

ISSN 1009-3079 (print)
ISSN 2219-2859 (online)

世界华人消化杂志®

WORLD CHINESE JOURNAL OF DIGESTOLOGY

Shijie Huaren Xiaohua Zazhi

2020 年 11 月 28 日 第 28 卷 第 22 期 (Volume 28 Number 22)



22 / 2020

《世界华人消化杂志》是一本高质量的同行评议、开放获取和在线出版的学术刊物。本刊被国际检索系统《化学文摘(Chemical Abstracts, CA)》、《医学文摘库/医学文摘(EMBASE/Excerpta Medica, EM)》、《文摘杂志(Abstract Journal, AJ)》、Scopus、中国知网《中国期刊全文数据库(CNKI)》、《中文科技期刊数据库(CSTJ)》和《超星期刊域出版平台(Superstar Journals Database)》数据库收录。

ISSN 1009-3079



9 771009 307056



述评

- 1107 浅谈联合动脉切除的胰腺癌根治术的进展
贾浪, 朱世凯
- 1112 炎症性肠病的发病机制及基于肠道菌群的药物研究策略
廖紫琼, 纪秋风, 周本杰

基础研究

- 1121 翠云草总黄酮对胃癌细胞增殖、凋亡及糖酵解水平的影响
张建海, 俞建洪
- 1128 基于*HOXB8*基因的结直肠癌预后模型及列线图的建立与验证
池强伟, 赵畅, 李绍堂

临床研究

- 1137 无创模型在慢性乙型肝炎肝纤维化诊断中的价值
杨晴, 王岩, 关欣, 谷野, 李鲁平, 戴文颖, 卞丽, 尚宁
- 1145 乳头括约肌不同大小切开联合大气囊扩张术对胆总管大结石患者远期结石复发的影响
周盟, 何家俊, 费诗茵, 王婷婷, 陈炜炜, 陈超伍, 刘军

文献综述

- 1150 胰腺癌细胞内吉西他滨耐药机制的研究进展
顾宗廷, 李宗泽, 王成锋
- 1162 水辅助结肠镜的发展现状
沈军权

消 息

- 1111 《世界华人消化杂志》性质、刊登内容及目标
1136 《世界华人消化杂志》正文要求
1161 《世界华人消化杂志》外文字符标准
1166 《肠道微生物与消化系统疾病》书讯

封面故事

闫峰, 男, 主任医师、医学博士、博士后、硕士研究生导师. 厦门市首批创新创业人才, 首批厦门市科技计划杰出青年基金获得者. 中国医师协会结直肠癌专委会委员、中国医师协会肥胖及糖尿病外科医师委员会中青年委员、中国NOSES联盟福建省分会常务理事、福建省肿瘤防治联盟胃癌专委会委员. 《世界华人消化杂志》编委. 在胃肠道肿瘤基础与临床、肿瘤多药耐药相关研究方面成绩突出. 主持国家自然科学基金、中国医学基金会、福建省自然科学基金等课题多项. 发表论文近30篇, 其中SCI收录6篇, 研究成果获厦门市科技进步奖. 擅长胃癌、结直肠癌的腹腔镜微创手术治疗、胃肠间质瘤的手术及靶向治疗、便秘的综合治疗等.

本期责任人

编务 王栋梅; 送审编辑 张晗; 组版编辑 张砚梁; 英文编辑 王天奇;
形式规范审核编辑部主任 吴云晓健; 最终清样审核总编辑 马连生

世界华人消化杂志

Shijie Huaren Xiaohua Zazhi

吴阶平 题写封面刊名

陈可冀 题写版权刊名

(半月刊)

创 刊 1993-01-15

改 刊 1998-01-25

出 版 2020-11-28

原刊名 新消化病学杂志

期刊名称

世界华人消化杂志

国际标准连续出版物号

ISSN 1009-3079 (print) ISSN 2219-2859 (online)

主编

党双锁, 教授, 710004, 陕西省西安市, 西安交通大学医学院第二附属医院感染科

江学良, 教授, 250031, 山东省济南市, 中国人民解放军济南军区总医院消化科

刘占举, 教授, 200072, 上海市, 同济大学附属第十人民医院消化内科

吕宾, 教授, 310006, 浙江省杭州市, 浙江中医药大学附属医院(浙江省中医院)消化科

马大烈, 教授, 200433, 上海市, 中国人民解放军第二军医大学附属长海医院病理科

王俊平, 教授, 030001, 山西省太原市, 山西省人民医院消化科

王小众, 教授, 350001, 福建省福州市, 福建医科大学附属协和医院消化内科

姚登福, 教授, 226001, 江苏省南通市, 南通大学附属医院临床医学研究中心

张宗明, 教授, 100073, 北京市, 首都医科大学北京电力医院普外科

编辑委员会

编辑委员会成员在线名单, 详见:

