

水下内镜下黏膜切除术治疗十二指肠降部平坦型息肉1例并文献复习

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收稿日期: 2024年12月13日; 录用日期: 2025年1月6日; 发布日期: 2025年1月16日

摘 要

目的: 探讨水下内镜下黏膜切除术(UEMR)治疗十二指肠平坦型病变的效果。方法: 回顾性分析青岛大学附属医院消化内科收治的1例十二指肠降部平坦型息肉病例的临床、内镜特点及其内镜治疗结果。结果: 60岁女性因常规查体行胃镜检查, 白光内镜十二指肠降部见约10 × 8 mm低平隆起, NBI结合放大胃镜显示病变边界清晰, 微血管及微结构欠规则。行UEMR完整切除病变, 术后病理为管状腺瘤, 无并发症发生。结论: UEMR操作简单, 完整切除率高, 术后并发症少, 复发率低, 可作为内镜下切除十二指肠平坦型病变简单、安全、有效的方法进行临床推广。

关键词

内镜下黏膜切除术, 内镜下黏膜下层剥离术, 水下内镜下黏膜切除术, 完整切除

Underwater Endoscopic Mucosal Resection for the Treatment of Flat Duodenal Descending Polyps in a Case with Literature Review

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Received: Dec. 13th, 2024; accepted: Jan. 6th, 2025; published: Jan. 16th, 2025

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文章引用: 李育蓓, 尹晓燕, 胡晓飞, 崔铮, 陈浩, 王士东. 水下内镜下黏膜切除术治疗十二指肠降部平坦型息肉 1 例并文献复习[J]. 临床医学进展, 2025, 15(1): 493-499. DOI: 10.12677/acm.2025.151067

Abstract

Objective: To evaluate the therapeutic efficacy of underwater endoscopic mucosal resection (UEMR) in the management of duodenal flat lesions. **Methods:** We present a case study involving a patient with a flat polyp in the descending duodenum who was admitted to the Gastroenterology Department of the Affiliated Hospital of Qingdao University. A retrospective analysis was conducted to examine the patient's clinical presentation, endoscopic characteristics, and outcomes following endoscopic treatment. **Results:** A 60-year-old woman underwent gastroscopy due to routine checkup, and about 10×8 mm low flat bulge was seen in the descending part of duodenum under white light endoscopy, and NBI combined with magnified gastroscopy showed that the lesion had clear boundaries, and microvessels and microstructures were under-regularized. UEMR was performed for complete resection of the lesion, and the postoperative pathology was tubular adenoma without complications. **Conclusion:** UEMR is simple to operate, with a high rate of complete resection, few postoperative complications, and a low recurrence rate, and can be clinically promoted as a simple, safe, and effective method for endoscopic resection of duodenal flat lesions.

Keywords

Conventional Endoscopic Mucosal Resection, Endoscopic Submucosal Dissection, Underwater Endoscopic Mucosal Resection, Complete Resection

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1. 引言

十二指肠恶性肿瘤发病率较低, 只占消化道恶性肿瘤的 0.3%, 随着内镜检查技术的提高, 早期十二指肠癌及癌前病变的检出率逐渐提升[1]。内镜治疗是目前治疗早期十二指肠癌及癌前病变的主要方式, 传统内镜下黏膜切除术(conventional endoscopic mucosal resection, CEMR)是一种有效的内镜下切除病变的方法, 但是其黏膜下注射环节导致扁平的病变切除较为困难, 完整切除率较低[2][3]。内镜下黏膜下层剥离术(endoscopic submucosal dissection, ESD)凭借其较高的完整切除率成为消化道早癌的主要治疗方式, 然而由于十二指肠复杂的解剖学特征、狭窄的管腔和陡峭的曲率难以提供一个较为充分的视野[4], 导致十二指肠 ESD 操作难度大, 术后并发症发生率较高, 特别是十二指肠降部 ESD 难以被大多数内镜医生掌握。水下内镜下黏膜切除术(underwater endoscopic mucosal resection, UEMR)是一种无需向肠腔内注气且无需黏膜下层注射, 仅通过向肠腔内注水便可通电切除病变的技术[3], UEMR 具有操作简单、可提高患者舒适度、完整切除率高等优势, 目前越来越多被应用于消化道平坦型病变的内镜治疗, 国内关于 UEMR 治疗十二指肠降部平坦型病变的报道较少, 本文报道 1 例采用 UEMR 成功治疗十二指肠平坦型息肉的病例, 探讨该治疗方式治疗十二指肠平坦型病变的优势和临床治疗效果, 为十二指肠平坦型病变治疗提供新的思路及方法。

