

中国胶囊内镜临床应用指南

中华医学会消化内镜学分会

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中华医学会消化内镜学分会胶囊内镜与小肠镜学组于2008年制订了《中华消化内镜学会胶囊内镜临床应用规范》,对我国规范使用胶囊内镜提供了有力参考。胶囊内镜检查经历10余年的发展,已经成为重要的消化道疾病检查手段,尤其是对小肠疾病的诊断。随着科学技术的不断进步,除了小肠胶囊内镜出现了部分改进之外,专用食管胶囊内镜、专用结肠胶囊内镜和专用磁控胶囊胃镜亦已进入临床应用阶段。所以,胶囊内镜与小肠镜学组决定与时俱进,更新和完善相关规范,在经过专家广泛讨论及多次修改后,现更新我国胶囊内镜临床应用指南如下。

1 检查前准备、胶囊内镜检查、检查后注意事项

1.1 查前准备 鉴于胶囊内镜检查可能发生胶囊滞留及诊断的不确定性,检查前应对患者予以告知并签署知情同意书。

1.1.1 小肠胶囊内镜检查 (1)检查前需禁食或进清流质10~12 h;(2)检查前夜行肠道清洁准备(参考相关内镜检查肠道准备指南),以提高图像的清晰度;(3)术前半小时服用适量祛泡剂,以减少泡沫对视野的影响;(4)不推荐使用促胃肠道动力药。目前研究尚不支持促动力药能够帮助提高全小肠检查完成率^[1-7]。

1.1.2 食管专用胶囊内镜检查 (1)胶囊内镜检查前禁食2 h;(2)饮用少量水(10 mL左右)帮助胶囊内镜吞服;(3)检查过程患者取仰卧位;或可采用5 min法:吞服胶囊后2 min取仰卧位,继保持2 min

30°半卧位,继保持1 min 60°半卧位,继以15 min坐位^[8-10]。

1.1.3 结肠专用胶囊内镜检查^[9,11-14] (1)检查前一日进清流质饮食;(2)检查前夜行肠道清洁准备(参考相关内镜检查肠道准备指南);(3)检查过程中加服小剂量磷酸钠溶液(45~55 mL),通过增加肠蠕动使胶囊尽早进入结肠(使用方法及禁忌证参照相关指南);(4)吞服胶囊后1 h胶囊尚未通过幽门者,建议给予促胃肠动力药或经胃镜将胶囊送入十二指肠以缩短胶囊在胃内的停留时间。

1.1.4 胃专用胶囊内镜检查 目前刚进入临床应用阶段,其对胃部疾病的诊断价值有待进一步研究证实。

1.2 胶囊内镜检查操作过程 检查时将数据记录仪通过导线与粘贴于患者腹部体表的阵列传感器电极相连或者穿戴记录仪背心。患者吞服胶囊后,按时记录相关症状及监视数据记录仪上闪烁的指示灯,以确定检查设备的正常运行;检查期间避免剧烈运动及进入强磁场区域,以防图像信号受到干扰。在服用胶囊2 h后可饮清水,4 h后可以进少许清淡食物。在胶囊电池耗尽时或胶囊经回盲瓣进入结肠(小肠胶囊内镜)或自肛门排出体外(结肠胶囊内镜)后将数据记录仪从患者身上取下,并连接到可进行数据处理的工作站。数据记录仪中的图像资料最终下载至工作站中,并由相关软件进行处理。读片中典型图片和视频可被单独注释及保存;工作站具有显示胶囊走向轨迹的模拟定位功能,对帮助小肠内病灶的定位有一定参考意义。详细检查方法见相关产品说明书。

2 适应证和禁忌证

2.1 小肠胶囊内镜检查主要适应证 (1)不明原

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因消化道出血;(2)不明原因缺铁性贫血;(3)疑似克罗恩病或监测并指导克隆恩病的治疗;(4)疑似小肠肿瘤;(5)监控小肠息肉病综合征的发展;(6)疑似或难以控制的吸收不良综合征(如乳糜泻等);(7)检测非甾体类消炎药相关性小肠黏膜损害;(8)临床上需要排除小肠疾病者^[9,12,14]。

