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ERCP 术治疗胆总管结石的有效性及安全性分析 *

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摘要 目的:分析经内镜逆行胰胆管造影术(ERCP)术治疗胆总管结石的有效性及安全性。**方法:**选择2017年1月~2018年8月在我院接受择期ERCP治疗的164例胆总管结石患者为研究对象,分析患者的手术情况、取石效果、手术前后胃肠疾病生活质量指数(GIQLI)量表评分和并发症的发生情况。**结果:**胆总管结石患者手术时间为 (37.90 ± 4.21) min、术中出血量 (10.86 ± 1.29) mL、术后通气时间 (4.38 ± 0.65) d、切口疼痛时间 (1.02 ± 0.12) d、住院时间 (8.62 ± 0.96) d、手术成功率为97.56%(160/164)、一次取净结石率为95.73%(157/164)、二次取净结石率为1.82%(3/164)。术后,胆总管结石患者GIQLI评分均显著高于术前($P < 0.05$)。胆总管结石患者术后发生胰腺炎5例、胆管炎1例、出血6例、高淀粉酶血症4例。**结论:**ERCP术是胆总管结石患者的有效治疗手段,但需积极预防并处理相关并发症。

关键词:胆总管结石;经内镜逆行胰胆管造影术;有效性;并发症

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Analysis of the Effectiveness and Safety of Endoscopic Retrograde Cholangiopancreatography in the Treatment of Choledocholithiasis*

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ABSTRACT Objective: To analyze the efficacy and safety of endoscopic retrograde cholangiopancreatography (ERCP) in the treatment of choledocholithiasis. **Methods:** 164 cases of choledocholithiasis patients who were treated by elective ERCP in our hospital from January 2017 to August 2018 were selected as the research objects, the operation condition, stone effect, gastrointestinal disease quality of life index (GIQLI) scale before and after surgery, and the incidence of complications were analyzed. **Results:** The operation time of patients with choledocholithiasis was (37.90 ± 4.21) min, the intraoperative blood loss was (10.86 ± 1.29) mL, the postoperative ventilation time was (4.38 ± 0.65) d, the incision pain time was (1.02 ± 0.12) d, the length of hospital stay was (8.62 ± 0.96) d, the success rate of surgery was 97.56% (160/164), the stone removal rate was 95.73% (157/164), and the stone removal rate was 1.82% (3/164). Before surgery, the GIQLI scores of patients with common bile duct stones were all higher than those before surgery ($P < 0.05$). There were 5 cases of pancreatitis, 1 case of cholangitis, 6 cases of bleeding and 4 cases of hyperamylase in the patients with choledocholithiasis. **Conclusion:** ERCP is an effective treatment for choledocholithiasis, but the related complications should be actively prevented and managed.

Key words: Choledocholithiasis; Endoscopic retrograde cholangiopancreatography; Effectiveness; Complications

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前言

胆总管结石为消化系统的常见疾病之一,以黄疸、寒战高热、上腹绞痛等为主要症状,还可能出现多脏器功能障碍、感染性休克、呼吸衰竭等表现,有一定病死率^[1,2]。手术是胆总管结石的主要治疗方式,胆总管切开取石术的疗效已得到临床认可,但其创伤较大,不利于患者术后恢复^[3,4]。

近年来,随着内镜技术的进步,内镜逆行胰胆管造影术(ERCP)在胆总管结石的治疗上明显进步。现有研究表明,相比传统外科手术,ERCP在操作性、手术创伤及并发症等方面的优势较为突出^[5-8]。但ERCP作为有创疗法,具有一定的创伤和

风险性,不可避免系列并发症的发生,甚至可能危及患者生命^[9,10]。本研究主要分析了ERCP术治疗胆总管结石的有效性及相关并发症,以期胆总管结石患者安全有效的治疗提供更多的参考依据。

1 资料与方法

1.1 一般资料

选择2017年1月~2018年8月在我院接受择期ERCP治疗的164例胆总管结石患者为研究对象,纳入标准^[11]:经病史、症状、体征、实验室检查、影像学检查明确诊断为胆总管结石;均经常规内科治疗控制症状,且手术指征明确;心、肾等功能正