2. 病例资料

患者, 女, 60 岁, 因“查体发现十二指肠降部病变 1 周”于 2024 年 8 月 12 日至青岛大学附属医院消化内科就诊。既往体健。入院后查体: T: 36.5℃; R: 20 次/分; P: 58 次/分; BP: 126/76 mmHg。皮

肤巩膜无黄染，心肺查体无明显阳性体征，腹软，无压痛、反跳痛，肝脾未触及肿大，肠鸣音正常。外院胃镜：十二指肠降部见约 10×8 mm 低平隆起，表面粗糙，考虑诊断十二指肠降部癌前病变，未活检，建议内镜治疗。入院后完善血常规、血凝常规、肝肾功、肿瘤标记物，心电图、心脏超声、胸、腹部 CT 均无明显异常。

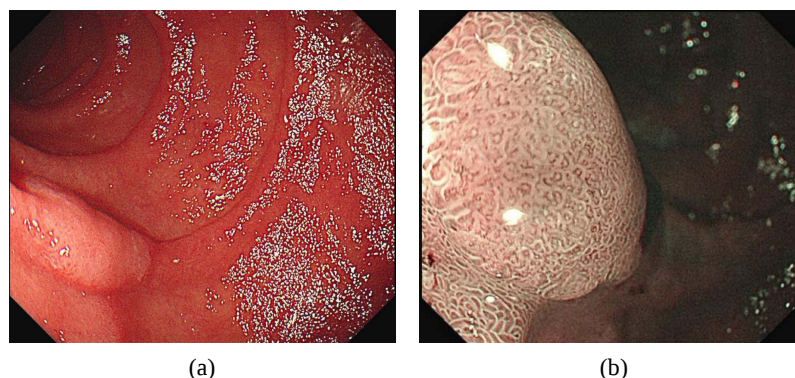


Figure 1. Endoscopic findings. A 10×8 mm low flat elevation with white color and flat surface is seen in the descending part of the duodenum (a). NBI combined with magnified endoscopy shows clear borders with irregular microvessels and microstructures (b)

图 1. 胃镜检查结果。白光内镜十二指肠降部可见 10×8 mm 低平隆起，色白，表面平坦(a)。NBI 结合放大内镜显示边界清，微血管及微结构欠规则(b)