<https://www.wjgnet.com/1009-3079/editorialboard.htm>

编辑部

马亚娟, 主任

《世界华人消化杂志》编辑部

Baishideng Publishing Group Inc

7901 Stoneridge Drive, Suite 501, Pleasanton,

CA 94588, USA

Telephone: +1-925-3991568

E-mail: wcjd@wjgnet.com

<http://www.wjgnet.com>

出版

百世登出版集团有限公司

Baishideng Publishing Group Inc

7901 Stoneridge Drive, Suite 501, Pleasanton,

CA 94588, USA

Telephone: +1-925-3991568

E-mail: bpgoffice@wjgnet.com

<https://www.wjgnet.com>

制作

北京百世登生物医学科技有限公司
100025, 北京市朝阳区东四环中路
62号, 远洋国际中心D座903室
电话: +86-10-85381892

《世界华人消化杂志》是一本高质量的同行评议, 开放获取和在线出版的学术刊物. 本刊被国际检索系统《化学文摘(Chemical Abstracts, CA)》、《医学文摘库/医学文摘(EMBASE/Excerpta Medica, EM)》、《文摘杂志(Abstract Journal, AJ)》、Scopus、中国知网《中国期刊全文数据库(CNKI)》、《中文科技期刊数据库(CSTJ)》和《超星期刊出版平台(Superstar Journals Database)》数据库收录.

《世界华人消化杂志》正式开通了在线办公系统(<https://www.baishideng.com>), 所有办公流程一律可以在线进行, 包括投稿、审稿、编辑、审读, 以及作者、读者和编者之间的信息反馈交流.

特别声明

本刊刊出的所有文章不代表本刊编辑部和本刊编委会的观点, 除非特别声明. 本刊如有印装质量问题, 请向本刊编辑部调换.

定价

每期136.00元 全年24期3264.00元

© 2020 Baishideng Publishing Group Inc. All rights reserved.



Contents

Volume 28 Number 22 November 28, 2020

EDITORIAL

- 1107 Recent advances in radical resection combined with arterial resection in pancreatic cancer

Jia L, Zhu SK

- 1112 Strategies for inflammatory bowel disease drug research by targeting gut microbiota

Liao ZQ, Ji QF, Zhou BJ

BASIC RESEARCH

- 1121 Effect of total flavones of *Selaginella uncinata* (Desv.) spring on proliferation, apoptosis, and glycolysis in gastric cancer cells

Zhang JH, Yu JH

- 1128 Development and validation of a *HOXB8* gene-based prognostic model and nomogram for colorectal cancer patients

Chi QW, Zhao C, Li S

CLINICAL RESEARCH

- 1137 Evaluation of liver fibrosis by non-invasive diagnostic indexes in patients with chronic hepatitis B

Yang Q, Wang Y, Guan X, Gu Y, Li LP, Dai WY, Bian L, Shang N

- 1145 Effect of different size sphincterotomy combined with large balloon dilatation on long-term recurrence of choledocholithiasis in patients with large common duct stones

Zhou M, He JJ, Fei SY, Wang TT, Chen WW, Chen CW, Liu J

REVIEW

- 1150 Research advances of intracellular mechanisms underlying gemcitabine resistance in pancreatic cancer

Gu ZT, Li ZZ, Wang CF

- 1162 Current status of water-assisted colonoscopy

Shen JQ

Contents

World Chinese Journal of Digestology
Volume 28 Number 22 November 28, 2020

COVER

Editorial Board Member of *World Chinese Journal of Digestology*, Feng Yan, Chief Physician, Associate Professor, Zhongshan Hospital Xiamen University, No. 201, Hubin South Road, Siming District, Xiamen 361004, Fujian Province, China

Indexed/Abstracted by

Chemical Abstracts, EMBASE/Excerpta Medica, Abstract Journals, Scopus, CNKI, CSTJ and Superstar Journals Database.

RESPONSIBLE EDITORS FOR THIS ISSUE

Assistant Editor: *Dong-Mei Wang*

Review Editor: *Han Zhang*

Production Editor: *Yan-Liang Zhang*

English Language Editor: *Tian-Qi Wang*

Proof Editor: *Yun-Xiaojuan Wu*

Layout Reviewer: *Lian-Sheng Ma*

Shijie Huaren Xiaohua Zazhi

Founded on January 15, 1993

Renamed on January 25, 1998

Publication date November 28, 2020

NAME OF JOURNAL

World Chinese Journal of Digestology

ISSN

ISSN 1009-3079 (print) ISSN 2219-2859 (online)

EDITOR-IN-CHIEF

Shuang-Suo Dang, Professor, Department of Infectious Diseases, the Second Affiliated Hospital of Medical School of Xi'an Jiaotong University, Xi'an 710004, Shaanxi Province, China

Xue-Liang Jiang, Professor, Department of Gastroenterology, General Hospital of Jinan Military Command of Chinese PLA, Jinan 250031, Shandong Province, China

Zhan-Ju Liu, Professor, Department of Gastroenterology, Shanghai Tenth People's Hospital, Tongji University, Shanghai 200072, China

Bin Lv, Professor, Department of Gastroenterology, the First Affiliated Hospital of Zhejiang Chinese Medical University, Hangzhou 310006, Zhejiang Province, China

Da-Lie Ma, Professor, Department of Pathology, Changhai Hospital, the Second Military Medical University of Chinese PLA, Shanghai 200433, China