2.2 食管专用胶囊内镜检查主要适应证 (1)疑似 Barrett 食管;(2)疑似食管炎;(3)疑似食管静脉曲张;(4)需要食管镜检查,但不愿接受或不能耐受胃食管镜检查者^[9-10,14]。

2.3 结肠专用胶囊内镜检查主要适应证 (1)需要接受结肠镜检查,但不能耐受或条件不允许者;(2)结肠镜检查无法到达回盲瓣,同时无消化道梗阻者;(3)溃疡性结肠炎的随访,以指导治疗;(4)普通人群的结肠病变筛查^[9,11,13]。

2.4 胶囊内镜检查禁忌证^[9-14] (1)绝对禁忌证:无手术条件或拒绝接受任何腹部手术者(一旦胶囊滞留将无法通过手术取出)。(2)相对禁忌证:①已知或怀疑胃肠道梗阻、狭窄及瘘管;②心脏起搏器或其他电子仪器植入者;③吞咽障碍者;④孕妇。

3 胶囊内镜对疾病的诊断

3.1 小肠胶囊内镜

3.1.1 不明原因消化道出血^[15-31] 胶囊内镜对不明原因消化道出血的总体诊断率在 35% ~ 77% 之间,出血诊断率的高低与出血状况密切相关,显性出血和隐性出血的诊断率分别为 92% 和 44%,但对既往有出血史而近期无出血患者的诊断率仅为 13%,因此胶囊内镜的最佳检查时机为出血刚停止数天至 2 周内。与术中小肠镜的比较结果显示胶囊内镜对不明原因消化道出血诊断的敏感度、特异度、阳性预测值和阴性预测值分别为 95%、75%、95% 和 86%。与气囊式小肠镜相比,总体诊断率相似,但胶囊内镜对血管病变和炎症性病灶更敏感且依从性更好,使胶囊内镜成为不明原因消化道出血的一线检查手段,有助于临床决策。

最常见的小肠出血病因为血管病变,其次为克罗恩病和小肠肿瘤。

3.1.2 小肠血管病变 包括小肠动静脉畸形、毛细血管扩张征、静脉扩张征等。主要表现为血管成丛簇样,黏膜表面见局灶红斑,血管分布错乱,血管扩张明显高出黏膜面等。其主要临床表现为不明原因消化道出血。

3.1.3 克罗恩病 胶囊内镜可用于小肠克罗恩病

的初次诊断、监控疾病的复发、明确病变的范围和严重程度、评估药物及手术治疗疗效。胶囊内镜对克罗恩病的诊断率在 43% ~ 77% 之间,优于小肠钡灌、CT 小肠重建、MRI 小肠重建、结肠镜逆行回肠检查。诊断敏感度可达 90%^[32-38]。

克罗恩病的胶囊内镜下表现主要为小肠绒毛的缺失、黏膜充血水肿、黏膜糜烂、口疮样溃疡、纵行溃疡、卵石征、肉芽肿样改变、肠管狭窄、瘘管、多发假性息肉等,病变多呈跳跃式分布。但作为一种影像学检查,对克罗恩病的诊断应是综合性的,需要结合病史及其他检查,部分病例可行气囊辅助式小肠镜辅以活检病理等检查予以佐证。

3.1.4 小肠肿瘤 小肠肿瘤大多见于因其他指征而进行的胶囊内镜检查中,尽管胶囊内镜的发现率高于 CT 检查,但仍存在约 19% 的漏诊率。最常见的临床表现为不明原因消化道出血或贫血(占 80%)。小肠恶性肿瘤包括间质瘤、腺癌、类癌、黑色素瘤、淋巴瘤和肉瘤等;良性肿瘤包括血管瘤、错构瘤和腺瘤等^[39-43]。(1)小肠腺癌:小肠腺癌位于十二指肠降段及曲氏韧带附近居多,空、回肠相对较少。腺癌病灶常呈隆起增殖性,多伴肠腔狭窄,病灶表面高低不平,结节或菜花状,表面质脆易出血,部分呈溃疡状,病变边界清晰可辨。(2)小肠间质瘤:小肠间质瘤是最常见的小肠间叶来源肿瘤,占消化道间质瘤的 30%,直径小于 2 cm 被称为小间质瘤。约 30% 的间质瘤表现出转移、浸润等恶性生物学行为;约 1/3 可合并出血。胶囊内镜下小肠间质瘤主要表现为隆起或半球状,表面光滑,病灶中央可出现溃疡或溃烂,有时可见新鲜或陈旧血痂,部分可见裸露血管。