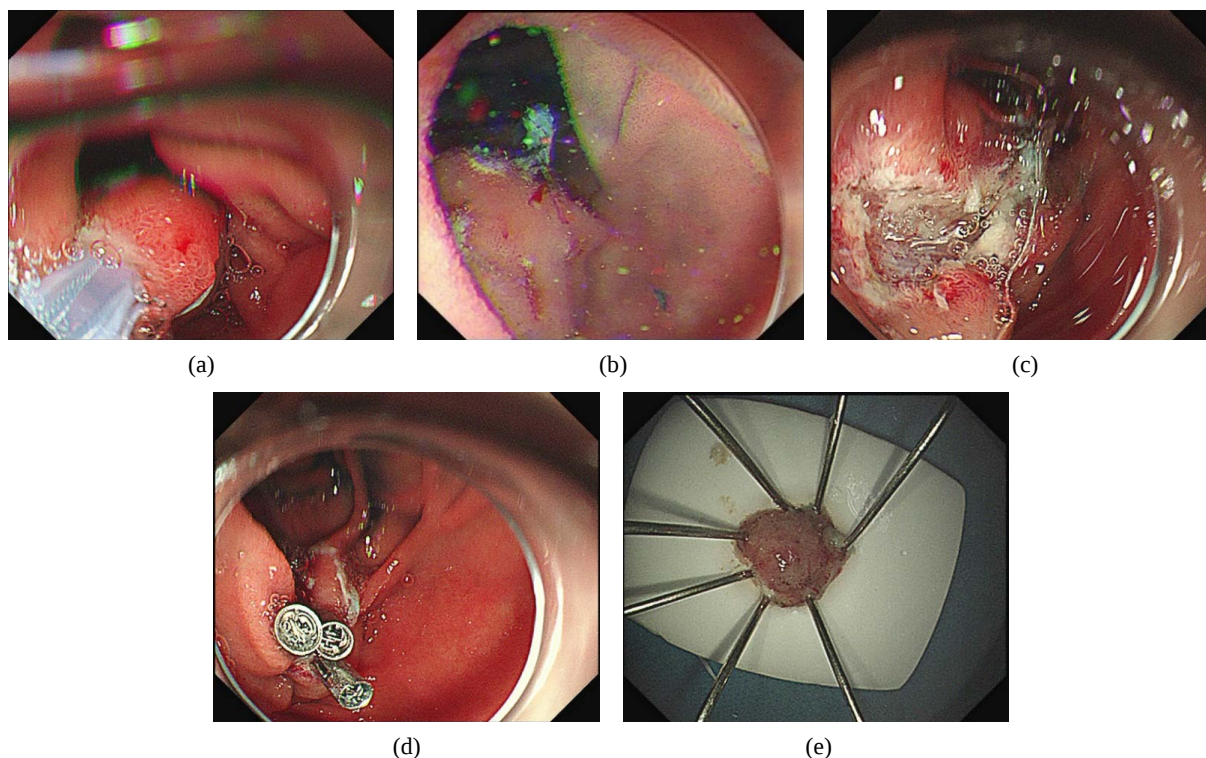


Figure 2. Underwater endoscopic mucosal resection. Water is injected into the duodenal lumen after full inspiration so that the lesion is completely under water (a), a loop snare is applied so that the lesion can be completely removed (b) (c), the trauma is closed with three harmonic clips (d), and the specimen is secured and sent for examination (e)

图 2. 水下内镜下黏膜切除术。充分吸气后向十二指肠腔内注水使病变完全进入水中(a)，圈套器套取病变使病变能被完整切除(b) (c)，创面以三枚和谐夹夹闭(d)，标本被固定送检(e)

该患者病变位于十二指肠降部,平坦,外院考虑诊断癌前病变,与患者及家属沟通后于 2024.8.13 进行放大内镜检查及水下 EMR 治疗。胃镜显示十二指肠降部见约 $10 \times 8 \text{ mm}$ 低平粘膜隆起,色白,表面平坦,与周围粘膜分界清楚,NBI 结合放大胃镜显示病变边界清晰,微血管及微结构欠规则(图 1)。以圈套器头端沿病变边缘标记,充分吸气后十二指肠降部腔内注水,完全淹没病变,圈套器套取病变水中电凝切除,创面洁净,无出血及穿孔,以和谐夹封闭创面,预防迟发出血及穿孔,切除标本回收送检(图 2)。患者术后禁饮食 12 小时,流质饮食 2 天,PPI 及补液治疗,无腹痛、发热、呕血、黑便等情况,术后第二天带药出院。术后病理:管状腺瘤,四周及基底切缘(-),免疫组化:MLH1(+),MSH2(+),p53(+,约 20%),CK-Desmin 示粘膜肌层连续(+),HER2(0),S100(-),CD31(-),D2-40(-),Ki-67(+,约 30%),MSH6(+),PMS2(+).

3. 讨论

十二指肠肿瘤的发病率较低,随着内镜诊断水平的不断提高,浅表非壶腹十二指肠上皮肿瘤的检出率不断增加[5]。大多数十二指肠腺瘤的患者没有临床症状,病变通常是在内镜下评估其他胃肠道问题时偶然发现的。本病例患者同样无特殊临床表现,因常规胃镜检查发现十二指肠病变。传统白光内镜下,十二指肠腺瘤一般为扁平或是无蒂的,且有白色绒毛状外观,大多位于十二指肠降部的后壁或侧壁,壶腹水平或下方[6]。在本病例中,病变位于十二指肠降部侧壁,为平坦型白色调病变,与既往病例报道一致。

在内镜技术普及之前,十二指肠降部病变大多需采用外科手术切除,手术创伤大,并发症发生率高[7],随着内镜技术的发展,内镜下切除逐渐代替外科手术成为主要治疗方式[8]。20 世纪 70 年代 CEMR 的使用首次被提出[9],CEMR 是一种通过黏膜下注射将病变与固有肌层分开后使用圈套器切除病变的技术。目前广泛应用于消化道息肉,直径小于 2 cm 的消化道早癌及癌前病变的治疗,具有操作简单、住院时间短、费用低、并发症少等优势[10],但是黏膜下注射增加了病变的表面张力,导致平坦型病变套取困难,完整切除率较低。CEMR 的完整切除率受病变部位、形态、大小的影响,据相关文献报道,CEMR 的完整切除率在 79%~100%之间[11]。整块切除是内镜下治疗理想的结果,能够确保获取一个完整且未经破坏的组织样本,对于后续病理学分析而言至关重要[12]。既往的回顾性研究结果显示,EMR 对于直径大于 2 cm 的病变大多采用分片切除(EMPR) [13]-[15]。EMPR 无法获得精确的组织病理学评估结果[17]-[19],并且可能会导致较高的复发率及并发症发生风险[16],既往文献报道,CEMR 的术后复发率高达 15%~55% [20]。此外,十二指肠的粘膜和粘膜下层都很薄,由于活检引起的粘膜下层纤维化导致 CEMR 亦无法切除相对较小的病变[21]。

