· 论著 ·

不同类型胰腺囊性肿瘤的诊断与治疗

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【摘要】 目的　探讨不同类型胰腺囊性肿瘤（PCNs）的诊断与治疗。**方法**　采用回顾性描述性研究方法。收集 2009 年 1 月至 2018 年 12 月中山大学附属第一医院收治的 244 例 PCNs 患者的临床病理资料；男 70 例，女 174 例；中位年龄为 43 岁，年龄范围为 5～79 岁。根据患者术前评估结果和术中探查结果确定手术方式。观察指标：（1）PCNs 分类和临床病理学情况。（2）PCNs 患者术前 CA19-9 水平情况。（3）影像学检查结果。（4）手术情况。（5）术后并发症情况。正态分布的计量资料以 $\bar{x}\pm s$ 表示。计数资料以绝对数或百分比表示，组间比较采用 χ^2 检验。**结果**　（1）PCNs 分类和临床病理学情况：244 例 PCNs 患者中，浆液性囊性瘤（SCN）76 例，黏液性囊性瘤（MCN）56 例，实性假乳头状瘤（SPN）96 例，导管内乳头状黏液性瘤（IPMN）16 例。76 例 SCN 患者中，男 22 例、女 54 例；年龄为（51±14）岁，年龄范围为 22～78 岁；32 例术前有腹痛，44 例术前无腹痛；47 例肿瘤位于胰腺体尾部，29 例肿瘤位于胰腺头颈部。76 例 SCN 患者术后病理学检查结果均为良性。56 例 MCN 患者中，男 16 例、女 40 例；年龄为（49±16）岁，年龄范围为 20～79 岁；34 例术前有腹痛，22 例术前无腹痛；35 例肿瘤位于胰腺体尾部，21 例肿瘤位于胰腺头颈部。56 例 MCN 患者中，11 例术后病理学检查结果为恶性。96 例 SPN 患者中，男 21 例、女 75 例；年龄为（32±14）岁，年龄范围为 5～68 岁；42 例术前有腹痛，54 例术前无腹痛；58 例肿瘤位于胰腺体尾部，38 例肿瘤位于胰腺头颈部。96 例 SPN 患者中，1 例术后病理学检查结果为恶性。16 例 IPMN 患者中，男 11 例、女 5 例；年龄为（56±10）岁，年龄范围为 41～76 岁；11 例术前有腹痛，5 例术前无腹痛；4 例肿瘤位于胰腺体尾部，12 例肿瘤位于胰腺头颈部。16 例 IPMN 患者中，6 例术后病理学检查结果为恶性。（2）PCNs 患者术前 CA19-9 水平情况：76 例 SCN 患者中，9 例术前 CA19-9 水平升高；67 例术前 CA19-9 水平正常。56 例 MCN 患者中，7 例术前 CA19-9 水平升高，49 例术前 CA19-9 水平正常。96 例 SPN 患者中，14 例术前 CA19-9 水平升高，82 例术前 CA19-9 水平正常。16 例 IPMN 患者中，4 例术前 CA19-9 水平升高，12 例术前 CA19-9 水平正常。244 例 PCNs 患者中，226 例为良性 PCNs，18 例为恶性 PCNs。226 例良性 PCNs 患者中，26 例 CA19-9 水平升高；18 例恶性 PCNs 患者中，8 例 CA19-9 水平升高，两者术前 CA19-9 水平升高情况比较，差异有统计学意义（$\chi^2=15.084$，$P<0.05$）。（3）影像学检查结果：244 例患者中，163 例行超声造影检查，其中 SCN 59 例，MCN 37 例，SPN 55 例，IPMN 12 例。163 例行超声造影检查患者中，82 例检查结果与术后病理学检查结果一致，诊断符合率为 50.3%（82/163）。其中，SCN、MCN、SPN、IPMN 的诊断符合率分别为 67.8%（40/59）、54.1%（20/37）、32.7%（18/55）、4/12。244 例患者中，198 例行 CT 检查，其中 SCN 60 例，MCN 44 例，SPN 82 例，IPMN 12 例。198 例行 CT 检查的患者中，135 例检查结果与术后病理学检查结果一致，诊断符合率为 68.2%（135/198），其中 SCN、MCN、SPN、IPMN 的诊断符合率分别为 76.7%（46/60）、79.5%（35/44）、58.5%（48/82）、6/12。（4）手术情况：244 例患者均根据术前评估结果和术中探查结果成功施行手术，术中无死亡病例。76 例 SCN 患者中，20 例行胰十二指肠切除术、20 例行保留脾脏的胰体尾切除术、14 例行胰体尾切除合并脾切除术、9 例行肿瘤局部切除术、7 例行保留十二指肠的胰头切除术、6 例行胰腺中段切除术。56 例 MCN 患者中，20 例行胰体尾切除合并脾切除术、16 例行胰十二指肠切除术、9 例行保留脾脏的胰体尾切除术、8 例行胰腺中段切除术、3 例行肿瘤局部切除术。96 例 SPN 患者中，34 例行胰体尾切除合并脾切除术、23 例行胰十二指肠切除术、15 例行保留脾脏的胰体尾切除术、12 例行肿瘤局部切除术、8 例行胰腺中段切除术、3 例行保留十二指肠的胰头切除术、1 例行全胰腺切除术。16 例 IPMN 患者中，9 例行胰十二指肠切除术、3 例行胰体尾切除合并脾切除术、3 例行全胰腺切除术、1 例行保留脾脏的胰体尾切除术。（5）术后并发症情况：76 例 SCN 患者中，17 例发生胰瘘（生化瘘 12 例、B 级胰瘘 5 例），7 例腹腔感染，1 例胰十二指肠切除术后患者发生胃排空延迟，1 例腹腔出血，1 例乳糜瘘，1 例胰腺中段切除术患者术后发生胰肠吻合口瘘。56 例 MCN 患者中，7 例发生胰瘘（生化瘘 2 例、B 级胰瘘 5 例），3 例腹腔感染，2 例胆

