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困难胆管插管的处理进展

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Advances in management of difficult biliary access

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Abstract

Since the first report of endoscopic retrograde cholangio-pancreatography (ERCP) in 1986 for the diagnosis of biliary-pancreatic disease, ERCP has become an

important means for the diagnosis and treatment of biliary-pancreatic disease. At present, although the success rate of endoscopic selective biliary cannulation is more than 90%, there are still 5%-10% of cases with failed cannulation, for which assistive technology is needed as a supplementary to achieve successful cannulation. Repeated attempts correlate with a higher success rate of cannulation, but also extend the operating time and increase the incidence of complications. In recent years, the concept of difficult biliary cannulation has been put forward and gradually accepted by endoscopic physicians. In the cases of difficult biliary cannulation, endoscopic physicians can adjust the cannulation strategy in time to improve the success rate and reduce the complication rate. This paper summarizes the literature published recently to make a systematic review of the advances in the management of difficult biliary cannulation.

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Key Words: Endoscopic retrograde cholangio-pancreatography; Difficult biliary cannulation; Treatment strategy

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摘要

自1986年首次报道经内镜逆行性胰胆管造影术(endoscopic retrograde cholangio-pancreatography, ERCP)用于诊断胆胰疾病以来, ERCP技术不断开展、成熟现已成为胆胰疾病诊治的重要方法。目前内镜医师选择性胆管插管成功率可达90%以上,但仍存在5%-10%的插管失败病例,这些病例需借助其

他技术才能实现成功插管. 反复尝试乳头插管在提高插管成功率的同时亦延长ERCP操作时间并且增加手术并发症的发生率. 近年来国内外专家提出困难胆管插管的概念逐渐被内镜医师接受, 对于困难胆管插管的病例, 内镜医师可及时调整插管策略以提高胆管插管成功率并减少并发症的发生. 本文综合近年来国内外已发表的相关文献, 拟对困难胆管插管的处理进展进行系统综述.

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关键词: 经内镜逆行性胰胆管造影术; 困难胆管插管; 处理策略

核心提要: 本文总结了经内镜逆行性胰胆管造影术(endoscopic retrograde cholangio-pancreatography, ERCP)困难胆管插管的多种应对策略, 包括胰管导丝辅助技术、乳头预切开技术以及重复ERCP、超声内镜-胆汁引流等技术, 详细介绍了这些辅助插管技术成功率及并发症的发生情况, 帮助内镜医师及时、合理调整插管策略.

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0 引言

内镜医师需经过一系列严格的专业培训后才能独立操作经内镜逆行性胰胆管造影术(endoscopic retrograde cholangio-pancreatography, ERCP), 美国消化内镜协会对于ERCP受训者的要求为选择性插管成功率>80%, 而有经验的医生选择性插管成功率在90%-95%以上, 相对受训者而言尝试插管次数减少, 操作时间缩短^[1-3]. 即使是有经验的内镜医生, 仍有5%-10%的病例常规选择性插管失败^[4,5]. 目前不同的指南对于困难胆管插管的定义有差异, 2016年国际困难胆管插管指南^[6]的定义为: 在标准的ERCP操作中, 10 min内或5次选择性胆管插管不能成功, 或无法接近主乳头. 而欧洲胃肠内镜学会的官方声明则把尝试插管时间限定在5 min内, 并且将导丝意外进入胰管及胰管意外显影作为评判指标^[7]. 其主要依据为绝大多数(97.4%)的病例能在5次内实现深插管, 而第5次尝试乳头插管后引起ERCP术后胰腺炎(post-ERCP pancreatitis, PEP)的发生率由6.1%提升至11.9%. 尝试插管5 min后PEP并发症发生率由2.6%提升至11.8%, 但插管成功率并未显著升高^[8]. 而国内Pan等^[9]在探索ERCP技术培训中给予学员尝试插管时间分别为5、10、15 min并对比其在插管成功率及并发症情况, 发现

给予学员插管时间由5 min提升到10 min时, 插管的成功率由43.8%提升到75.0%, 并发症差别无统计学意义. 以上两种定义均有其支持依据, 困难插管这一概念的提出有利于内镜医师及时调整困难胆管插管病例的插管策略, 提高插管成功率并降低并发症的发生.