Jun-Ping Wang, Professor, Department of Gastroenterology, People's Hospital of Shanxi,

Taiyuan 030001, Shanxi Province, China

Xiao-Zhong Wang, Professor, Department of Gastroenterology, Union Hospital, Fujian Medical University, Fuzhou 350001, Fujian Province, China

Deng-Fu Yao, Professor, Clinical Research Center, Affiliated Hospital of Nantong University, Nantong 226001, Jiangsu Province, China

Zong-Ming Zhang, Professor, Department of General Surgery, Beijing Electric Power Hospital, Capital Medical University, Beijing 100073, China

EDITORIAL BOARD MEMBERS

All editorial board members resources online at <https://www.wjgnet.com/1009-3079/editorialboard.htm>

EDITORIAL OFFICE

Ya-Juan Ma, Director

World Chinese Journal of Digestology

Baishideng Publishing Group Inc

7901 Stoneridge Drive, Suite 501, Pleasanton, CA 94588, USA

Telephone: +1-925-3991568

E-mail: wjcd@wjgnet.com

<https://www.wjgnet.com>

PUBLISHER

Baishideng Publishing Group Inc

7901 Stoneridge Drive, Suite 501, Pleasanton, CA 94588, USA

Telephone: +1-925-3991568

E-mail: bpgoffice@wjgnet.com

<https://www.wjgnet.com>

PRODUCTION CENTER

Beijing Baishideng BioMed Scientific Co., Limited Room 903, Building D, Ocean International Center, No. 62 Dongsihuan Zhonglu, Chaoyang District, Beijing 100025, China
Telephone: +86-10-85381892

PRINT SUBSCRIPTION

RMB 136 Yuan for each issue

RMB 3264 Yuan for one year

COPYRIGHT

© 2020 Baishideng Publishing Group Inc. Articles published by this open access journal are distributed under the terms of the Creative Commons Attribution Non-commercial License, which permits use, distribution, and reproduction in any medium, provided the original work is properly cited, the use is non commercial and is otherwise in compliance with the license.

SPECIAL STATEMENT

All articles published in journals owned by the Baishideng Publishing Group (BPG) represent the views and opinions of their authors, but not the views, opinions or policies of the BPG, except where otherwise explicitly indicated.

INSTRUCTIONS TO AUTHORS

Full instructions are available online at <https://www.wjgnet.com/1009-3079/Nav/36>. If you do not have web access, please contact the editorial office.

水辅助结肠镜的发展现状

沈军权

沈军权, 余姚市人民医院肛肠外科 浙江省余姚市 315400

沈军权, 研究生, 主治医师, 主要从事肛瘘、结肠息肉、结肠肿瘤等相关疾病研究。

基金项目: 宁波市医学科技计划项目, No. 2018A02.

作者贡献分布: 本文由沈军权独立完成。

通讯作者: 沈军权, 主治医师, 315400, 浙江省余姚市城东路800号, 余姚市人民医院肛肠外科. shenjunquan@163.com

收稿日期: 2020-08-25

修回日期: 2020-10-03

接受日期: 2020-10-16

在线出版日期: 2020-11-28

Current status of water-assisted colonoscopy

Jun-Quan Shen

Jun-Quan Shen, Department of Anorectal Surgery, Yuyao People's Hospital, Yuyao 315400, Zhejiang Province, China

Supported by: Ningbo Medical Science and Technology Project, No. 2018A02.

Corresponding author: Jun-Quan Shen, Doctor-in-charge, Department of Anorectal Surgery, Yuyao People's Hospital, No. 800 Chengdong Road, Yuyao 315400, Zhejiang Province, China. shenjunquan@163.com

Received: 2020-08-25

Revised: 2020-10-03

Accepted: 2020-10-16

Published online: 2020-11-28

Abstract

Compared with the traditional air insufflation method, water-assisted colonoscopy has many advantages in clinical application with regard to reduced abdominal pain, increased cecal intubation rate, increased detection

rate of colon adenoma, and increased complete resection rate of larger polyps. It has gradually attracted more and more attention both in China and other countries. The aim of this article is to elaborate the invention, development, and therapeutic applications of water-assisted colonoscopy, as well as its advantages and shortcomings.

© The Author(s) 2020. Published by Baishideng Publishing Group Inc. All rights reserved.

Key Words: Water-assisted colonoscopy; Water injection; Air insufflation; Underwater endoscopic mucosal resection; Underwater endoscopic submucosal dissection

Citation: Shen JQ. Current status of water-assisted colonoscopy. Shijie Huaren Xiaohua Zazhi 2020; 28(22): 1162-1166

URL: <https://www.wjgnet.com/1009-3079/full/v28/i22/1162.htm>

DOI: <https://dx.doi.org/10.11569/wcjd.v28.i22.1162>

摘要

水辅助结肠镜较于传统注气法在临床应用中有减轻腹痛程度、提高盲肠插管率、提高结肠腺瘤检出率、提高较大息肉的完整切除率等优势, 正逐渐成为国内外关注的焦点。本文就水辅助结肠镜的产生、发展、检查优势、治疗上的应用及存在的不足等方面进行详细阐述。

© The Author(s) 2020. Published by Baishideng Publishing Group Inc. All rights reserved.