瘘,1 例胰十二指肠切除术后患者发生胃排空延迟,1 例消化道出血,1 例术后门静脉血栓形成。96 例 SPN 患者中,14 例发生胰瘘(生化瘘 5 例、B 级胰瘘 8 例、C 级胰瘘 1 例),6 例腹腔感染,4 例胰十二指肠切除术后患者发生胃排空延迟,2 例腹腔出血或消化道出血,1 例胆瘘,1 例术后门静脉血栓形成。16 例 IPMN 患者中,3 例发生胰瘘(生化瘘、B 级胰瘘、C 级胰瘘各 1 例),2 例腹腔出血或消化道出血,1 例腹腔感染,1 例胆瘘,1 例围术期死于肺栓塞。所有并发症根据病情的严重程度,选择保守治疗、经皮穿刺置管引流、介入治疗或二次手术,均好转出院。**结论**　PCNs 主要包括 SCN、MCN、SPN、IPMN。各型 PCNs 缺乏典型的临床症状,实验室检查也缺乏特异性。术前 CA19-9 水平可对 PCNs 术前良恶性判断提供一定参考。影像学检查是 PCNs 主要的诊断依据。PCNs 应严格把握手术指征,有手术指征时应积极手术治疗。

【关键词】 胰腺肿瘤;　实性假乳头状肿瘤;　浆液性囊性肿瘤;　黏液性囊性肿瘤;　导管内乳头状黏液性肿瘤;　诊断;　治疗

基金项目:广东省基础与应用基础研究基金(2019A1515010096、2019A1515010686)

DOI:10.3760/cma.j.cn115610-20201109-00704

Diagnosis and treatment of various types of pancreatic cystic neoplasms

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【Abstract】 **Objective**　To investigate the diagnosis and treatment of various types of pancreatic cystic neoplasms (PCNs). **Methods**　The retrospective and descriptive study was conducted. The clinicopathological data of 244 PCNs patients who underwent surgical resection in the First Affiliated Hospital of Sun Yat-Sen University from January 2009 to December 2018 were collected. There were 70 males and 174 females, aged from 5 to 79 years, with a median age of 43 years. Patients received corresponding surgical methods according to the preoperative evaluation and intraoperative exploration. Observation indicators: (1) classification and clinicopathological features of PCNs; (2) preoperative CA19-9 levels of PCNs patients; (3) results of imaging examinations; (4) surgical situations; (5) postoperative complications. Measurement data with normal distribution were represented as *Mean*±*SD*. Count data were represented as absolute numbers or percentages, and comparison between groups was conducted using the chi-square test. **Results**　(1) Classification and clinicopathological features of PCNs: in 244 PCNs patients, there were 76 cases of serous cystic neoplasm (SCN), 56 cases of mucinous cystic neoplasm (MCN), 96 cases of solid pseudopapillary neoplasm (SPN), and 16 cases of intraductal papillary mucinous neoplasm (IPMN). Among the 76 SCN patients, there were 22 males and 54 females, aged (51±14) years, with a range from 22 to 78 years. Of 76 SCN patients, there were 32 cases with abdominal pain while 44 without abdominal pain before surgery, and there were 47 cases with tumor located in the body and tail of the pancreas while 29 cases with tumor located in the head and neck of the pancreas. The postoperative pathological examination of all 76 SCN patients were benign. Among the 56 MCN patients, there were 16 males and 40 females, aged (49±16) years, with a range from 20 to 79 years. Of 56 MCN patients, there were 34 cases with abdominal pain while 22 without abdominal pain before surgery, and there were 35 cases with tumor located in the body and tail of the pancreas while 21 cases with tumor located in the head and neck of the pancreas. Eleven of the 56 MCN patients were pathologically confirmed as malignant tumors after operation. Among the 96 SPN patients, there were 21 males and 75 females, aged (32±14) years, with a range from 5 to 68 years. Of 96 SPN patients, there were 42 cases with abdominal pain while 54 without abdominal pain before surgery, and there were 58 cases with tumor located in the body and tail of the pancreas while 38 cases with tumor located in the head and neck of the pancreas. One of the 96 SPN patients were pathologically confirmed as malignant tumors after operation. Among the 16 IPMN patients, there were 11 males and 5 females, aged (56±10) years, with a range from 41 to 76 years. Of 16 IPMN patients, there were 11 cases with abdominal pain while 5 without abdominal pain before surgery, and there were 4 cases with tumor located in the body and tail of the pancreas while 12 cases with tumor located in the head and neck of the pancreas. Six of the 16 IPMN patients were pathologically confirmed as malignant tumors after operation. (2) Preoperative CA19-9 levels of PCNs patients: of 76 SCN patients, there were 9 cases with elevated preoperative CA19-9 levels while 67 cases with normal preoperative CA19-9 levels. Of 56 MCN patients, there were 7 cases with elevated preoperative CA19-9 levels while 49 cases with normal preoperative CA19-9 levels. Of 96 SPN patients, there were 14 cases with elevated preoperative CA19-9 levels while 82 cases with normal preoperative CA19-9 levels. Of 16 IPMN patients, there were 4 cases with elevated