3.1.5 遗传性息肉病综合征 胶囊内镜作为一项无创检查手段,在非家族性腺瘤性息肉病、非 Peutz-Jeghes 综合征患者中,其息肉检出率显著高于核磁共振小肠重建,尤其是对检出 < 5 mm 的息肉方面更具优势^[44-49]。

对于家族性腺瘤性息肉病和 Peutz-Jeghes 综合征等遗传性息肉病的患者来说由于需要定期随访和监控,则胶囊内镜更具优势。气囊辅助式小肠镜在检出率方面优于胶囊内镜,但是胶囊内镜依从性更好。

3.1.6 吸收不良综合征(如乳糜泻) 胶囊内镜下特殊表现为小肠黏膜的自身改变,即绒毛萎缩(扇贝样、裂隙状、马赛克型、环状皱襞消失及结节样改变等)及与其并发症相关的表现,如溃疡性空肠炎、

肠病相关性 T 细胞淋巴瘤及小肠腺癌等。其诊断乳糜泻的敏感度和特异度分别达到 89% 和 95%。小肠吸收不良综合征病因众多,诊断应结合病史及血清学检查等,小肠镜下分段多点活检有助于病理诊断,胶囊内镜则有助于复杂乳糜泻的诊断^[50]。

3.1.7 非甾体类消炎药相关性小肠黏膜损害 研究显示,胶囊内镜检出非甾体类消炎药相关性小肠黏膜破损率可高达 68%。最常见的非甾体类消炎药相关性小肠黏膜病变为黏膜破损、皱襞发红、斑点状黏膜出血、溃疡及肠隔膜形成等^[51]。

3.1.8 其他 胶囊内镜还有助于一些少见小肠疾病的诊断,如小肠憩室表现为黏膜上孔状圆形洞穴,周边黏膜光整柔软,美克尔憩室通常表现为广口或窄口的大憩室;其次为结核、寄生虫、放射性肠炎等。胶囊内镜还可用于对胃肠动力障碍性疾病的研究、评估小肠移植术后的改变及对不明原因腹痛和腹泻的诊断等^[9]。

3.2 食管专用胶囊内镜^[52-87] 食管胶囊内镜诊断 Barrett 食管的敏感度和特异度分别约 77% 和 86%;诊断食管炎敏感度为 50%~79%,特异度约 90%;诊断食管静脉曲张敏感度为 82.7%,特异度为 80.5%。以上结果均不及普通上消化道内镜,其优势在于良好的依从性。

3.3 结肠专用胶囊内镜 结肠胶囊镜对明显结肠病变(≥ 6 mm 或 ≥ 3 个独立的息肉)的敏感度 58%~86%。值得注意的是,胶囊内镜诊断息肉特异度较低,在胶囊内镜下容易高估小息肉的大小,但总体上并不影响结肠胶囊内镜对结肠息肉的筛查^[88-114]。

炎症性肠病大多累及结肠黏膜,70%~80% 的克罗恩病以及几乎全部的溃疡性结肠炎可在结肠发现病灶。目前的研究表明,结肠胶囊内镜可用于监控溃疡性结肠炎的活动和评估疗效。但是,目前尚无充足证据支持应用结肠胶囊内镜来确诊可疑的炎症性肠病,这部分患者仍应选择常规结肠镜检查。

对于结肠癌高危患者,结肠胶囊内镜的特异度较高,但是存在敏感度低和胶囊滞留增加的风险。所以,对于存在报警症状的结肠癌高危患者,应接受常规结肠镜检查,结肠胶囊内镜检查不作为首选方法。

