posterior fascial plane of the pancreatic head, protect the common bile duct, duodenum and its blood supply. There was no bile leakage and bleeding detected under fluorescent laparoscopy (Figure 2B and C). For digestive tract reconstruction, the jejunum was severed at 15 cm from the Treitz ligament, the distal jejunum was pulled out from behind the colon, the pancreatic duct was cannulated with a silicone tube, and end-to-side pancreatojejunostomy was performed using continuous 3-0 absorbable suture (Vicryl®). Roux-Y jejuno-jejunostomy was performed about 45 cm away from the pancreatojejunostomy. There was no bleeding, bile leakage and pancreatic leakage. An abdominal drainage tube was placed behind the pancreatojejunostomy (Video).

## OUTCOME AND FOLLOW-UP

### Results

Post-operative recovery was uneventful. On the 4<sup>th</sup> day white blood cell:  $7.7 \times 10^9$ /L. Percentage of neutrophils: 82%, hemoglobin: 114 g/L. Serum albumin: 34 g/L, Serum total bilirubin: 10.3  $\mu$ mol/L, Serum direct bilirubin: 5.2  $\mu$ mol/L, ascites amylase: 149 U/L. Postoperative pathological report showed





DOI: 10.12998/wjcc.v11.i4.903 Copyright ©The Author(s) 2023.

**Figure 2 Intraoperative operation and postoperative pathological examination.** A: Bile duct display after 40 min of fluorescence injection; B: Surgical wound after complete resection of pancreatic head tissue under fluorescence laparoscopy; C: Surgical wound after laparoscopic complete resection of pancreatic head; D: Postoperative pathological 1; E: Postoperative pathological 2.

multiple cysts in pancreatic head and localized pancreatic intraepithelial tumor lesions (PanIN-2). Resected margin was free of tumor (Figure 2D and E).

### Follow-ups

Follow up CT after 5 mo (Figure 3A), 11 mo (Figure 3B) and 17 mo (Figure 3C) were normal. The follow-up hepatorenal function and blood sugar were normal.

## DISCUSSION

In our case the outcome of LDPPHR was satisfactory without biliary or pancreatic leakage, and at one-year follow-up the CT scan, liver function and blood sugar tests were normal. The preoperative 3D reconstruction and intraoperative use of ICG fluorescent was helpful in anatomical dissection, avoiding injury to important vessels and biliary tract.

The traditional pancreaticoduodenectomy (PD) for benign or low-grade malignant tumors of the head of the pancreas, is now performed by laparoscopic PD (LPD) with overall mortality reduced to about 1% in large volume centers. However, postoperative morbidity and complications is still as high as 40%-60%, including malnutrition and pancreatic dysfunction[8]. Patients with benign tumors or low-grade malignant tumors of the pancreatic head will survive for a long time after surgical treatment, If LPD is performed, it may seriously affect the safety and quality of life of the patients after operation. DPPHR with various modifications is a more reasonable procedure for patients with benign and low-grade malignant tumors of the pancreatic head removes the tumor of the pancreatic head, retaining the continuity of gastro-duodenum and biliary tract anatomy and physiological functions. The minimally invasive laparoscopic resection LDPPHR has gained acceptance[9,10].

Intraoperative use of ICG fluorescent has added advantage in dissection and preservation of important vessels, for example, the blood supply of the duodenal papilla and the intrapancreatic part of the bile duct mainly comes from the supply of the posterior pancreaticoduodenal artery arch[11,12], the duodenal papilla is mainly supplied by the papillary artery from the superior posterior pancreaticoduodenal artery, protecting the posterior pancreaticoduodenal artery arch is particularly important for maintaining a good blood supply to the duodenum, the intrapancreatic part of the bile duct and the duodenal papilla. During the LDPPHR procedure in our case, the posterior fascia of the pancreatic head was preserved to avoid damaging the posterior pancreaticoduodenal artery arch, and the anterior pancreaticoduodenal artery arch was preserved as much as possible.