preoperative CA19-9 levels while 12 cases with normal preoperative CA19-9 levels. Of 244 PCNs patients, there were 226 cases with benign PCNs and 18 cases with malignant PCNs. The cases with elevated preoperative CA19-9 levels in 226 benign PCNs patients and 18 malignant PCNs patients were 26 and 8, respectively, showing a significant difference ($\chi^2 = 15.084$, $P < 0.05$). (3) Results of imaging examinations: of 244 PCNs patients, 163 cases underwent contrast-enhanced ultrasound examination, including 59 cases of SCN, 37 cases of MCN, 55 cases of SPN, and 12 cases of IPMN. Of 163 patients undergoing contrast-enhanced ultrasound examination, there were 82 cases who had the result of contrast-enhanced ultrasound examination consistent with the result postoperative pathological examination, and the diagnosis accuracy rate was 50.3% (82/163). The diagnosis accuracy rates of contrast-enhanced ultrasound examination for the SCN, MCN, SPN and IPMN patients were 67.8% (40/59), 54.1% (20/37), 32.7% (18/55) and 4/12, respectively. Of 244 PCNs patients, 198 cases underwent computed tomography (CT) examination, including 60 cases of SCN, 44 cases of MCN, 82 cases of SPN, and 12 cases of IPMN. Of 198 patients undergoing CT examination, there were 135 cases who had the result of CT examination consistent with the result postoperative pathological examination, and the diagnosis accuracy rate was 68.2% (135/198). The diagnosis accuracy rates of CT examination for the SCN, MCN, SPN and IPMN patients were 76.7% (46/60), 79.5% (35/44), 58.5% (48/82) and 6/12, respectively. (4) Surgical situations: 244 patients underwent surgery successfully according to the preoperative evaluation and intraoperative exploration, without death during operation. Of 76 SCN patients, there were 20 cases undergoing pancreatoduodenectomy, 20 cases undergoing spleen-preserving distal pancreatectomy, 14 cases undergoing distal pancreatectomy combined with splenectomy, 9 cases undergoing local tumor resection, 7 cases undergoing duodenum-preserving pancreatic head resection and 6 cases undergoing middle pancreatectomy, respectively. Of 56 MCN patients, there were 20 cases undergoing distal pancreatectomy combined with splenectomy, 16 cases undergoing pancreatoduodenectomy, 9 cases undergoing spleen-preserving distal pancreatectomy, 8 cases undergoing middle pancreatectomy and 3 cases undergoing local tumor resection, respectively. Of 96 SPN patients, there were 34 cases undergoing distal pancreatectomy combined with splenectomy, 23 cases undergoing pancreatoduodenectomy, 15 cases undergoing spleen-preserving distal pancreatectomy, 12 cases undergoing local tumor resection, 8 cases undergoing middle pancreatectomy, 3 cases undergoing duodenum-preserving pancreatic head resection and 1 case undergoing total pancreatectomy, respectively. Of 16 IPMN patients, there were 9 cases undergoing pancreatoduodenectomy, 3 cases undergoing distal pancreatectomy combined with splenectomy, 3 cases undergoing total pancreatectomy and 1 case undergoing spleen-preserving distal pancreatectomy, respectively. (5) Postoperative complications: of 76 SCN patients, 17 cases had pancreatic fistula including 12 cases of biochemical fistula and 5 cases of grade B pancreatic fistula, 7 cases had abdominal infection, 1 case had delayed gastric emptying after pancreatoduodenectomy, 1 case had abdominal hemorrhage, 1 case had chyle fistula and 1 case had anastomotic fistula after middle pancreatectomy, respectively. Of 56 MCN patients, 7 cases had pancreatic fistula including 2 cases of biochemical fistula and 5 cases of grade B pancreatic fistula, 3 cases had abdominal infection, 2 cases had biliary fistula, 1 case had delayed gastric emptying after pancreatoduodenectomy, 1 case had gastrointestinal bleeding and 1 case had postoperative portal vein thrombosis, respectively. Of 96 SPN patients, 14 cases had pancreatic fistula including 5 cases of biochemical fistula, 8 cases of grade B pancreatic fistula, and 1 case of grade C pancreatic fistula, 6 cases had abdominal infection, 4 cases had delayed gastric emptying after pancreatoduodenectomy, 2 cases had abdominal hemorrhage or gastrointestinal bleeding, 1 case had biliary fistula and 1 case had postoperative portal vein thrombosis, respectively. Of 16 IPMN patients, 3 cases had pancreatic fistula including 1 case of biochemical fistula, 1 case of grade B pancreatic fistula, and 1 case of grade C pancreatic fistula, 2 cases had abdominal hemorrhage or gastrointestinal bleeding, 1 case had abdominal infection, 1 case had biliary fistula and 1 case had pulmonary embolism, respectively. The patient with pulmonary embolism died during the perioperative period, and the other patients with postoperative complications were discharged after conservative treatment, percutaneous drainage, interventional therapy or secondary surgery, respectively. **Conclusions** Patients with various types of PCNs including SCN, MCN, SPN and IPMN lack specific clinical symptoms and results of laboratory test. The CA19-9 levels has no significance for the classification of PCNs, but can be considered as a reference for distinguishing benign and malignant PCNs preoperatively. Imaging examination is the main diagnostic basis of PCNs. Surgical indications should be strictly controlled in patients with PCNs, and surgery should be actively performed in patients with indicators.