关键词: 水辅助结肠镜; 注水法; 注气法; 水下内镜黏膜切除术; 水下内镜黏膜下剥离术

核心提要: 水辅助结肠镜较于传统注气法在临床应用中有减轻腹痛程度、提高盲肠插管率、提高结肠腺瘤检出率、提高较大息肉的完整切除率等优势, 正逐渐成为国

内外关注的焦点,特别是水下内镜黏膜切除术及水下内镜黏膜下剥离术技术的开展。

文献来源: 沈军权. 水辅助结肠镜的发展现状. 世界华人消化杂志 2020; 28(22): 1162-1166

URL: <https://www.wjgnet.com/1009-3079/full/v28/i22/1162.htm>

DOI: <https://dx.doi.org/10.11569/wjcd.v28.i22.1162>

0 引言

结直肠癌(colorectal cancer, CRC)是人类最常见的恶性肿瘤之一,根据2012年WHO(世界卫生组织)统计, CRC全球新发病例136万人,位居女性恶性肿瘤第2位,男性恶性肿瘤第3位;同年死亡病例69.4万人,占有恶性肿瘤死亡的8.5%,严重威胁了人类健康。内镜检查是早期CRC筛查的金标准^[1],且结肠镜的应用也随着现代技术发展,从最初对疾病的诊断发展到对息肉、早癌等疾病进行内镜黏膜切除术(endoscopic mucosal resection, EMR)、内镜黏膜下剥离术(underwater endoscopic submucosal dissection, ESD)的微创治疗^[2,3]。传统注气式结肠镜属于有创操作,可造成患者腹胀、腹痛等不适。部分患者由于对腹痛的恐惧,要求无痛肠镜检查,甚至拒绝检查,影响了疾病的诊治。为了减少患者对结肠镜检查的恐惧,提高其耐受性,水辅助结肠镜的出现为解决上述问题提供了有利条件,并逐渐成为国内外医师关注的焦点^[4,5]。本文将从四个方面对水辅助结肠镜进行阐述。

1 水辅助结肠镜的产生及发展

在大肠疾病的诊断和治疗中,结肠镜的作用仍然不可替代。目前,各国内镜进镜方法常规采用空气注入法和Kudo Sinea的“循腔进镜,纵轴短缩”法,辅以腹部按压和体位改变来完成对全结肠的探查。这种检查方法容易导致肠管过度膨胀和延伸,加重肠管成袢、成角,使内镜难以插入,容易引起患者腹痛、腹胀不适,少数患者甚至因此而中止诊疗,或拒绝复查,极大地限制了肠镜普及。为提高病人的耐受性,对注入介质的更换、镇静镇痛药物的应用、插镜技巧改进等进行了尝试,其中,无痛肠镜应用最广。

然而,静脉麻醉是一把双刃剑,在减轻患者腹部不适的同时,术中的麻醉风险是一大隐患。无痛肠镜检查有一定的适应人群,胃肠道出血、心律失常、电解质紊乱等是麻醉的禁忌症,而静脉麻醉费用相对较高,且现场必须有麻醉医师监护,术后苏醒和恢复时间较长,这大大限制了无痛结肠镜的发展^[6,7]。因此,寻找一种痛苦小、操作简便、成本低的结肠镜检查方法,对内镜医师具有重要的意义。

美国学者Falchuk和Griffin^[8]于1984年首次报道采用注水法应用于内镜检查,解决了传统注气法无法通过多发憩室的问题,从而开辟了注水结肠镜的发展之路。直至2011年, Leung等^[9]于DDW先锋论坛上正式完整阐述了注水进镜方法: (1)在操作前先检查内镜的注水泵及注气泵是否正常; (2)在进镜时,为避免注入空气,要求关闭注气泵; (3)脚踏控制注水泵,通过活检孔道注水开放肠腔,以结肠镜能辨认肠腔走形为宜; (4)如果肠道内有较多伴有粪杂的混悬液,尽可能的吸除,进行水交换,避免吸到肠腔黏膜,使肠腔清晰可见; (5)如果插镜顺利,需将多余的水吸除,同时吸除肠腔残余气体,以免过度充盈肠腔,易于成角,增加患者的不适; (6)确认见到回盲瓣和阑尾口即为盲肠插管完成。退镜时打开主机注气泵,注气仔细观察结肠,并吸除残留水; (7)在进镜的过程中,始终按“循腔进镜、纵轴短缩”法进行,并辅以腹部按压,必要时改变患者体位。至此奠定了注水结肠镜在临床应用中独立的诊疗价值和地位。随后内镜医师们对注水结肠镜的研究热情高涨,广泛开展,并逐渐形成了2种方式:水交换结肠镜(water exchange colonoscopy, WEC)及注水式结肠镜(water immersion colonoscopy, WIC)。他们的不同在于WEC是在进镜同时吸出伴有粪杂的混悬液,通过水交换以提高肠腔视野^[10,11]; WIC需在撤镜过程中清除注入的水^[12,13]。但也有内镜医师在临床工作中不具体区分,并将其统称为“注水式结肠镜检查法”。