The application of 3D visualization technology combined with 3D printing technology in liver cancer and hilar cholangiocarcinoma has been reported in the literature. The variation of bile duct and blood vessel and the transverse and longitudinal infiltration of tumor can be observed clearly and stereoscopically from multiple dimensions to judge whether the tumor invades blood vessels and the resectability of the tumor. Preoperative 3D model reconstruction can plan different surgical approaches and resection ranges, select the best individualized surgical scheme, and achieve the purpose of accurate



DOI: 10.12998/wjcc.v11.i4.903 Copyright ©The Author(s) 2023.

**Figure 3 Postoperative follow-up.** A: Follow-up computer tomography (CT) after 5 mo; B: Follow-up CT after 11 mo; C: Follow-up CT after 17 mo.

lesion resection [13,14]. In this case, the application of 3D visualization technology to LDPHR has achieved satisfactory results in preoperative diagnosis, surgical planning and intraoperative real-time navigation. By constructing a 3D model before operation, we can more intuitively observe the scope of pancreatic lesions, observe that there is no vascular anatomical variation in this case, and preserve the anterior and posterior pancreaticoduodenal arterial arches to the greatest extent during the operation. In this way, we can "have a clear mind" before operation and "skill and ease" during operation. It laid the foundation for the success of the operation.

ICG, as a water-soluble dye for intravenous injection, can be selectively absorbed by the liver and excreted through the bile. After binding with mucin in the bile, ICG presents green fluorescence under near-infrared light excitation, which provides the possibility for fluorescence visualization of bile duct [15]. In a study by Wikner *et al* [16], it is easier to expose the common bile duct in ICG fluorescence mode than in traditional mode. The exposure of the intrapancreatic part of the bile duct and blood supply protection are a major difficulty in this operation. If the intrapancreatic part of the bile duct was difficult to be exposed due to inflammation or other factors, ICG fluorescence technology could achieve accurate navigation, and greatly reduces the difficulty of common bile duct exposure.

## CONCLUSION

Use of preoperative 3D was helpful in precise planning, and the intraoperative fluorescent navigation aided in the surgical dissection, preserving the important vessels and biliary anatomy during LDPHR. This procedure is worthy of promotion hospitals with such facilities.

## FOOTNOTES

**Author contributions:** Li XL, Gong LS contributed to the study conception and design; Material preparation, data collection and analysis were performed by Li XL, Gong LS; The first draft of the manuscript was written by Gong LS, and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

**Informed consent statement:** Written informed consent was obtained from the patient for the publication of this case report.

**Conflict-of-interest statement:** All the authors report no relevant conflicts of interest for this article.

**CARE Checklist (2016) statement:** The authors have read the CARE 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: <https://creativecommons.org/licenses/by-nc/4.0/>

