

# 结肠镜诊疗的并发症

American Society of Gastrointestinal Endoscopy

**编者按** 结肠镜诊疗的并发症是消化内镜在常见临床情况下应用的系列讨论之一,由美国消化内镜学会提供.在撰写这一指南的过程中,除MEDLINE检索到的文章外,还参考一些专家推荐的文章.内镜的合理应用指南基于目前的一些重要综述和专家共识,还需要大量的临床对照研究加以确定和必要的修订.临床上实际情况和指南有所差异时应适当调整.

张文俊, 江学良, 李兆申. 结肠镜诊疗的并发症. 世界华人消化杂志 2004;12(11):2727-2730

<http://www.wjgnet.com/1009-3079/12/2727.asp>

## 0 引言

结肠镜诊疗的并发症较少见,但可能是严重且致命的.一组超过25 000例诊断性结肠镜的研究报告总的并发症(主要是出血和穿孔)发生率为0.35%<sup>[1]</sup>,与最近3 196例前瞻性研究报告的0.3%相似<sup>[2]</sup>.结肠镜下息肉摘除并发症发生率升高到2.3%<sup>[1]</sup>,但少于开腹结肠切除和息肉摘除并发症的发生率,后者发生率为14-20%<sup>[3-4]</sup>,并有5%的死亡率<sup>[3]</sup>.社区医疗单位肠镜并发症发生率则难以确定,因为并发症发生率的报告主要来自有经验的中心.另外,随着设备、电子手术技术和诊疗经验的提高,结肠镜检查 and 息肉摘除的并发症发生率降低<sup>[5]</sup>.无症状人群结肠镜筛查并发症发生率为0.2-0.3%,包括出血、穿孔、心肌梗死和脑血管意外<sup>[6-7]</sup>.随着大量的多中心数据的引入如临床后果研究启动(CORI)计划,在将来能更好地用于并发症的评估.然而,尽管能更准确地获取操作后立即出现的并发症的数据,因为没有报道,迟发性并发症仍然被低估.肠镜下息肉摘除的方法有以下几种,冷活检、热活检(如用烧灼术活检)和有或没有电活检的圈套活检.氩离子凝固也用于将大的无蒂息肉分块摘除<sup>[8-9]</sup>.息肉摘除的并发症同样包括诊断性结肠镜的并发症.另外,与息肉摘除直接相关的并发症有急性或迟发性出血、息肉摘除部位的穿孔和息肉摘除术后凝固综合征.与镇静剂相关的并发症已在上消化道内镜指南中述及<sup>[10]</sup>.

## 1 并发症的危险因素

既往肠镜检查 and 体格检查表明检查前用药和凝血机制异常会增加出血的危险性.尽管一组4 735例息肉摘除用纯切电流和凝固或混合电流发生的出血相近,但一般认为用纯切电流可能会增加出血的危险<sup>[11-12]</sup>.随着内镜医

师经验的增加,息肉摘除术后出血发生率会降低<sup>[13]</sup>.息肉的大小与穿孔发生的关系还不清楚<sup>[14]</sup>,然而,认为右侧无蒂息肉穿孔发生率最高,因为这些区域结肠壁最薄<sup>[15]</sup>.

## 2 并发症的预防

尽管做了最大的努力,在结肠镜检查或息肉摘除时总有发生并发症的危险,然而,一些措施可以使并发症的发生最少化.准确的收紧切除息肉的圈套需要有一定的经验.不适当的延迟关闭圈套器会导致息肉茎部干燥,从而使圈套器不能完全闭合.相反在关闭圈套器之前烧灼不够就容易引起出血.另外,要非常小心避免将正常黏膜收入圈套器<sup>[16]</sup>.用生理盐水或去甲肾上腺素注射到息肉基底或息肉下使息肉抬高,可增加息肉与黏膜下层分离的程度,已将这种方法作为一种降低息肉摘除术后出血危险的技术,尤其用于位于结肠右侧大的无蒂息肉的摘除,同时也降低了热损伤的深度<sup>[17-20]</sup>.也有用金属夹或可分离的圈套器等机械方法预防息肉切除相关的出血<sup>[21-22]</sup>.对于有凝血障碍的患者,要推迟检查或纠正凝血异常更为合适.因为这些并发症并不常见,因而也没有对照研究证明这些方法的优点.为减少出血,可考虑使用不用电烧灼的小圈套器替代热活检钳治疗小的息肉<sup>[23]</sup>.