【**Key words**】 Pancreatic neoplasms; Solid pseudopapillary neoplasm; Serous cystic neoplasm; Mucinous cystic neoplasm; Intraductal papillary mucinous neoplasm; Diagnosis; Treatment

Fund program: Basic and Applied Basic Research of Guangdong Province (2019A1515010096, 2019A1515010686)

DOI: 10.3760/cma.j.cn115610-20201109-00704

胰腺囊性肿瘤(pancreatic cystic neoplasms, PCNs)是以胰管上皮细胞或腺泡增生、胰腺分泌物潴留而形成囊性病变为特征的一组肿瘤。PCNs 的发病率为 2%~49%,在>70 岁的患者中发病率可达 10%[1-3]。PCNs 主要包括浆液性囊性瘤(serous cystic neoplasm, SCN)、黏液性囊性瘤(mucinous cystic neoplasm, MCN)、实性假乳头状瘤(solid pseudopapillary neoplasm, SPN)、导管内乳头状黏液性瘤(intraductal papillary mucinous neoplasm, IPMN)、囊性胰腺神经内分泌瘤以及非上皮来源的囊性肿瘤等类型。近年来,随着健康体检普及,PCNs 的检出率明显增加。但目前临床对此类疾病的诊断与治疗尚有争议。本研究回顾性分析 2009 年 1 月至 2018 年 12 月我科收治的 244 例 PCNs 患者的临床病理资料,探讨不同类型 PCNs 的诊断与治疗。

1　资料与方法

1.1　一般资料

采用回顾性描述性研究方法。收集 244 例 PCNs 患者的临床病理资料;男 70 例,女 174 例;中位年龄为 43 岁,年龄范围为 5~79 岁。本研究符合《赫尔辛基宣言》的要求。患者及家属均签署知情同意书。

1.2　纳入标准和排除标准

纳入标准:(1)行手术治疗。(2)术后病理学检查结果证实为 PCNs。(3)影像学资料完整。(4)临床病理资料完整。

排除标准:(1)未行手术治疗。(2)术后病理学检查结果缺失或确诊为非 PCNs 胰腺其他类型肿瘤。(3)影像学资料缺失。(4)临床病理资料缺失。

1.3　手术方式

根据患者术前评估结果和术中探查结果确定手术方式,包括胰十二指肠切除术、远端胰腺切除术(保留脾脏或不保留脾脏)、胰腺中段切除术、保留十二指肠的胰头切除术、肿瘤局部切除术、全胰腺切除术。

1.4　观察指标和评价标准

观察指标:(1)PCNs 分类和临床病理学情况,包括性别、年龄、腹痛、肿瘤发生部位、术后病理学情况。(2)PCNs 患者术前 CA19-9 水平情况。(3)影像学检查结果:超声造影及 CT 检查的诊断符合率。(4)手术情况:手术完成情况和手术方式。(5)术后并发症情况。

评价标准:参考国际胰腺外科研究组(ISGPS)制订的胰瘘分级标准,术后胰瘘分为生化瘘、B 级胰瘘和 C 级胰瘘[4]。影像学检查的总体诊断符合率=术后组织病理学检查结果与影像学检查结果一致的例数/行该种影像学检查的例数,本研究计算总体诊断符合率时不具体区分浆液性及黏液性囊性肿瘤。CA19-9 值>35 U/mL 为升高;CA19-9 值≤35 U/mL 为正常。

1.5　统计学分析

应用 SPSS 18.0 统计软件进行分析。正态分布的计量资料以 $\bar{x}\pm s$ 表示。计数资料以绝对数或百分比表示,组间比较采用 χ^2 检验。$P<0.05$ 为差异有统计学意义。