1 困难胆管插管的影响因素

影响胆管插管成功率的因素包括十二指肠乳头形态及位置的异常、壶腹部恶性肿瘤、胆总管末端狭窄、上消化道术后解剖异常等患者自身因素及内镜操作者的熟练程度、手术器材、操作方法等因素. 术前完善磁共振胰胆管成像等影像学检查, 可根据其检查结果及测量相关解剖指标来预测ERCP胆管插管难易程度, 为患者选择最优良、最合理的插管方案, 可在一定程度上避免ERCP失败及不良事件的发生^[10].

2 困难胆管插管的处理方法

2.1 合适的导丝与内镜 目前越来越多的证据表明使用导丝辅助技术进行选择胆管插管能有效提高插管成功率并降低PEP等并发症的发生率^[11]. 不同的导丝对选择性胆管插管亦有影响, 国外的两项随机对照研究^[12,13]表明刚性轴、柔软尖端的导丝较普通的镍钛导丝的首次插管成功率更高, 手术操作总时长更短, 相对而言并发症发生率更低. 而新一代的刚性轴、柔软尖端的导丝代表GW VisiGlide 2 TM对比GW VisiGlide TM而言, 在ERCP手术成功率、操作时长、并发症发生率上更具优势^[14]. 除导丝可影响插管成功率之外, 国外亦有报道^[15]15°后斜视角十二指肠镜较5°后斜视角十二指肠镜而言, 前者导管与镜身形成的视角更有优势, 选择性胆管插管成功率更高(85.6% vs 56.2%), 但在5°后斜视角十二指肠镜调节导管角度后两者插管成功率接近(88.9% vs 78.7%). 当然, 选择合适的导丝及内镜于提高选择性插管的成功率有限, 对于困难胆管插管, 尝试其他辅助插管的方法价值更大.

2.2 胰管导丝辅助法 在尝试胆管插管时, 如导丝反复进入胰管, 可保留胰管内导丝并通过胰管导丝辅助的方法提高插管成功率, 其主要的方法包含: 单导丝技术(single-guidewire technique, SGT)、双导丝技术(double-guidewire technique, DGT)、胰管支架占据法. 导丝进入胰管后, 沿活检通道送入套管继续尝试胆管插管为SGT, 由于放置胰管导丝后乳头位置相对固定, 胆管被胰管导丝拉直, 使插管更容易. 常规插管失败后约有70%-80%病例可在SGT协助下成功插管^[16,17]. DGT是在放置胰管导丝的基础上沿活检通道送入另外一根导丝, 并通过此导丝引导下继续尝试胆管插管. 目前报

道DGT的插管成功率较SGT高而两者并发症的发生率相当, 可作为SGT的替代方法^[18]。国外的一项回顾性研究^[19]表明, 标准插管失败后使用DGT能显著提高插管成功率(91%), 但不增加PEP的发生率, 相比其他预切开技术而言DGT可减少术后胆管炎的发生并缩短患者住院时间。总体来说DGT是一项有效、安全的困难胆管插管辅助方法。DGT的操作难度相对较小, 学习周期短, 且能减少了诸如乳头括约肌切开等创伤性技术的使用, 有专家建议将DGT作为标准插管失败后的首选辅助插管方案^[18]。

胰管导丝对胰管的损伤及反复胰管开口操作增加了PEP发生的风险, 国外一项Meta分析^[20]结果提示困难胆管插管单独使用DGT时倾向于增加PEP发生风险, 放置胰管支架(pancreatic duct stenting, PDS)可降低PEP的发生率, 欧洲胃肠内镜学会亦建议DGT辅助插管后常规放置PDS以减少PEP的发生^[7]。但目前报道DGT辅助插管以发生轻度PEP为主, 中重度PEP极少, 且这些病例经保守治疗后均能好转出院^[20], 从临床经济学角度考虑是否所有使用DGT的病例均需常规放置PDS仍需更多的随机、多中心研究证实。

胰管支架占据法为保留胰管导丝后沿导丝植入PDS占据胰管, 撤出胰管导丝继续行选择性胆管插管, 这种方法可有效减少导丝意外进入胰管并降低PEP的发生风险, 其插管成功率与DGT相近^[21]。