## 3 肠道准备相关的并发症

结肠镜检查前清洁肠道是为了更好地观察结肠黏膜,另外,还可以降低肠腔内有潜在爆炸性气体的浓度.已报道的肠道内气体爆炸的并发症极少<sup>[5,24]</sup>.一组研究发现尽管只用标准的磷酸苏打灌肠行乙状结肠镜检查前的准备,有10%的患者肠腔内有可燃气体氢气和甲烷,而用聚乙二醇(PEG)行肠道准备的患者没有可燃气体<sup>[25-26]</sup>.其他研究发现用甘露醇行肠道准备有肠道气体爆炸的潜在危险<sup>[27-30]</sup>.常用的肠道准备有两种类型:含有聚乙二醇的平衡盐液和非聚乙二醇液如枸橼酸镁和磷酸盐(口服磷酸苏打).在老年人、肾功能不全或淤血性心衰的患者,两种准备方法都可能引起致命性水电解质紊乱.口服肠道准备的其他少见并发症有呕吐引起的贲门黏膜撕裂综合征(Mallory-Weiss tears)<sup>[31-33]</sup>、食管穿孔<sup>[34]</sup>和吸入性肺炎<sup>[35]</sup>等.用磷酸盐行肠道准备可能引起炎症性肠病患者肠黏膜的内镜及组织学改变<sup>[36]</sup>.

#### 4 穿孔

结肠镜操作过程中出现的结肠穿孔可能来自结肠镜对肠壁的机械损伤、气压伤或直接由于治疗所致。穿孔的早期症状有持续性腹痛和腹胀,后期症状主要由腹膜炎所致,包括发热和白细胞升高,胸腹平片发现膈下有游离气体。CT检查优于立位平片<sup>[37]</sup>,因此,对怀疑有穿孔,而胸腹平片检查又没有发现有游离气体的患者,应考虑腹部CT检查。诊断性和治疗性结肠镜穿孔发生率差别不大。一组25 000例结肠镜诊疗,诊断性结肠镜穿孔发生率为0.2%<sup>[1]</sup>,其中6 000例结肠息肉摘除穿孔发生率为0.32%。而另一组5 000例结肠镜诊治报告发现,诊断性结肠镜穿孔发生率为0.12%(4例),息肉摘除者穿孔发生率为0.11%(2例)<sup>[38]</sup>。对1 172例患者的1 555个息肉摘除的回顾分析报告发现只有1例1 cm大小的有蒂息肉摘除后发生隐匿性穿孔<sup>[16]</sup>。一组591例患者结肠镜下摘除息肉1 000个无穿孔发生<sup>[39]</sup>。一组777例患者摘除息肉2 019个息肉,有2例发生穿孔(0.3%)<sup>[40]</sup>。而另一组3 196例的结肠镜筛查前瞻性研究无穿孔发生<sup>[2]</sup>。

#### 5 出血

结肠镜诊治后出血归于下消化道出血范畴,其发生后可能需要输血、住院、重新行结肠镜检查或手术<sup>[2]</sup>。出血可能在息肉摘除后很快发生,也有在术后29 d才出现<sup>[41]</sup>。出血部位可以通过内镜检查或红细胞核素扫描确定<sup>[42]</sup>。报告的息肉摘除术后出血的发生率为0.3–6.1%<sup>[2, 11]</sup>。美国消化内镜协会(ASGE)的调查发现,25 000例诊断性结肠镜出血发生率为0.09%,6 000例息肉摘除者出血发生率为1.7%<sup>[1]</sup>。一组1 795个息肉摘除后有48个息肉摘除处发生出血(2.7%)<sup>[38]</sup>。一组报告0.64%的息肉摘除后发生出血(0.85%的患者)<sup>[12]</sup>,其中10例患者中有3例需要输血。另一系列591例患者行1 000个息肉摘除,有8例发生小的出血(1.4%)<sup>[39]</sup>。其他研究者报道息肉摘除后立即出现出血者为1.5%,迟发出血为1.9%<sup>[40]</sup>。尽管热活检、冷活检和圈套电烧灼的出血率有差别,但没有研究者证实这一观点。