2　结果

2.1　PCNs 分类和临床病理学情况

244 例 PCNs 患者中,SCN 76 例,MCN 56 例,SPN 96 例,IPMN 16 例。76 例 SCN 患者中,男 22 例、女 54 例;年龄为(51±14)岁,年龄范围为 22~78 岁;32 例术前有腹痛,44 例术前无腹痛;47 例肿瘤位于胰腺体尾部,29 例肿瘤位于胰腺头颈部。76 例 SCN 患者术后病理学检查结果均为良性。56 例 MCN 患者中,男 16 例、女 40 例;年龄为(49±16)岁,年龄范围为 20~79 岁;34 例术前有腹痛,22 例术前无腹痛;35 例肿瘤位于胰腺体尾部,21 例肿瘤位于胰腺头颈部。56 例 MCN 患者中,11 例术后病理学检查结果为恶性。96 例 SPN 患者中,男 21 例、女 75 例;年龄为(32±14)岁,年龄范围为 5~68 岁;42 例术前有腹痛,54 例术前无腹痛;58 例肿瘤位于胰腺体尾部,38 例肿瘤位于胰腺头颈部。96 例 SPN 患者中,1 例术后病理学检查结果为恶性。16 例 IPMN 患者中,男 11 例、女 5 例;年龄为(56±10)岁,年龄范围为 41~76 岁;11 例术前有腹痛,5 例术前无腹痛;4 例肿瘤位于胰腺体尾部,12 例肿瘤位于胰腺头颈部。16 例 IPMN 患者中,6 例术后病理学检查结果为恶性。

2.2　PCNs 患者术前 CA19-9 水平情况

76 例 SCN 患者中,9 例术前 CA19-9 水平升高,67 例术前 CA19-9 水平正常。56 例 MCN 患者中,7 例术前 CA19-9 水平升高,49 例术前 CA19-9 水平正常。96 例 SPN 患者中,14 例术前 CA19-9 水平升高,82 例术前 CA19-9 水平正常。16 例 IPMN 患者中,4 例术前 CA19-9 水平升高,12 例术前 CA19-9 水平正常。

244 例 PCNs 患者中,226 例为良性 PCNs,18 例为恶性 PCNs。226 例良性 PCNs 患者中,26 例 CA19-9

水平升高;18 例恶性 PCNs 患者中,8 例 CA19-9 水平升高,两者术前 CA19-9 水平升高情况比较,差异有统计学意义(χ^2 = 15.084, P<0.05)。

2.3 影像学检查结果

244 例患者中,163 例行超声造影检查,其中 SCN 59 例,MCN 37 例,SPN 55 例,IPMN 12 例。163 例行超声造影检查患者中,82 例检查结果与术后病理学检查结果一致,诊断符合率为 50.3%(82/163)。其中,SCN、MCN、SPN、IPMN 的诊断符合率分别为 67.8%(40/59)、54.1%(20/37)、32.7%(18/55)、4/12。

244 例患者中,198 例行 CT 检查,其中 SCN 60 例,MCN 44 例,SPN 82 例,IPMN 12 例。198 例行 CT 检查的患者中,135 例检查结果与术后病理学检查结果一致,诊断符合率为 68.2%(135/198)。其中 SCN、MCN、SPN、IPMN 的诊断符合率分别为 76.7%(46/60)、79.5%(35/44)、58.5%(48/82)、6/12。

2.4 手术情况

244 例患者均根据术前评估结果和术中探查结果成功施行手术,术中无死亡病例。

76 例 SCN 患者中,20 例行胰十二指肠切除术、20 例行保留脾脏的胰体尾切除术、14 例行胰体尾切除合并脾切除术、9 例行肿瘤局部切除术、7 例行保留十二指肠的胰头切除术、6 例行胰腺中段切除术。56 例 MCN 患者中,20 例行胰体尾切除合并脾切除术、16 例行胰十二指肠切除术、9 例行保留脾脏的胰体尾切除术、8 例行胰腺中段切除术 3 例行肿瘤局部切除术。96 例 SPN 患者中,34 例行胰体尾切除合并脾切除术、23 例行胰十二指肠切除术、15 例行保留脾脏的胰体尾切除术、12 例行肿瘤局部切除术、8 例行胰腺中段切除术、3 例行保留十二指肠的胰头切除术、1 例行全胰腺切除术。16 例 IPMN 患者中,9 例行胰十二指肠切除术、3 例行胰体尾切除合并脾切除术、3 例行全胰腺切除术、1 例行保留脾脏的胰体尾切除术。

2.5 术后并发症情况

76 例 SCN 患者中,17 例发生胰瘘(生化瘘 12 例、B 级胰瘘 5 例),7 例腹腔感染,1 例胰十二指肠切除术后患者发生胃排空延迟,1 例腹腔出血,1 例乳糜瘘,1 例胰腺中段切除术患者术后发生胰肠吻合口瘘。56 例 MCN 患者中,7 例发生胰瘘(生化瘘 2 例、B 级胰瘘 5 例),3 例腹腔感染,2 例胆瘘,1 例胰十二指肠切除术后患者发生胃排空延迟,1 例消化道出血,1 例术后门静脉血栓形成。96 例 SPN 患者中,14 例发生胰瘘(生化瘘 5 例、B 级胰瘘 8 例、C 级胰瘘 1 例),6 例腹腔感染,4 例胰十二指肠切除术后患者发生胃排空延迟,2 例腹腔出血或消化道出血,1 例胆瘘,1 例术后门静脉血栓形成。16 例 IPMN 患者中,3 例发生胰瘘(生化瘘、B 级胰瘘、C 级胰瘘各 1 例),2 例腹腔出血或消化道出血,1 例腹腔感染,1 例胆瘘,1 例围术期死于肺栓塞。所有并发症根据病情的严重程度,选择保守治疗、经皮穿刺置管引流、介入治疗或二次手术,均好转出院。