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常、凝血系统正常。排除标准:急诊手术指征;胆源性急性胰腺炎或者慢性胰腺炎急性发作;急性化脓性胆管炎、严重胆道感染合并休克者;造影剂敏感史;上腹部手术史;精神障碍或者疾病;肠梗阻或者肠腔狭窄。所有患者中男 70 例,女 94 例;年龄 28~77 岁,平均 (57.94 ± 9.11) 岁;结石直径 9~25 mm,平均 (17.62 ± 2.61) mm;胆总管结石数 2~5 枚,平均 (2.61 ± 0.36) 枚;胆总管结石合并胆管炎 76 例、胆囊切除术后胆总管结石 90 例。

1.2 治疗方法

所有患者入院后均常规测量体温、血象及肝功能等指标,均经抗休克、抗炎、保持水电解质平衡、营养支持及对症治疗,积极控制急性炎症、待症状改善后择期进行 ERCP 治疗。术前为家属及患者详细交代病情,签署知情同意书。指导患者为俯卧位或者左侧卧位,保持头部后仰,于口部置入十二指肠镜,并依次达到胃部与十二指肠,后于降段内明确大乳头位置。于导丝引导下对胆管实施超选插管,并注入适量造影剂。明确结石数目、大小及位置,并切开乳头。在内镜引导下置入取石网并将结石取出,小颗粒结石较多者可予以石球囊取出,结石过大者可于碎石后取出。并置入鼻胆引流管。术后均常规控制感染,预防术后胰腺炎,吸氧及心电监测。记录患者手术情况,手术成功率(术中可见结石但未取出者即为失败),及胰腺炎(1.术后淀粉酶超过正常值 3 倍以上;2.上腹痛且持续时间超过 24 h,疼痛评分超过 4 分;3.排除急性胆管炎、急性胆囊炎、胃肠道穿孔等症状)、胆管炎(起病急骤、突发右上腹剧烈、持续性疼痛,继而出现弛张型高热、寒战)、出血、高淀粉酶血症(血清淀粉酶超过正常,

无腹部压痛、恶心呕吐、腹痛等症状)等术后并发症发生情况。

1.3 观察指标

于术前及术后 2 周用胃肠疾病生活质量指数(GIQLI)量表^[11]评估患者生活质量,包含自觉症状、躯体生理功能、社会活动、心理情绪、特殊疾病等 5 个方面评分,分数越高说明健康状态越高。

1.4 统计学分析

数据处理选用 SPSS18.0 软件包,计量资料用 $(\bar{x} \pm s)$ 表示,选用独立样本 t 检验,计数资料用 [(例)%] 表示,用 χ^2 检验比较, $P < 0.05$ 表示差异有统计学意义。

2 结果

2.1 胆总管结石患者的手术情况分析

胆总管结石患者手术时间为 (37.90 ± 4.21) min、术中出血量 (10.86 ± 1.29) mL、术后通气时间 (4.38 ± 0.65) d、切口疼痛时间 (1.02 ± 0.12) d、住院时间 (8.62 ± 0.96) d。

2.2 胆总管结石患者的取石效果分析

胆总管结石患者手术成功率为 97.56%(160/164)、一次取净结石率为 95.73%(157/164)、二次取净结石率为 1.82%(3/164)。

2.3 胆总管结石患者手术前后的 GIQLI 评分比较

术后,胆总管结石患者 GIQLI 评分均高于术前($P < 0.05$),见表 1。

表 1 胆总管结石患者手术前后 GIQLI 评分比较($\bar{x} \pm s$, 分)

Table 1 Comparison of the GIQLI scores of patients with common bile duct stones before and after surgery ($\bar{x} \pm s$, score)

Time	n	Conscious symptoms	Hysical and physiological functions	Social activities	Psychological emotions	Special diseases	Total quality of life
Before surgery	164	25.11± 3.12	13.02± 2.15	11.51± 1.20	14.20± 1.27	34.20± 4.23	99.06± 14.28
After surgery	164	30.67± 5.03 [#]	17.39± 2.86 [#]	13.08± 1.82	18.85± 2.75 [#]	38.19± 6.09 [#]	117.82± 17.40 [#]

Note: Compared with before surgery [#] $P < 0.05$.