2 水辅助结肠镜检查较注气结肠镜检查的优势

2.1 能减轻患者检查过程中的腹痛,提高患者的满意度
水辅助结肠镜检查减轻腹痛^[14-16]原因分析:结肠镜检查时患者常规取左侧卧位,乙状结肠的位置高于降结肠,注入的水由于受到重力作用,从位置较高的乙状结肠流向位置较低的降结肠,拉伸、拉直了乙状结肠,克服了传统注气法中空气容易在乙状结肠形成“气袋”,在浮力的作用下使其移向患者右侧及脐侧,加重乙状结肠扭曲的这一缺点。从而减少成袢、成角,降低移向腹腔中心的概率,使肠镜易于通过左半结肠^[17,18],减少了肠系膜牵拉^[19],降低腹痛发生率。也有一些研究认为水辅助结肠镜中注入的温水能润滑肠道,使肠镜通过更顺利;同时注入的温水能缓解肠道的痉挛^[20,21],从而减轻腹痛,但水温的升高并不能提高腹痛的缓解率^[15]。水辅助结肠镜在一定程度上能减轻患者不适感,提高对检查的满意度,从而减少对麻醉的需求,进而减少麻醉风险,同时减轻了患者的经济负担;但能否完全替代无痛结肠镜仍需要大量的临床研究来进一步证实。

2.2 提高盲肠插管的成功率 结肠镜检查中最令人关注

的除了腹痛程度, 还有到达回盲部的成功率, 特别是在困难肠镜的操作。目前对于困难肠镜尚无明确的定义, 但往往与下列因素相关, 如年龄(<20岁或>80岁)、性别(低BMI的女性)、肠道准备不理想、既往有腹、盆腔手术史、结肠冗长、肠道炎症、下消化道出血等^[22,23]。Leung等^[24]对有腹部手术史的退伍军人进行随机对照试验分析, 结果注水组(19/22)完成未镇静结肠镜检查的比例显著高于空气组(11/22) ($P = 0.0217$), 认为注水法在困难结肠镜检查中有优势。Vemulapalli等^[25]对包含了既往有盆腹部手术史及低BMI的女性的110例患者进行了随机对照研究, 结果表明注水组的达盲率更高, 腹痛评分更低。西京医院罗慧等^[26]一项随机对照研究显示, 水辅助结肠镜检查能明显提高对既往有腹、盆腔手术的非麻醉患者盲肠插管率(92.7% vs 76.4%)。应用注水法能够提高盲肠插管成功率, 因为注水不会过度延长肠管, 在重力作用下, 水具有导航作用, 能够帮助寻腔, 辅助完成肠镜检查, 从而使标准肠镜的长度足以到达回盲部^[27]。在初学者培训方面, 水辅助结肠镜较注气法不易过度充气、扩张肠管, 减少成攀、成角, 操作易于学习, 盲肠插管率优于传统注气法, 但能否作为培训初学者的新方式需要更多的研究^[28]。

2.3 提高结肠腺瘤的检出率 腺瘤检出率是评价肠镜操作水平的一项标准, 若腺瘤检出率低, 则患者罹患结肠肿瘤的风险会增加。一些研究表明^[29]水辅助结肠镜检查, 能够提高结肠腺瘤的检出率。其可能原因是注水法进镜, 相当于间接清洗肠道过程, 能够增加视野的清晰度; 同时水有放大的功能, 能够便于腺瘤的发现; 且注水法不易致肠道过度延展, 使息肉不被拉伸而变得平坦, 容易被发现。然而也有研究认为注水法与注气法在腺瘤检出率无差别^[16]。但随着人们对水辅助结肠镜的不断研究与推广, 关于腺瘤检出率方面的研究会更完善。

3 水辅助结肠镜在治疗上的最新进展

3.1 水下内镜黏膜切除术 2012年Binmoeller等^[30]受超声内镜检查的启发, 发现肠腔充水后, 结肠的黏膜及黏膜下层可产生类似水的“浮力”作用, 可与固有肌层分离, 从而提出了水下内镜黏膜切除术(*underwater endoscopic mucosal resection*, UEMR)。近期Schenck等^[31]通过对101例息肉(≥ 15 mm)摘除患者进行回顾性分析(55例UEMR, 46例EMR), 结果发现UEMR组对于较大息肉完整切除率(98.6%)显著高于EMR组(87.6%); 通过肠镜随访, EMR组的复发率明显高于UEMR组(28.3% vs 7.6%, $P = 0.008$)。温必盛等^[32]对37例结直肠广基息肉(≥ 20 mm)均行UEMR, 术后进行9-48 mo随访, 中位随访时间为25.6 mo, 均未复发。以上研究显示在较大结直肠