2.3 乳头预切开术 标准插管失败后, 也可尝试乳头括约肌切开的辅助技术协助插管。如导丝可进入胰管, 通过导丝送入弓形切开刀至胰管开口处, 沿11-12点方向进行胆胰管隔膜切开, 即经胰管乳头括约肌切开术(trans-pancreatic sphincterotomy, TPS)。进行TPS操作时切开刀的两端相对固定, 操作相对容易控制, TPS对于内镜医师的技术要求相对宽松。而对于一些乳头开口处病变, 导丝无法进入胆胰管的病例行针状刀辅助的乳头肌切开则更为合适, 按照针状刀切开的程度可分为针状刀乳头切开术(needle-knife papillotomy, NKP)及针状刀开窗术(needle-knife fistulotomy, NKF), NKP为针刀在乳头开口处沿11-12点方向由浅入深逐层切开乳头黏膜层, 暴露壶腹括约肌, 寻找胆管开口。NKF则是从乳头外上方, 沿乳头方向逐层切开。NKF可在直视下逐层切开十二指肠乳头, 操作过程中可根据操作需要对切开的部位、方向实时调整以达到最好的切开效果。其远端相对游离, 技术难度相对较大, 需高年资内镜医师参与完成。目前国内外报道3种预切开方式的总插管成功率均在90%以上, 其并发症发生率均在可以接受的范围内, 是较为安全的困难胆管插管的辅助插管方式^[22]。目前在国内外报道中并未将NKF\NKP这两种技术严格的区分, 在总体插管成功率上NKP\NKF

无明显差异, 但NKF较少触碰到胰管开口处, 在PEP的发生率上较NKP、TPS低^[23]。国外的两项Meta分析^[24,25]研究表明早期行乳头预切开更倾向于减少PEP的发生, NKP以及TPS在PEP及其他并发症的总体发生率并无明显差异, 但NKP对比TPS仍有较为显著的出血发生率, 穿孔及其他并发症发生率无明显差异。而另一项回顾性研究^[26]发现ERCP术后穿孔的大部分病人(75.4%)与使用针刀预切割技术有关, 使用针刀切割技术是ERCP术后穿孔的独立危险因素。鉴于各个研究中心对于针状刀使用的技术水平存在明显差异, 技术偏倚不可避免, 单中心的研究以及Meta分析不同研究中心结果之间的相互影响导致其结论真实性下降, 这些结论仍需要更多的随机、多中心临床研究证实。

目前对于可放置胰管导丝的病例, 行预切开的时机尚存在争议。部分专家推荐早期乳头预切开协助插管, 另一些则更倾向于胰管导丝辅助的方法作为一线解救方案, 失败后再行乳头切开作为二线方案协助插管^[27]。一项回顾性研究^[28]结果表明相比DGT, 早期NKP的插管成功率更高(79.1% vs 44.8%), 其平均插管时间(257 s vs 312 s)以及PEP发生率明显低于DGT组(4.5% vs 14.9%)。尝试导丝技术与预切开技术的组合, 如DGT-TPS/NKP顺序插管能提高插管成功率, 但技术组合的病例PEP发生率较单独使用预切开技术时更高^[29-31]。亦有专家^[32]尝试早期置入PDS, 以PDS为引导继续行针刀乳头切开术, 这种方法较单纯NKP插管成功率更高(96.9% vs 86.1%)并降低了PEP的发生率(19.4% vs 6.1%)。

在一些特定乳头条件下, NKP与TPS的选择尚有指征可循, 但在导丝无意进入胰管后, 是继续送切开刀行TPS, 还是抽出导丝行NKP亦是值得考虑的问题^[33]。目前尚有报道^[34,35]TPS/NKP联合行乳头切开协助插管的病例, 两种技术联合后成功率较单一技术提高, 但在已切开乳头基础上再尝试其他切开技术必然增加其发生出血、穿孔等并发症的风险。目前在NKP失败后是否尝试胰管导丝辅助等其他经典辅助插管方法仍缺乏研究结论支持, 选择早期预切开以减少并发症还是多种辅助方法组合来提高成功率仍需更多研究结果支持。

2.4 其他辅助技术 首次ERCP失败后, 择期重复ERCP为可选的解救方法, 据报道首次ERCP失败后重复ERCP插管总成功率可达75%-88.2%, 重复ERCP的成功率似乎与间隔时间有关系, 间隔时间充分时成功率更高^[36-38]。

随着超声内镜(endoscopic ultrasonography, EUS)技术的发展, 目前已能够在实时EUS引导下经胃或十二指肠行胆管穿刺送入导丝, 置入引流支架行EUS引导下的胆汁引流(endoscopic ultrasound-guided biliary drainage, EUS-BD); 如导丝送入胆管后顺行通过十二