2.4 胆总管结石患者相关并发症分析

胆总管结石患者术后发生胰腺炎 5 例、胆管炎 1 例、出血 6 例、高淀粉酶血症 4 例,给予对症处理后均得到明显控制,未发生严重后果。

3 讨论

胆总管结石的发病急、病情复杂,近年来其发生率呈上升趋势,手术为胆总管结石的主要疗法,但急性发作期手术难以明确胆道系统、结石数量及位置,增加二次手术的可能性,因此临床多在炎症控制后进行择期手术^[12,13]。胆总管切开取石术为既往胆总管结石患者的主要治疗方式,可发挥良好的治疗作用,但有研究认为^[14,15]其需切开胆管,创伤性明显,会增加患者痛苦,且术后有一定感染风险。

ERCP 近年来已广泛开展于胰胆管系统疾病的诊治中,具有可反复多次取石、创伤小、术后恢复快等优势^[16,17]。ERCP 通过十二指肠镜经自然通道取石,能够直接观察胆汁的引流状态,并可经鼻胆管冲洗胆道及注射胆管造影,利于疾病的动态后续

治疗,还可为患者争取最佳的治疗机会^[18,19]。本结果显示胆总管结石患者经 ERCP 治疗后手术时间、术中出血量、术后通气时间、切口疼痛时间及住院时间较既往文献报道的常规胆总管切开术低,手术成功率及一次取净结石率均超过 90%,表明 ERCP 治疗胆总管结石能够起到不错的临床疗效,微创性明显,能够有效减轻患者疼痛,促进术后恢复,可能因为 ERCP 术能够避免常规胆总管切开术所致的腹壁出血,加上其微创性明显可减少出血量,同时由于术中能够减少对胃肠道的干扰,从而利于患者下床活动,促进肠蠕动,从而缩短患者术后通气时间、切口疼痛时间及住院时间^[20,21]。胆总管结石患者 ERCP 术后 GIQLI 评分较术前高,进一步证实 ERCP 在胆总管结石治疗上的效果。

ERCP 作为侵入性治疗手段,有一定的并发症可能。急性胰腺炎为 ERCP 术后常见并发症,主要是因导管反复进入胰管,引起胰管物理性损伤,胰管内造影剂剂量过大导致胰腺腺泡破裂等因素所致,有一定病死率^[22,23]。ERCP 术中操作时应明确胰胆管汇合部的正常结构,操作轻柔,减少插管次数,避免胰

管的反复显影及胰泡显影,对于疑似有胰管梗阻者应留置胰管支架^[24,25]。本研究中胆总管结石患者 ERCP 术后 5 例发生急性胰腺炎,经系统规范化的急性胰腺炎治疗后病情均有所控制,未引起严重后果。另外,高淀粉酶血症为 ERCP 取石术后另一常见并发症,造影所用造影剂及器械可将感染因素带至胰管,并促进感染及炎症扩散,引起血清淀粉酶一过性升高^[26,27]。ERCP 取石术中及术后均可出现出血,多数出血经内科保守治疗后能够停止,及少数患者需外科手术矫正,本研究中患者经内科保守治疗后出血情况均得到控制。胆管炎未经及时控制者容易发展为败血症而危及患者安全,术前应采用抗生素避免术中感染,配制造影剂时严格消毒,推注造影剂时动作柔和、缓慢,从而避免胆管炎的发生^[28,29]。本研究中 1 例患者发生胆管炎,经抗炎治疗后有效控制。穿孔为 ERCP 取石术中的严重并发症,发生率相对较低,多发生于消化性溃疡、上腹部手术史等患者,应密切关注患者术后状况,透视时查看有无腹腔游离气体发生,本研究中无患者发生术中穿孔^[30,31]。