**Country/Territory of origin:** China

**ORCID number:** Xiao-Li Li 0000-0002-0717-3575; Lian-Sheng Gong 0000-2392-1839-1933.

**S-Editor:** Liu GL

**L-Editor:** A

**P-Editor:** Liu GL

## REFERENCES

- 1 **Beger HG**, Kunz R, Poch B. The Beger procedure--duodenum-preserving pancreatic head resection. *J Gastrointest Surg* 2004; **8**: 1090-1097 [PMID: [15702531](#) DOI: [10.1016/j.gassur.2003.12.001](#)]
- 2 **Frey CF**, Smith GJ. Description and rationale of a new operation for chronic pancreatitis. *Pancreas* 1987; **2**: 701-707 [PMID: [3438308](#) DOI: [10.1097/00006676-198711000-00014](#)]
- 3 **Gloor B**, Friess H, Uhl W, Büchler MW. A modified technique of the Beger and Frey procedure in patients with chronic pancreatitis. *Dig Surg* 2001; **18**: 21-25 [PMID: [11244255](#) DOI: [10.1159/000050092](#)]
- 4 **Takada T**, Yasuda H, Uchiyama K, Hasegawa H. Duodenum-preserving pancreatoduodenostomy. A new technique for complete excision of the head of the pancreas with preservation of biliary and alimentary integrity. *Hepatogastroenterology* 1993; **40**: 356-359 [PMID: [8406305](#)]
- 5 **Lu C**, Jin WW, Mou YP, Zhou YC, Wang YY, Xia T, Zhu QC, Xu BW, Ren YF, Meng SJ, He YH, Jiang QT. [Clinical effect of minimally invasive duodenum preserving pancreatic head resection for benign and pre-malignant lesions of pancreatic head]. *Zhonghua Waike Zazhi* 2022; **60**: 39-45 [PMID: [34954945](#) DOI: [10.3760/cma.j.cn112139-20211104-00516](#)]
- 6 **Hong D**, Cheng J, Wu W, Liu X, Zheng X. How to Perform Total Laparoscopic Duodenum-Preserving Pancreatic Head Resection Safely and Efficiently with Innovative Techniques. *Ann Surg Oncol* 2021; **28**: 3209-3216 [PMID: [33123857](#) DOI: [10.1245/s10434-020-09233-8](#)]
- 7 **Vlek SL**, van Dam DA, Rubinstein SM, de Lange-de Klerk ESM, Schoonmade LJ, Tuynman JB, Meijerink WJH, Ankersmit M. Biliary tract visualization using near-infrared imaging with indocyanine green during laparoscopic cholecystectomy: results of a systematic review. *Surg Endosc* 2017; **31**: 2731-2742 [PMID: [27844236](#) DOI: [10.1007/s00464-016-5318-7](#)]
- 8 **He K**, Hong X, Chi C, Cai C, Wang K, Li P, Liu X, Li J, Shan H, Tian J. A new method of near-infrared fluorescence image-guided hepatectomy for patients with hepatolithiasis: a randomized controlled trial. *Surg Endosc* 2020; **34**: 4975-4982 [PMID: [32020287](#) DOI: [10.1007/s00464-019-07290-z](#)]
- 9 **Stauffer JA**, Coppola A, Villacreses D, Mody K, Johnson E, Li Z, Asbun HJ. Laparoscopic versus open pancreaticoduodenectomy for pancreatic adenocarcinoma: long-term results at a single institution. *Surg Endosc* 2017; **31**: 2233-2241 [PMID: [27604369](#) DOI: [10.1007/s00464-016-5222-1](#)]
- 10 **Beger HG**. Benign Tumors of the Pancreas-Radical Surgery Versus Parenchyma-Sparing Local Resection-the Challenge Facing Surgeons. *J Gastrointest Surg* 2018; **22**: 562-566 [PMID: [29299757](#) DOI: [10.1007/s11605-017-3644-2](#)]
- 11 **Prete FP**, Di Meo G, Liguori P, Gurrado A, De Luca GM, De Leo V, Testini M, Prete F. Modified "Blumgart-Type" Suture for Wirsung-Pancreaticogastrostomy: Technique and Results of a Pilot Study. *Eur Surg Res* 2021; **62**: 105-114 [PMID: [33975310](#) DOI: [10.1159/000515987](#)]
- 12 **Liang B**, Chen Y, Li M, Dong X, Yao S, Liu T. Total laparoscopic central pancreatectomy with Roux-Y pancreaticojejunostomy for solid pseudopapillary neoplasm of pancreas: A case report. *Medicine (Baltimore)* 2019; **98**: e15495 [PMID: [31045833](#) DOI: [10.1097/MD.00000000000015495](#)]
- 13 **Beger HG**, Mayer B, Rau BM. Parenchyma-Sparing, Limited Pancreatic Head Resection for Benign Tumors and Low-Risk Periapillary Cancer--a Systematic Review. *J Gastrointest Surg* 2016; **20**: 206-217 [PMID: [26525207](#) DOI: [10.1007/s11605-015-2981-2](#)]
- 14 **Bai RJ**, Wang JE, Jiang HJ, Hao XJ, Dong XP, Huang YH, Wei L. Investigation on the optical scan condition for imaging of multi-slice spiral CT liver perfusion in rats. *Chin Med J (Engl)* 2013; **126**: 4742-4746 [PMID: [24342322](#)]
- 15 **Dirzu DS**, Dicu C, Dirzu N. Urinary retention: a possible complication of unilateral continuous quadratus lumborum analgesia - a case report. *Rom J Anaesth Intensive Care* 2019; **26**: 75-78 [PMID: [31111099](#) DOI: [10.2478/rjaic-2019-0011](#)]
- 16 **Wikner M**. Unexpected motor weakness following quadratus lumborum block for gynaecological laparoscopy. *Anaesthesia* 2017; **72**: 230-232 [PMID: [27891579](#) DOI: [10.1111/anae.13754](#)]



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>