3 讨论

3.1 PCNs 的流行病学特征及临床特征分析

PCNs 是一种少见的胰腺疾病,临床表现不明显,既往检出率低[5]。近年来,随着医学影像学的发展和普及,PCNs 的检出率日益提高[6]。本研究结果显示:244 例 PCNs 患者中,76 例为 SCN,发病年龄为(51±14)岁,女性多于男性,多数患者术前无腹痛,与文献报道一致[7]。244 例 PCNs 患者中,仅 56 例为 MCN 患者,发生例数低于 SCN 和 SPN,与既往研究结果不一致[7]。这可能与不同地区间发病情况存在差异有关。MCN 发病年龄为(49±16)岁,女性多于男性,多数患者术前有腹痛,11 例有恶变,这与文献报道一致[8-11]。244 例 PCNs 患者中,96 例为 SPN,发病年龄为(32±14)岁,女性多于男性;仅有 1 例发生恶变。这与既往研究结果一致[7,12-13]。244 例 PCNs 患者中,16 例为 IPMN,发病年龄为(56±10)岁,男性多于女性,6 例发生恶变。这与既往研究结果一致[7,14]。

3.2 PCNs 的肿瘤标志物意义

PCNs 实验室检查结果无明显特异性。部分 PCNs 以急性胰腺炎发病,伴有血清淀粉酶升高,但假性囊肿患者血清淀粉酶亦可升高,故缺乏鉴别诊断价值[15]。肿瘤标志物区分 PCNs 的类型无特异性,但对区别肿瘤良恶性有价值[16]。本研究结果显示:良性 PCNs 患者术前 CA19-9 水平升高情况显著低于恶性 PCNs 患者,差异有统计学意义。这提示在术前其他检查结果无法判断肿瘤良恶性时,肿瘤标志物可能对判定结果有指导意义。

3.3 选择合理的影像学检查

影像学检查结果是 PCNs 诊断的重要依据。MRCP 检查结果可显示囊性病变与胰管的结构关系,对 IPMN 的诊断和分型具有重要价值。由于 MRCP 检查没有电离辐射的致癌风险,故被认为是 PCNs 随访的首选方法[17]。既往研究结果显示:EUS 检查是诊断 PCNs 最灵敏的方法,检查结果优

于 CT 和 MRI 检查;但也有学者认为 EUS 检查属于有创操作,不宜作为首选方法,而且 EUS 引导下囊肿穿刺可能会造成肿瘤的腹腔播散,因此,不推荐作为常规的检查手段[18]。本研究结果显示:无论是超声造影检查或是增强 CT 检查,各类型的 PCNs 总体诊断符合率均<80%,整体较低。因此,笔者推荐:PCNs 在术前单一影像学检查不能满足诊断要求时,应行>2 种的影像学检查以明确诊断;并且首选无创的影像学检查,包括 MRI、MRCP、CT 检查。当此类检查均难以明确诊断时,可考虑行 EUS 检查或 EUS 引导下细针穿刺检查。PCNs 的诊断重点在于鉴别 IPMN 和 MCN 以及评估肿瘤良恶性,尤其需要充分发挥多学科综合治疗在诊断与治疗中的价值[19]。目前已有新的影像学检查手段能够提升 PCNs 的诊断准确率,其有效性有待进一步验证[20-27]

3.4 PCNs 的治疗方式

应根据 PCNs 的具体类型,严格把握手术指征、选择合理的手术方案或随访策略。同时,根据肿瘤的具体生长部位、大小,与周围组织、血管的关系,并应结合术中对肿瘤良恶性的判断选择具体的手术方式[28-30]。

SCN 多数为良性,预后较好。当肿瘤长径≥6 cm 时应积极手术治疗。当肿瘤长径<6 cm 时,若存在以下情况也应积极手术,包括出现临床症状、肿瘤位于胰头、无法完全排除恶变或有侵袭性表现。MCN 具有恶变潜能,诊断明确时均应手术治疗[31-32]。SPN 同样具有恶变潜能,因此,推荐手术切除。IPMN 的手术方式视具体类型和病灶位置而定[31-34]。由于胰腺为腹膜后器官,血供丰富,周围毗邻大血管及多个脏器,因此,手术难度大,术后并发症发生率较高。手术总体原则为彻底切除肿瘤,并尽可能地保护胰腺功能。本研究的病例均严格掌握手术适应证。

多数 PCNs 恶性程度不高,是腹腔镜手术及保留脾脏的远端胰腺切除术良好的适应证[35-36]。笔者认为:腹腔镜手术更适合行胰体尾切除术的 PCNs 患者。

综上,PCNs 主要包括 SCN、MCN、SPN、IPMN。各型 PCNs 缺乏典型的临床症状,实验室检查缺乏特异性。术前 CA19-9 水平可对术前 PCNs 良恶性的判断提供一定参考。影像学检查是 PCNs 主要的诊断依据。PCNs 应严格把握手术指征,有手术指征时应积极手术治疗。

利益冲突 所有作者均声明不存在利益冲突

参 考 文 献

[1] Laffan TA, Horton KM, Klein AP, et al. Prevalence of unsuspected pancreatic cysts on MDCT[J]. AJR Am J Roentgenol, 2008, 191(3):802-807. DOI:10.2214/AJR.07.3340.