4 胶囊内镜检查的并发症

胶囊内镜检查的并发症包括胶囊滞留、误吸入气道等。胶囊内镜检查后胶囊停留于胃肠道 2 周以

上则定义为胶囊滞留。滞留主要发生于克罗恩病及易导致狭窄的高危疾病,如服用非甾体类消炎药、缺血性肠炎、小肠肿瘤、放射性肠炎、肠结核及手术吻合口狭窄等患者。胶囊滞留的总体发生率在 1.3%~1.4%,在不明原因消化道出血、克罗恩病、肿瘤性病变患者中,其滞留率分别为 1.2%、2.6% 和 2.1%。腹部 X 线检查能帮助确定胶囊是否排出。滞留的胶囊可通过外科手术及气囊辅助式小肠镜予以取出。有因胶囊滞留而造成肠道梗阻甚至穿孔及因误吸入气道导致窒息的个案报道。对于已知或怀疑胃肠道梗阻、狭窄、瘘管者进行胶囊内镜检查需十分慎重,应在充分告知及作好手术前准备的情况下完成检查^[115-122]。

5 胶囊内镜检查的局限性

目前没有任何有关胶囊内镜造成电子设备(如心脏起搏器等)失效的报道^[123-128],但胶囊接近起搏器时存在内镜影像有部分缺失的现象。在胶囊内镜检查及胶囊尚未排出体外时,不能接受磁共振检查。非操控式胶囊的运行依赖胃肠道的自身蠕动,可能会影响胶囊观察视角的精准度,而非 360° 角度的视野可能存在拍摄盲区,出现假阴性结果在所难免。

6 胶囊内镜辅助输送装置

多种附件可用于对吞咽困难、胃轻瘫、已知或怀疑上消化道解剖结构异常者的胶囊输送,应用外套管可将胶囊送入胃内;应用圈套器或网篮可将胶囊送入十二指肠和胃毕-II 式手术后的输出襻。辅助输送装置的临床应用将有助于完成特殊患者的胶囊内镜检查^[129]。

7 胶囊内镜报告书写的规范格式

胶囊内镜标准报告书写系统应有两部分组成,即报告框架和报告内容。

7.1 报告框架(基本资料和信息) 报告框架应尽可能按各单位习惯和相关专业指南标准设计,如:患者姓名、出生年月、性别、病例号、检查日期、检查类型(胶囊型号)、胶囊编号、操作医师、病史、临床指征、检查范围、病变描述、并发症、检查结果、诊断印象、建议等。

7.2 报告内容 消化道黏膜有其颜色特征,包括红斑、白色和苍白等。每个病灶可由解剖位置或时间来定位,每种病变类型均作为一个单项而进行观察

和描述,具体病变描述内容与标准内镜相似。但由于对小肠病变的描述有其特殊性,建议参照胶囊内镜标准术语使用规范。此外,还应注明胶囊工作时间以及通过食管、胃和小肠的时间。

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简 讯

《中国实用内科杂志》关于量和单位及数字的部分要求

本刊严格执行 GB 3100~3102-1993《量和单位》中有量、单位和符号的规定及其书写规则,具体可参照中华医学会杂志社编写的《法定计量单位在医学上的使用》。

人和动物体内压力值的单位使用 mmHg、cmH₂O,但在文中第一次出现时应注明与 kPa 的换算系数。

一般情况下,统一使用 L(升)作为表示人体检验组分浓度单位的分母,而不使用 mL、d、mm² 等作分母。

单位符号可以与非物理量的单位的汉字构成组合形式的单位,如:次/min。

在一个组合单位符号中,斜线不应多于 1 条,例如:mg/kg/d 应写成 mg/(kg·d)。

凡是可以使用阿拉伯数字而且很得体的地方,均应使用阿拉伯数字。公历世纪、年代、年、月、日和时刻必须使用阿拉伯数字。年份不能简写。例如:2008 年 8 月 8 日,写作 2008-08-08。

计量单位前的数字和统计表中的数字一律使用阿拉伯数字。

百分数范围和偏差:前一个参数的百分号不能省略,例如 30%~50% 不能写成 30~50%。(15.2±2)% 不能写成 15.2±2%。

附带长度单位的数值相乘,每个数值后单位不能省略。例如:3 cm×5 cm×8 cm 不能写成 3×5×8 cm 或 3×5×8 cm³。