综上所述,ERCP 术是胆总管结石患者的有效治疗手段,但需积极预防并处理相关并发症。本研究样本量少,临床需进一步扩大样本量,以减少随机误差,增加结论的可靠性。

参考文献(References)

- [1] Wijarnpreecha K, Panjawanatnan P, Manatsathit W, et al. Association Between Juxtapapillary Duodenal Diverticula and Risk of Cholelithiasis: a Systematic Review and Meta-analysis[J]. J Gastrointest Surg, 2018, 22(12): 2167-2176
- [2] Zhang W, Wang BY, Du XY, et al. Big-data analysis: A clinical pathway on endoscopic retrograde cholangiopancreatography for common bile duct stones[J]. World J Gastroenterol, 2019, 25(8): 1002-1011
- [3] Zhou XD, Chen QF, Zhang YY, et al. Outcomes of endoscopic sphincterotomy vs open choledochotomy for common bile duct stones[J]. World J Gastroenterol, 2019, 25(4): 485-497
- [4] Zhang C, Ma YF, Yang YL, et al. Clinical evaluation of gallbladder and common bile duct stones treated through cholecystostomy tube[J]. Zhonghua Yi Xue Za Zhi, 2019, 99(4): 288-290
- [5] Chang HY, Wang CJ, Liu B, et al. Ursodeoxycholic acid combined with percutaneous transhepatic balloon dilation for management of gallstones after elimination of common bile duct stones [J]. World J Gastroenterol, 2018, 24(39): 4489-4498
- [6] Kou K, Liu X, Hu Y, et al. Hem-o-lok clip found in the common bile duct 3 years after laparoscopic cholecystectomy and surgical exploration[J]. J Int Med Res, 2019, 47(2): 1052-1058
- [7] Jeon J, Lim SU, Park CH, et al. Restoration of common bile duct diameter within 2 weeks after endoscopic stone retraction is a preventive factor for stone recurrence [J]. Hepatobiliary Pancreat Dis Int, 2018, 17(3): 251-256
- [8] Ahn DW, Lee SH, Paik WH, et al. Effects of Saline Irrigation of the Bile Duct to Reduce the Rate of Residual Common Bile Duct Stones: A Multicenter, Prospective, Randomized Study [J]. Am J Gastroenterol, 2018, 113(4): 548-555
- [9] Fang L, Wang J, Dai WC, et al. Laparoscopic transcystic common bile duct exploration: surgical indications and procedure strategies [J]. Surg Endosc, 2018, 32(12): 4742-4748
- [10] Kaneko J, Kawata K, Watanabe S, et al. Clinical characteristics and risk factors for stent-stone complex formation following biliary plastic stent placement in patients with common bile duct stones [J]. J Hepatobiliary Pancreat Sci, 2018, 25(10): 448-454
- [11] Singh AN, Kilambi R. Single-stage laparoscopic common bile duct exploration and cholecystectomy versus two-stage endoscopic stone extraction followed by laparoscopic cholecystectomy for patients with gallbladder stones with common bile duct stones: systematic review and meta-analysis of randomized trials with trial sequential analysis [J]. Surg Endosc, 2018, 32(9): 3763-3776
- [12] Zhou J, Xiao R, Yang JR, et al. Mirizzi syndrome complicated by common hepatic duct fistula and left hepatic atrophy: a case report[J]. J Int Med Res, 2018, 46(11): 4806-4812
- [13] Jung GS, Kim YJ, Yun JH, et al. Percutaneous Transcholecystic Removal of Common Bile Duct Stones: Case Series in 114 Patients[J]. Radiology, 2019, 290(1): 238-243
- [14] Liu B, Wu DS, Cao PK, et al. Percutaneous transhepatic extraction and balloon dilation for simultaneous gallbladder stones and common bile duct stones: A novel technique [J]. World J Gastroenterol, 2018, 24(33): 3799-3805
- [15] Akazawa Y, Ohtani M, Nosaka T, et al. Long-term prognosis after biliary stenting for common bile duct stones in high-risk elderly patients[J]. J Dig Dis, 2018, 19(10): 626-634
- [16] Liu WS, Jiang Y, Zhang D, et al. Laparoscopic Common Bile Duct Exploration Is a Safe and Effective Strategy for Elderly Patients[J]. Surg Innov, 2018, 25(5): 465-469
- [17] Kim YA, Kim GM, Chun P, et al. Management of Pediatric Patients Presenting with Acute Abdomen Accompanying Dilatation of the Common Bile Duct [J]. Pediatr Gastroenterol Hepatol Nutr, 2018, 21(3): 203-208
- [18] Virzi V, Ognibene NMG, Sciortino AS, et al. Routine MRCP in the management of patients with gallbladder stones awaiting cholecystectomy: a single-centre experience [J]. Insights Imaging, 2018, 9(5): 653-659
- [19] Panda N, Chang Y, Chokengarmwong N, et al. Gallstone Pancreatitis and Cholelithiasis: Using Imaging and Laboratory Trends to Predict the Likelihood of Persistent Stones at Cholangiography [J]. World J Surg, 2018, 42(10): 3143-3149
- [20] Niu X, Song J, He X, et al. Micro-Incision of the Cystic Duct Confluence in Laparoscopic Common Bile Duct Exploration for Elderly Patients with Cholelithiasis [J]. Indian J Surg, 2018, 80(3): 227-232
- [21] Park JS, Jeong S, Lee DK, et al. Comparison of endoscopic papillary large balloon dilation with or without endoscopic sphincterotomy for the treatment of large bile duct stones [J]. Endoscopy, 2019, 51(2): 125-132
- [22] Boldin BV, Ponomar SA, Revyakin VI, et al. Successful endoscopic treatment of severe iatrogenic injury of common bile duct [J]. Khirurgiia (Mosk), 2018, (6): 109-111
- [23] Noel R, Amelo U, Swahn F. Intraoperative versus postoperative rendezvous endoscopic retrograde cholangiopancreatography to treat common bile duct stones during cholecystectomy [J]. Dig Endosc, 2019, 31(1): 69-76
- [24] Pang L, Zhang Y, Wang Y, et al. Transcystic versus traditional laparoscopic common bile duct exploration: its advantages and a meta-analysis[J]. Surg Endosc, 2018, 32(11): 4363-4376