[2] Lee KS, Sekhar A, Rofsky NM, et al. Prevalence of incidental pancreatic cysts in the adult population on MR imaging[J]. Am J Gastroenterol, 2010, 105(9):2079-2084. DOI:10.1038/ajg.2010.122.

[3] Kromrey ML, Bülow R, Hübner J, et al. Prospective study on the incidence, prevalence and 5-year pancreatic-related mortality of pancreatic cysts in a population-based study[J]. Gut, 2018, 67(1):138-145. DOI:10.1136/gutjnl-2016-313127.

[4] Bassi C, Marchegiani G, Dervenis C, et al. The 2016 update of the International Study Group (ISGPS) definition and grading of postoperative pancreatic fistula: 11 years after[J]. Surgery, 2017, 161(3):584-591. DOI:10.1016/j.surg.2016.11.014.

[5] Adet A, Miquel R, Bombi JA, et al. Incidence and characteristics of pancreatic cystic neoplasms[J]. Gastroenterol Hepatol, 2010, 33(8):563-568. DOI:10.1016/j.gastrohep.2010.07.001.

[6] Valsangkar NP, Morales-Oyarvide V, Thayer SP, et al. 851 resected cystic tumors of the pancreas: a 33-year experience at the massachusetts general hospital[J]. Surgery, 2012, 152(3 Suppl 1): S4-12. DOI:10.1016/j.surg.2012.05.033.

[7] Brugge WR, Lauwers GY, Sahani D, et al. Cystic neoplasms of the pancreas[J]. N Engl J Med, 2004, 351(12): 1218-1226. DOI:10.1056/NEJMra031623.

[8] Reddy RP, Smyrk TC, Zapiach M, et al. Pancreatic mucinous cystic neoplasm defined by ovarian stroma: demographics, clinical features, and prevalence of cancer[J]. Clin Gastroenterol Hepatol, 2004, 2(11):1026-1031. DOI:10.1016/s1542-3565(04)00450-1.

[9] Zamboni G, Scarpa A, Bogina G, et al. Mucinous cystic tumors of the pancreas: clinicopathological features, prognosis, and relationship to other mucinous cystic tumors[J]. Am J Surg Pathol, 1999, 23(4):410-422. DOI:10.1097/00000478-199904000-00005.

[10] Thompson LD, Becker RC, Przygodzki RM, et al. Mucinous cystic neoplasm (mucinous cystadenocarcinoma of low-grade malignant potential) of the pancreas: a clinicopathologic study of 130 cases [J]. Am J Surg Pathol, 1999, 23(1):1-16. DOI:10.1097/00000478-199901000-00001.

[11] 邓友松,龚建平.23 例胰腺囊性肿瘤诊治体会[J].中国现代普通外科进展,2013,16(10):781-785. DOI:10.3969/j.issn.1009-9905.2013.10.008.

[12] Sarr MG, Murr M, Smyrk TC, et al. Primary cystic neoplasms of the pancreas. Neoplastic disorders of emerging importance-current state-of-the-art and unanswered questions[J]. J Gastrointest Surg, 2003, 7(3):417-428. DOI:10.1016/s1091-255x(02)00163-4.

[13] Campbell F, Azadeh B. Cystic neoplasms of the exocrine pancreas [J]. Histopathology, 2008, 52(5): 539-551. DOI: 10.1111/j.1365-2559.2007.02856.x.

[14] Sohn TA, Yeo CJ, Cameron JL, et al. Intraductal papillary mucinous neoplasms of the pancreas: an updated experience[J]. Ann Surg, 2004, 239(6):788-799. DOI:10.1097/01.sla.0000128306.90650.aa.

[15] Savelli G, Bertagna F, Zaniboni A, et al. "Evaluation of the Sendai and 2012 International Consensus Guidelines based on cross-sectional imaging findings performed for the initial triage of mucinous cystic lesions of the pancreas: a single institution experience with 114 surgically treated patients." Or rather "Don Giovanni o sia il convitato di pietra"[J]. Am J Surg, 2015, 209(2):429-430. DOI:10.1016/j.amjsurg.2014.05.033.

[16] Lennon AM, Wolfgang C. Cystic neoplasms of the pancreas[J]. J Gastrointest Surg, 2013, 17(4):645-653. DOI:10.1007/s11605-