息肉切除上UEMR优于常规EMR。初步显示了UEMR有较好的可行性, 值得临床进一步深入研究。

3.2 水下内镜黏膜下剥离术 2016年日本学者Yoshii等^[33]首次成功开展了1例直肠黏膜下神经内分泌肿瘤水下内镜黏膜下剥离术(*underwater endoscopic submucosal dissection*, UESD), 随后Yoshii等^[34]又对1例胃体大弯侧早期胃癌实施UESD, 也完整剥离病灶。这些个案研究结果显示黏膜及黏膜下组织由于受水的浮力, 可克服重力, 产生“漂浮”, 进而起着较好的辅助牵引作用。水下的光学变焦效应可放大组织结构, 在纤维化时也有助于提供更为精准的剥离层面, 提示UESD不失为一种有前途的微创治疗手段。但该技术开展时间短, 样本量较少, 目前很难对其做出恰当的评价, 还需更多的临床研究资料予以进一步证实。

4 水辅助结肠镜技术不足

尽管有上述诸多优点, 其也存在一些缺点。如遇到困难肠镜, 水辅助结肠镜注入的无菌水过多(≥ 2 L), 需注意患者的水电解质平衡的监测, 有可能发生水中毒^[35], 出现头痛、共济失调等精神症状, 严重时甚至可发生脑水肿, 引发脑疝危及生命。退镜观察时, 结肠的大量注水须吸除, 会导致检查时间相对延长, 在一定程度上会加重我国大型医院肠镜诊疗任务。对于老年患者, 往往伴有肛门括约肌松弛, 可能会出现一边注水一边污染床单及衣物, 影响患者及操作者心情; 同时术中需要间断补充注水^[33], 相对影响操作时间。肠腔收缩或术中出血量大会影响操作视野, 需吸去水而换用注气法^[35,36]。

5 结论

综上所述, 水辅助结肠镜技术作为一项新兴的技术, 拓宽了内镜检查及微创治疗手段, 也使这项技术易于掌握且操作方便。今后尚需开展临床随机对照研究, 进一步明确水辅助检查镜检、UESD、UEMR与常规注气法、EMR、ESD相比的优势及适应证, 以便在临床应用推广。

6 参考文献

- 1 Nishihara R, Wu K, Lochhead P, Morikawa T, Liao X, Qian ZR, Inamura K, Kim SA, Kuchiba A, Yamauchi M, Imamura Y, Willett WC, Rosner BA, Fuchs CS, Giovannucci E, Ogino S, Chan AT. Long-term colorectal-cancer incidence and mortality after lower endoscopy. *N Engl J Med* 2013; 369: 1095-1105 [PMID: 24047059 DOI: 10.1056/NEJMoa1301969]
- 2 Paik JH, Jung EJ, Ryu CG, Hwang DY. Detection of Polyps After Resection of Colorectal Cancer. *Ann Coloproctol* 2015; 31: 182-186 [PMID: 26576396 DOI: 10.3393/ac.2015.31.5.182]
- 3 Facciorusso A, Antonino M, Di Maso M, Barone M, Muscatiello N. Non-polypoid colorectal neoplasms: Classification, therapy and follow-up. *World J Gastroenterol* 2015; 21: 5149-5157 [PMID: 26576396 DOI: 10.3393/ac.2015.31.5.182]