- patients[J]. *Der Urologe*, 2017, 56(3): 390-394
- [16] Kumar S K, Rajkumar V, Kyle R A, et al. Multiple myeloma [J]. *Nat Rev Dis Primers*, 2017, 3(2): 17-20
- [17] Adamik J, Jin S, Sun Q, et al. EZH2 or HDAC1 Inhibition Reverses Multiple Myeloma-Induced Epigenetic Suppression of Osteoblast Differentiation[J]. *Molecular Cancer Research*, 2017, 15(4): 405-417
- [18] Laubach J P, Paba Prada C E, Richardson P G, et al. Daratumumab, Elotuzumab, and the Development of Therapeutic Monoclonal Antibodies in Multiple Myeloma [J]. *Clinical Pharmacology & Therapeutics*, 2017, 101(1): 81-88
- [19] Fairfield H, Falank C, Avery L, et al. Multiple myeloma in the marrow: pathogenesis and treatments [J]. *Annals of the New York Academy of Sciences*, 2016, 1364(1): 32
- [20] Haydaroglu H, Oguzkan B S, Pehlivan S, et al. Effect of Cytokine Genes in the Pathogenesis and on the Clinical Parameters for the Treatment of Multiple Myeloma [J]. *Immunological Investigations*, 2016, 46(1): 10-21
- [21] Nas ÖF, İncelikli MF, Hacı Kurt K, et al. Effectiveness of percutaneous vertebroplasty in patients with multiple myeloma having vertebral pain[J]. *Diagnostic & Interventional Radiology*, 2016, 22(3): 263-268
- [22] Jurczyszyn A, Czepko R, Banach M, et al. Percutaneous Vertebroplasty for Pathological Vertebral Compression Fractures Secondary to Multiple Myeloma - Medium-Term and Long-Term Assessment of Pain Relief and Quality of Life [J]. *Advances in clinical and experimental medicine: official organ Wroclaw Medical University*, 2015, 24(4): 651
- [23] Kastiris E, Melea P, Bagratuni T, et al. Genetic factors related with early onset of osteonecrosis of the jaw in patients with multiple myeloma under zoledronic acid therapy [J]. *Leukemia & Lymphoma*, 2017, 58(10): 2304-2309
- [24] Sanfilippo K M, Gage B, Luo S, et al. Comparative effectiveness on survival of zoledronic acid versus pamidronate in multiple myeloma [J]. *Leukemia & Lymphoma*, 2015, 56(3): 615-621
- [25] Rosen L S, Gordon D, Kaminski M, et al. Zoledronic acid versus pamidronate in the treatment of skeletal metastases in patients with breast cancer or osteolytic lesions of multiple myeloma: a phase III, double-blind, comparative trial[J]. *Cancer Journal*, 2015, 7(5): 377
- [26] Liang L, Chen X, Jiang W, et al. Balloon kyphoplasty or percutaneous vertebroplasty for osteoporotic vertebral compression fracture? An updated systematic review and meta-analysis [J]. *Annals of Saudi Medicine*, 2016, 36(3): 165
- [27] Luedders D W, Steinhoff J, Thill M, et al. Lack of difference in acute nephrotoxicity of intravenous bisphosphonates zoledronic Acid and ibandronate in women with breast cancer and bone metastases[J]. *Anticancer Research*, 2015, 35(3): 1797-802
- [28] Wang H, Hu Z H, Chen L, et al. Influence of history of oral bisphosphonates on the incidence rate of fever after intravenous injection of zoledronic acid in patients with osteoporosis[J]. *Journal of Peking University Health sciences*, 2016, 48(1): 680
- [29] Dimopoulos M A, Goldschmidt H, Niesvizky R, et al. Carfilzomib or bortezomib in relapsed or refractory multiple myeloma (ENDEAVOR): an interim overall survival analysis of an open-label, randomised, phase 3 trial[J]. *The Lancet. Oncology*, 2017, 18(10): 1327
- [30] Sebastian R D P, Cleynen A, Fontan C, et al. Genomics of Multiple Myeloma[J]. *Journal of Clinical Oncology*, 2017, 35(9): 963-967