指肠乳头到达十二指肠腔, 可通过此导丝完成ERCP后续操作, 称为EUS引导的汇合技术^[39]. 国外的一篇Meta分析^[40]报道了ERCP失败后EUS-BD引流成功率达90.91%, 术后总的并发症发生率为16.46%, 主要的并发症为出血、胆汁瘤、感染、胆漏以及术后胰腺炎. 另一项研究^[41]结果提示ERCP失败后EUS-BD成功率为95.0%, 这与ERCP成功率相当(95.6%), 但其总体并发症发生率大于ERCP(22.5% vs 14.5%), 所以目前EUS-BD仍作为ERCP失败后的解救方案. 但EUS-BD相对于ERCP而言操作部位、方式更灵活, 随着技术的不断进步及相关并发症的有效控制, EUS-BD有望成为部分可预见的困难胆管插管的一线治疗方案.

经皮经肝胆管引流(percutaneous trans-hepatic biliary drainage, PTBD)为成熟的胆汁引流方法, 研究报道其成功率与EUS-BD相当, 国外的两项Meta分析^[40,42]研究报道PTBD相比EUS-BD其总体不良事件发生率(感染、胆漏等)及中重度不良事件的发生率更高, 安全性不如EUS-BD, 且EUS-BD需要再次干预的发生率及住院时间较PTBD少^[43]. 此外, 在肝内胆管未充分扩张时, PTBD进行的难度更大, 这限制了PTBD在部分困难胆管病例中的应用. 在ERCP失败后, 更多研究结论支持EUS-BD作为解救方案.

3 结论

随着ERCP技术的发展, ERCP的适应证的不断扩大, 越来越多的胆胰疾病患者通过ERCP治疗获益, 然而仍有部分病例无法顺利实现选择性胆管插管. 通过选择合适的器材以及胰管导丝辅助、乳头括约肌预切开等辅助方法可有效提高插管成功率并减少不良事件的发生. 即使首次ERCP失败, 仍可通过重复ERCP或运用EUS-BD及PTBD等方法进行解救. 这些方法的实施可有效解决难以实现胆管插管导致后续治疗无法顺利进行的问题. 内镜医师熟知这些方法, 并在临床工作中合理应用能使患者获益更多.

文章亮点

背景资料

选择性胆管插管是经内镜逆行性胰胆管造影术(endoscopic retrograde cholangio-pancreatography, ERCP)的首要步骤, 即使是有经验的内镜医师, 仍存在5%-10%的插管失败病例. 近年来国内外专家提出了困难胆管插管的界定标准, 建议及时启动对这部分病例的辅助插管技术以提高插管成功率, 并减少反复插管及操作时间过长所致并发症的风险.

研发前沿

补救性超声内镜引导下的胆汁引流(endoscopic ultrasound-guided biliary drainage, EUS-BD)成功率与ERCP成功率相近, 但其总体并发症发生率大于ERCP. 相对于ERCP而言EUS-BD操作部位、方式更灵活, 随着技术的不断进步及相关并发症的有效控制, EUS-BD可能成为部分可预见的困难胆管插管的一线治疗方案.

相关报道

胰管导丝对胰管的损伤及反复胰管开口操作增加了ERCP术后胰腺炎(post-ERCP pancreatitis, PEP)发生的风险. 国外一项Meta分析结果提示单独使用双导丝技术(double-guidewire technique, DGT)时较常规插管PEP发生率明显增加, 放置胰管支架可降低PEP的发生率, 目前欧洲胃肠内镜学会亦建议DGT法辅助插管后常规放置PDS以减少PEP的发生.

创新盘点

困难胆管插管的定义在近年来逐渐被广泛接受, 本文系统阐述了国内外专家对困难胆管插管的定义标准, 并详细地介绍了困难插管的几种辅助插管策略及这些方法各自的成功率、并发症的最新进展.

应用要点

按照循证医学标准界定困难胆管插管有助于ERCP技术进一步规范化, 熟知困难胆管插管的应对策略是内镜医师的必然要求. 严格掌握各项技术的指征, 适时调整插管策略, 对于内镜医师提高ERCP成功率以及减少不良事件发生率有重要意义.

名词解释

双导丝技术: 常规乳头插管导丝意外进入胰管时, 留置胰管导丝, 沿活检通道继续送入另一根导丝继续尝试胆管插管的技术.

同行评价

本文对困难胆管插管的处理进展进行了系统综述, 有助于内镜医师及时调整插管策略以提高胆管插管成功率并减少并发症的发生, 对内镜医师碰到困难胆管插管时合理选择处理方法有一定指导意义, 对临床有较好的应用价值.

同行评议者

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