- 25954088 DOI: 10.3748/wjg.v21.i17.5149]
- 4 Lin S, Zhu W, Xiao K, Su P, Liu Y, Chen P, Bai Y. Water intubation method can reduce patients' pain and sedation rate in colonoscopy: a meta-analysis. *Dig Endosc* 2013; 25: 231-240 [PMID: 23368955 DOI: 10.1111/den.12018]
- 5 张荣, 田叶红, 张利云, 郑百战, 孙英. 注水法在结肠镜检查中的应用价值. *山西医科大学学报* 2016; 47: 71-74
- 6 李小娅. 磷酸丙泊酸钠用于结肠镜检查麻醉中的效果分析. *河北医药* 2016; 38: 1989-1991
- 7 Rex DK, Schoenfeld PS, Cohen J, Pike IM, Adler DG, Fennerty MB, Lieb JG 2nd, Park WG, Rizk MK, Sawhney MS, Shaheen NJ, Wani S, Weinberg DS. Quality indicators for colonoscopy. *Gastrointest Endosc* 2015; 81: 31-53 [PMID: 25480100 DOI: 10.1016/j.gie.2014.07.058]
- 8 Falchuk ZM, Griffin PH. A technique to facilitate colonoscopy in areas of severe diverticular disease. *N Engl J Med* 1984; 310: 598 [PMID: 6694718 DOI: 10.1056/NEJM198403013100919]
- 9 Leung FW, Leung JW, Mann SK, Friedland S, Ramirez FC, Olafsson S. DDW 2011 cutting edge colonoscopy techniques - state of the art lecture master class - warm water infusion/CO(2) insufflation for colonoscopy. *J Interv Gastroenterol* 2011; 1: 78-82 [PMID: 21776430 DOI: 10.4161/jig.1.2.16830]
- 10 Cadoni S, Gallitu P, Sanna S, Fanari V, Porcedda ML, Erriu M, Leung FW. A two-center randomized controlled trial of water-aided colonoscopy versus air insufflation colonoscopy. *Endoscopy* 2014; 46: 212-218 [PMID: 24218307 DOI: 10.1055/s-0033-1353604]
- 11 Garborg K, Kaminski MF, Lindenburger W, Wiig H, Hasund A, Wronska E, Bie RB, Kleist B, Løvdal L, Holme Ø, Kalager M, Hoff G, Bretthauer M. Water exchange versus carbon dioxide insufflation in unsedated colonoscopy: a multicenter randomized controlled trial. *Endoscopy* 2015; 47: 192-199 [PMID: 25412093 DOI: 10.1055/s-0034-1390795]
- 12 Falt P, Liberda M, Smajstrla V, Kliment M, Bártková A, Tvrdík J, Fojtík P, Urban O. Combination of water immersion and carbon dioxide insufflation for minimal sedation colonoscopy: a prospective, randomized, single-center trial. *Eur J Gastroenterol Hepatol* 2012; 24: 971-977 [PMID: 22569079 DOI: 10.1097/MEG.0b013e3283543f16]
- 13 Amato A, Radaelli F, Paggi S, Baccarin A, Spinzi G, Terruzzi V. Carbon dioxide insufflation or warm-water infusion versus standard air insufflation for unsedated colonoscopy: a randomized controlled trial. *Dis Colon Rectum* 2013; 56: 511-518 [PMID: 23478620 DOI: 10.1097/DCR.0b013e318279addd]
- 14 Sugimoto S, Mizukami T. Diagnostic and therapeutic applications of water-immersion colonoscopy. *World J Gastroenterol* 2015; 21: 6451-6459 [PMID: 26074684 DOI: 10.3748/wjg.v21.i21.6451]
- 15 张慧超, 杨幼林, 牛思佳, 尚国印, 陈颖颖. 肠镜用水温度对注水法肠镜影响的临床分析. *中华结直肠肛门电子杂志* 2019; 8: 486-490
- 16 何飞云, 叶斌, 刘双亮, 陈静, 于可. 注水辅助结肠镜检查的应用价值研究. *浙江医学* 2019; 41: 1057-1058 [DOI: 10.12056/j.isn.1006-2785.2019.41.10.2018-1512]
- 17 Baumann UA. Water intubation of the sigmoid colon: water instillation speeds up left-sided colonoscopy. *Endoscopy* 1999; 31: 314-317 [PMID: 10376459 DOI: 10.1055/s-1999-23]
- 18 Ransibrahmanakul K, Leung JW, Mann SK, Siao-Salera R, Lim BS, Hasyagar C, Yen D, Nastaskin I, Leung FW. Comparative effectiveness of water vs. air methods in minimal sedation colonoscopy performed by supervised trainees in the US randomized controlled trial. *Am J Clin Med* 2010; 7: 113-118
- 19 Leung FW, Harker JO, Jackson G, Okamoto KE, Behbahani OM, Jamgotchian NJ, Aharonian HS, Guth PH, Mann SK, Leung JW. A proof-of-principle, prospective, randomized, controlled trial demonstrating improved outcomes in scheduled unsedated colonoscopy by the water method. *Gastrointest Endosc* 2010; 72: 693-700 [PMID: 20619405 DOI: 10.1016/j.gie.2010.05.020]
- 20 Lee BY, Katon R, Herzig D, Fennerty MB. Warm water infusion during sedated colonoscopy does not decrease amount of sedation medication used. *Gastrointest Endosc* 2012; 76: 1182-1187 [PMID: 23021168 DOI: 10.1016/j.gie.2012.08.002]
- 21 Rabenstein T, Radaelli F, Zolk O. Warm water infusion colonoscopy: a review and meta-analysis. *Endoscopy* 2012; 44: 940-951 [PMID: 22987214 DOI: 10.1055/s-0032-1310157]
- 22 Anderson JC, Messina CR, Cohn W, Gottfried E, Ingber S, Bernstein G, Coman E, Polito J. Factors predictive of difficult colonoscopy. *Gastrointest Endosc* 2001; 54: 558-562 [PMID: 11677470 DOI: 10.1067/mge.2001.118950]
- 23 Chung YW, Han DS, Yoo KS, Park CK. Patient factors predictive of pain and difficulty during sedation-free colonoscopy: a prospective study in Korea. *Dig Liver Dis* 2007; 39: 872-876 [PMID: 17652041 DOI: 10.1016/j.dld.2007.04.019]
- 24 Leung FW, Mann SK, Leung JW, Siao-Salera RM, Guy J. The water method is effective in difficult colonoscopy - it enhances cecal intubation in unsedated patients with a history of abdominal surgery. *J Interv Gastroenterol* 2011; 1: 172-176 [PMID: 22586531 DOI: 10.4161/jig.19960]
- 25 Vemulapalli KC, Rex DK. Water immersion simplifies cecal intubation in patients with redundant colons and previous incomplete colonoscopies. *Gastrointest Endosc* 2012; 76: 812-817 [PMID: 22901988 DOI: 10.1016/j.gie.2012.05.033]
- 26 Luo H, Zhang L, Liu X, Leung FW, Liu Z, Wang X, Xue L, Wu K, Fan D, Pan Y, Guo X. Water exchange enhanced cecal intubation in potentially difficult colonoscopy. Unsedated patients with prior abdominal or pelvic surgery: a prospective, randomized, controlled trial. *Gastrointest Endosc* 2013; 77: 767-773 [PMID: 23394837 DOI: 10.1016/j.gie.2012.12.007]
- 27 Anderson JC, Gonzalez JD, Messina CR, Pollack BJ. Factors that predict incomplete colonoscopy: thinner is not always better. *Am J Gastroenterol* 2000; 95: 2784-2787 [PMID: 11051348 DOI: 10.1111/j.1572-0241.2000.03186.x]
- 28 孟令君, 杨幼林. 注水式结肠镜检查的优势. *胃肠病学和肝病学杂志* 2017; 26: 1183-1185 [DOI: 10.3969/j.jissn.1006-5709.2017.10.029]
- 29 韩曼曼, 羊轶驹. 水辅助结肠镜临床应用研究进展. *中华实用诊断与治疗杂志* 2017; 31: 200-202 [DOI: 10.13507/j.jissn.1674-3474.2017.02.031]
- 30 Binmoeller KF, Weibert F, Shah J, Bhat Y, Kane S. "Underwater" EMR without submucosal injection for large sessile colorectal polyps (with video). *Gastrointest Endosc* 2012; 75: 1086-1091 [PMID: 22365184 DOI: 10.1016/j.gie.2011.12.022]
- 31 Schenck RJ, Jahann DA, Patrie JT, Stelow EB, Cox DG, Uppal DS, Sauer BG, Shami VM, Strand DS, Wang AY. Underwater endoscopic mucosal resection is associated with fewer recurrences and earlier curative resections compared to conventional endoscopic mucosal resection for large colorectal polyps. *Surg Endosc* 2017; 31: 4174-4183 [PMID: 28342125 DOI: 10.1007/s00464-017-5474-4]
- 32 温必盛, 杨维忠, 崔光锐, 蔡仁颂, 赖雪珍, 陈晓莉. 注水结肠镜下黏膜切除术治疗结肠肠无蒂大息肉的临床应用. *现代消化及介入诊疗* 2018; 23: 438-440 [DOI: 10.3969/j.jissn.1672-2159.2018.04.002]
- 33 Yoshii S, Hayashi Y, Matsui T, Aoi K, Tsujii Y, Iijima H, Takehara T. "Underwater" endoscopic submucosal dissection: a novel technique for complete resection of a rectal neuroendocrine tumor. *Endoscopy* 2016; 48 Suppl 1 UCTN: E67-E68 [PMID: 26890547 DOI: 10.1055/s-0042-101855]
- 34 Yoshii S, Hayashi Y, Tsujii Y, Takehara T. Underwater endoscopic submucosal dissection: a novel resection strategy