ESD 作为内镜下治疗消化道病变的微创手术,经过数年的发展,其技术已日渐成熟[11],ESD 具有完整切除率高,术后复发率低等优势[22],目前,国际多项指南及共识均推荐 ESD 作为早期消化道癌的首选治疗方式。然而,十二指肠的 C 字走形、狭窄的管腔、腹膜后的固定位置等特点给 ESD 带来挑战[23]。Joana Marques 等人总结既往关于十二指肠腺瘤的研究报道,ESD 的完整切除率为 86%~100%,出血率为 8%~22% (CEMR 为 0%~12%),穿孔率为 31% (CEMR 为 0.6%) [11]。Shu Hoteya 等人的研究入组了 41 名浅表非壶腹十二指肠腺瘤的患者,有 16 名(39%)患者因行 ESD 而出现了穿孔,与 Joana Marques 总结的穿孔率相仿,此外,在他们的研究中迟发性出血率为 18% [24]。Zhengqi Li 等人的研究结果显示,对于浅表非壶腹十二指肠腺瘤的治疗,ESD 较长的手术时间是导致出血和穿孔的风险较 EMR 增加的原因[23]。

UEMR 是一种改良 EMR 方法,最早由 Binmoeller 等人于 2012 年提出,无需黏膜下注射,通过排除肠腔内的空气,然后向肠腔内注入 500~1000 ml 的无菌水直至管腔完全充满,使用氩离子血浆凝固术(APC)

对边缘进行透热标记, 打开圈套器并定位包括由透热点识别的边缘处的正常粘膜。使用扭矩和卷曲技术来最大限度地捕获组织: 将打开的圈套器推至与肠壁齐平并扭转以接合组织褶皱, 关闭圈套器并施加纯切割电流以横断捕获的组织, 沿同一切除平面逐段切除息肉的相邻部分后使用圈套器切除病变, 用热活检钳凝固出血血管并对切除边缘进行四象限活检。最后用内窥镜夹闭合切除缺损[3]。注水后可以消除病变重力的影响, 使套取更为容易。注水后的光学变焦效应放大了病变的黏膜结构从而提高了内镜检查的灵敏度[25], 同时水的散热效应有助于减少手术过程中对切除标本以及深部肌层的热损伤, 有助于减轻患者的疼痛。UEMR 的一个缺点是当存在收缩性时, 可见度会受到影响, 这可以通过持续注水来应对[2]。根据目前已有研究结果显示, UEMR 的完整切除率更高且术后并发症发生率更低。Wang 等人应用 UEMR 对 43 例结直肠病变实现了 98% 的完整切除[26]。而后, Spadaccini 等人进行的一项包含 508 例 UEMR 的荟萃分析结果显示, UEMR 对于结直肠病变的完整切除率为 96.36%, 迟发性出血率在 2.85%, 无穿孔[27]。Andrew Nett 等人总结了 500 例 UEMR 的结果, 迟发性出血率在 0.5%~6.7% 之间[22]。Aneesa Rahman Chowdhury 等人进行的一项荟萃分析结果显示, UEMR 对于结直肠病变的整块切除率明显高于 CEMR [28]。对于大病变的整块切除能力的提高是 UEMR 在 CEMR 上的最大改进, 与 ESD 的整块切除率相当, 但是术后并发症发生率远低于 ESD [22]。在 UEMR 治疗浅表非壶腹十二指肠腺瘤方面, Neil Bhogal 等人于 2020 年进行的一项荟萃分析结果显示, 治疗成功率为 89.9%, 6.9% 的患者出现了术后并发症, 大多为迟发性出血, 术后无穿孔[29]。这些不同的荟萃分析结果大都无穿孔并发症的发生, 或许可以说明 UEMR 的主要术后并发症出血, 使用 UEMR 导致穿孔的后果是否与 EMR 穿孔的后果相同尚不清楚, 可以通过使用无菌水作为一种预防措施[2]。对于创面可见的小血管行 APC 术或用热活检钳夹闭, 创面较大者则用钛夹夹闭创面, 可作为减少术后迟发性出血的预防措施[31]。而后, 在 2023 年 Jixiang Liu 等人进行的另一项荟萃分析结果显示, UEMR 对于十二指肠病变的整块切除率为 88.2%, 迟发性出血的发生率为 8.9%, 术中无穿孔[30]。目前, 国内关于 UEMR 的文献报道较少, 并且主要集中于结肠病变的治疗。在本案例中, 我们采用水下 EMR 方法成功切除了十二指肠降部平坦型息肉, 手术耗时短, 病理证实为完整性切除, 无并发症发生, 患者术后恢复快, 生活影响小。

4. 结论

UEMR 是一种具有潜在优势的内镜技术, 既可以克服 CEMR 的局限性, 实现较高的完整切除率、整块切除率, 又可以弥补 ESD 术后并发症发生率较高、操作难度大等不足, 对于十二指肠平坦型病变是一种有效、安全、易于学习的内镜下治疗方法, 值得临床进一步推广应用。

声 明

该病例报道已获得病人的知情同意。

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