012-2072-6.
[17] Sodickson A, Baeyens PF, Andriole KP, et al. Recurrent CT, cumulative radiation exposure, and associated radiation-induced cancer risks from CT of adults[J]. Radiology, 2009, 251(1): 175-184. DOI: 10.1148/radiol.2511081296.
[18] Yamao K, Yanagisawa A, Takahashi K, et al. Clinicopathological features and prognosis of mucinous cystic neoplasm with ovarian-type stroma: a multi-institutional study of the Japan pancreas society[J]. Pancreas, 2011, 40(1): 67-71. DOI: 10.1097/MPA.0b013e3181f749d3.
[19] 刘东斌,曹锋,李非,等.胰腺导管内乳头状黏液瘤(IPMNs)良恶性评估进展[J].中国现代普通外科进展,2011,14(9):707-711. DOI:10.3969/j.issn.1009-9905.2011.09.012.
[20] Rastegar N, Matteoni-Athayde LG, Eng J, et al. Incremental value of secretin-enhanced magnetic resonance cholangiopancreatography in detecting ductal communication in a population with high prevalence of small pancreatic cysts[J]. Eur J Radiol, 2015, 84(4): 575-580. DOI:10.1016/j.ejrad.2014.12.028.
[21] Marchegiani G, Andrianello S, Borin A, et al. Systematic review, meta-analysis, and a high-volume center experience supporting the new role of mural nodules proposed by the updated 2017 international guidelines on IPMN of the pancreas[J]. Surgery, 2018, 163(6): 1272-1279. DOI:10.1016/j.surg.2018.01.009.
[22] Konda VJ, Meining A, Jamil LH, et al. A pilot study of in vivo identification of pancreatic cystic neoplasms with needle-based confocal laser endomicroscopy under endosonographic guidance[J]. Endoscopy, 2013, 45(12): 1006-1013. DOI: 10.1055/s-0033-1344714.
[23] 刘军桂,周宁新.胰腺囊性肿瘤的诊断和治疗[J].解放军医药杂志,2011,23(6):81-84.DOI:10.3969/j.issn.2095-140X.2011.06.038.
[24] 温丽君,王春雨,吴继华,等.胰腺实性假乳头状瘤临床病理特征分析并文献复习[J].解放军医药杂志,2015,27(2):107-109.DOI:10.3969/j.issn.2095-140X.2015.02.029.
[25] 王大伟,柏刚,张文君,等.胰腺实性假乳头状瘤超声误诊分析[J].临床误诊误治,2019,32(4):5-9. DOI: 10.3969/j.issn.1002-3429.2019.04.002.
[26] 李志彬,段雅希,刘伟,等.胰腺实性假乳头状瘤影像学特征分析[J].临床误诊误治,2015,28(9):67-70. DOI:10.3969/j.issn.1002-3429.2015.09.028.
[27] 金震东.胰腺囊性病变的内镜诊治[J].临床肝胆病杂志,2020,36(8):1698-1703. DOI:10.3969/j.issn.1001-5256.2020.08.004.
[28] Stark A, Donahue TR, Reber HA, et al. Pancreatic cyst disease: a review[J]. JAMA, 2016, 315(17): 1882-1893. DOI: 10.1001/jama.2016.4690.
[29] 楼文晖.观察还是手术切除:胰腺囊性肿瘤的治疗策略[J].中华消化外科杂志,2018,17(7):663-665. DOI: 10.3760/cma.j.issn.1673-9752.2018.07.005.
[30] 茆竞宇,黄明全,陈阳,等.术前诊断存疑的胰腺囊性病变外科手术指征及诊治分析[J].局解手术学杂志,2016,25(10):735-737,738. DOI:10.11659/jjssx.03E016055.
[31] Zamboni G, Scarpa A, Bogina G, et al. Mucinous cystic tumors of the pancreas: clinicopathological features, prognosis, and relationship to other mucinous cystic tumors[J]. Am J Surg Pathol, 1999, 23(4): 410-422. DOI: 10.1097/00000478-199904000-00005.
[32] Sperti C, Beltrame V, Milanetto AC, et al. Parenchyma-sparing pancreatectomies for benign or border-line tumors of the pancreas[J]. World J Gastrointest Oncol, 2010, 2(6): 272-281. DOI: 10.4251/wjgo.v2.i6.272.
[33] Tanaka M, Fernández-Del Castillo C, Kamisawa T, et al. Revisions of international consensus Fukuoka guidelines for the management of IPMN of the pancreas[J]. Pancreatology, 2017, 17(5): 738-753. DOI: 10.1016/j.pan.2017.07.007.
[34] Shi C, Klein AP, Goggins M, et al. Increased prevalence of precursor lesions in familial pancreatic cancer patients[J]. Clin Cancer Res, 2009, 15(24): 7737-7743. DOI: 10.1158/1078-0432.CCR-09-0004.
[35] Chaudhari VA, Pradeep R, Ramesh H, et al. Surgery for cystic tumors of pancreas: report of high-volume, multicenter Indian experience over a decade[J]. Surgery, 2019, 166(6): 1011-1016. DOI: 10.1016/j.surg.2019.07.013.
[36] Fernández-Cruz L, Martínez I, Gilabert R, et al. Laparoscopic distal pancreatectomy combined with preservation of the spleen for cystic neoplasms of the pancreas[J]. J Gastrointest Surg, 2004, 8(4): 493-501. DOI: 10.1016/j.gassur.2003.11.014.

（收稿日期：2020-11-09）

本文引用格式

黄晨松,钟记华,陈伟,等.不同类型胰腺囊性肿瘤的诊断与治疗[J].中华消化外科杂志,2020,19(12):1293-1299. DOI: 10.3760/cma.j.cn115610-20201109-00704.

Huang Chensong, Zhong Jihua, Chen Wei, et al. Diagnosis and treatment of various types of pancreatic cystic neoplasms[J]. Chin J Dig Surg, 2020, 19(12): 1293-1299. DOI: 10.3760/cma.j.cn115610-20201109-00704.

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