- for early gastric cancer located on the greater curvature of the gastric body. *Ann Gastroenterol* 2017; 30: 364 [PMID: 28469368 DOI: 10.20524/aog.2017.0123]
- 35 Binmoeller KF, Shah JN, Bhat YM, Kane SD. "Underwater" EMR of sporadic laterally spreading nonampullary duodenal adenomas (with video). *Gastrointest Endosc* 2013; 78: 496-502 [PMID: 23642790 DOI: 10.1016/j.gie.2013.03.1330]
- 36 Binmoeller KF, Hamerski CM, Shah JN, Bhat YM, Kane SD, Garcia-Kennedy R. Attempted underwater en bloc resection for large (2-4 cm) colorectal laterally spreading tumors (with video). *Gastrointest Endosc* 2015; 81: 713-718 [PMID: 25708759 DOI: 10.1016/j.gie.2014.10.044]

科学编辑: 刘继红 制作编辑: 张砚梁



ISSN 1009-3079 (print) ISSN 2219-2859 (online) DOI: 10.11569 © 2020 Baishideng Publishing Group Inc.
All rights reserved.

• 消息 •

书 讯



本刊讯 由池肇春与段钟平教授主编的《肠道微生物与消化系统疾病》已由上海科学技术出版社出版, 是国内首部有关肠道微生物与消化系统疾病的编著。

近几年, 国内外学者对肠道微生物与消化系统疾病的相关性开展了基础和临床的研究, 并取得了长足的进展。此书分上下两篇: 上篇为总论, 介绍肠道微生物研究现状与进展、细菌学、细菌生理功能、肠道屏障生理功能和屏障功能障碍、肠道细菌生态平衡和生态失调、细菌诊断、肠道微生物与食物消化和营养吸收、肠道微生物与药物代谢、肠道微生物与免疫、肠道微生物与炎症; 下篇为肠道微生物与消化系统疾病和肿瘤各论, 分别详尽介绍肠道微生物与胃肠、肝胆胰疾病和消化系肿瘤的相关性的研究现状和诊治。

全书共分28章独立成段, 60余万字。可供消化科、肝病与传染病科、肿瘤科、腹部和肝胆外科、影像科等相关科室医师学习参用, 也可供从事微生物与临床医学的科研人员作参考。

在上海科学技术出版社天猫旗舰店可购买。定价198元, 折扣75折, ISBN 978-7-5478-4874-6。网址: <https://detail.tmall.com/item.htm?spm=a212k0.12153887.0.0.4e60687djKE0oO&id=622850895155>。



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
https://www.wjgnet.com



ISSN 1009-3079