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- [25] Park CH. The Management of Common Bile Duct Stones[J]. *Korean J Gastroenterol*, 2018, 71(5): 260-263
- [26] Gillaspie DB, Davis KA, Schuster KM. Total bilirubin trend as a predictor of common bile duct stones in acute cholecystitis and symptomatic cholelithiasis[J]. *Am J Surg*, 2019, 217(1): 98-102
- [27] Zulli C, Grande G, Tontini GE, et al. Endoscopic papillary large balloon dilation in patients with large biliary stones and periampullary diverticula: Results of a multicentric series [J]. *Dig Liver Dis*, 2018, 50(8): 828-832
- [28] Zhu J, Sun G, Hong L, et al. Laparoscopic common bile duct exploration in patients with previous upper abdominal surgery[J]. *Surg Endosc*, 2018, 32(12): 4893-4899
- [29] Li S, Su B, Chen P, et al. Risk factors for recurrence of common bile duct stones after endoscopic biliary sphincterotomy[J]. *J Int Med Res*, 2018, 46(7): 2595-2605
- [30] Li T, Wen J, Bie LK, et al. Long-term outcomes of endoscopic papillary balloon dilation for removal of bile duct stones in Billroth II gastrectomy patients [J]. *Hepatobiliary Pancreat Dis Int*, 2018, 17(3): 257-262
- [31] He MY, Zhou XD, Chen H, et al. Various approaches of laparoscopic common bile duct exploration plus primary duct closure for choledocholithiasis: A systematic review and meta-analysis [J]. *Hepatobiliary Pancreat Dis Int*, 2018, 17(3): 183-191