#### 6 息肉摘除术后凝固综合征

已有报道在息肉摘除的过程中,由于电凝固对肠壁的损伤,可引起0.51–1.2%的患者有跨膜烧伤,引起息肉摘除术后凝固综合征<sup>[16, 40]</sup>。这一综合征一般发生在结肠镜后1–5 d,典型表现有发热、局限性腹痛、腹膜炎征候和白细胞增多,放射检查没有游离气体。6篇报道中有5篇报道的病例息肉位于结肠右侧壁,并均为无蒂息肉<sup>[16]</sup>。识别这种情况非常重要,因为这一情况无需手术治疗。

#### 7 其他并发症

结肠镜诊疗的其他少见并发症包括脾破裂<sup>[41–43]</sup>、急性

阑尾炎<sup>[44]</sup>、肠系膜血管撕裂引起的腹腔内出血。如果用于消毒的戊二醛没有清洗干净也会引起化学性结肠炎<sup>[45]</sup>。结肠镜下息肉摘除的并发症还包括菌血症<sup>[46]</sup>、腹膜后脓肿<sup>[47]</sup>、皮下气肿<sup>[48–49]</sup>、圈套器将正常肠黏膜套入<sup>[16]</sup>。与结肠镜检查有关的死亡也有报道,已报道的83 725例操作有5例死亡(0.006%)<sup>[50]</sup>。

#### 8 并发症的治疗

所有单纯穿孔的患者均需考虑手术处理,尽管穿孔通常都需要手术修复,部分病例也可考虑非手术处理<sup>[51]</sup>,隐匿性穿孔或局限性腹膜炎没有脓肿形成的征兆,且保守治疗有效的患者可以避免手术<sup>[52–53]</sup>。腹腔镜下穿孔修补也是可行的<sup>[54]</sup>。所谓的微小穿孔是指发现比较早(息肉摘除后6–24 h),表现为局限性的腹痛和腹肌紧张,而没有弥漫性腹膜炎的刺激症状<sup>[55]</sup>。这类患者的处理为肠道休息、静脉使用抗生素和观察临床表现有无恶化。尽管有报道将穿孔处用夹子闭合<sup>[56]</sup>,但这种方法目前还没有被推荐。

息肉摘除术后出血通常比较明显,可以通过结肠镜进行治疗。用于消化道出血的治疗方法,除标准的内镜治疗(如注射治疗、热凝固和电凝固)外,近来有套扎、环内结扎和止血夹等用于临床<sup>[57–58]</sup>。非内镜下处理方法包括血管栓塞和手术<sup>[59]</sup>。处理息肉摘除术后出血并非都需要进入重症监护病房。

息肉摘除术后凝固综合征通常用静脉内补液、使用广谱抗生素和禁食到症状消失等措施<sup>[16]</sup>,也有通过口服抗生素在门诊治疗获得成功的报道<sup>[40]</sup>。

#### 9 结肠镜染色

如果发现病灶后不准备立即经内镜摘除,或需要定位行内镜随访,用可以永久存在的染料(如印度墨水)在结肠病灶附近刺纹,从而使随后的外科手术或内镜随访容易定位。注射永久存在的天然墨水,也需要考虑操作的安全性。一组55例用印度墨水结肠刺纹的患者,平均36 mo后活检复查,发现6例患者结肠有轻度慢性炎症,1例有增生改变<sup>[60]</sup>。一组7例患者行结肠刺纹标记后1 d到7 wk行手术治疗,发现组织学改变有结肠黏膜下和浆肌层组织坏死、水肿、中性粒细胞浸润等<sup>[61]</sup>。结肠刺纹标记后也有发生伴有腹膜炎的结肠脓肿的报道<sup>[62]</sup>。有关这一主题的综述报告结肠刺纹标记并发症发生率约为0.22%<sup>[63]</sup>。动物实验中将印度墨水稀释(1:100)到内镜和腹腔镜可见的程度,在注射后7 d到1 mo行腹腔镜下手术,没有发现明显的组织学改变<sup>[64]</sup>。最近报道对113例患者行188处注射一种新的碳基永久标记物,没有并发症发生<sup>[65]</sup>。

#### 10 结肠镜检查失败后钡剂灌肠造影的安全性

假如没有发生穿孔,患者已经做了充分准备,而结肠镜检查失败,可以考虑当日行钡剂灌肠造影检查<sup>[66]</sup>。而

结肠镜下息肉摘除术后或结肠行深的活检(直肠除外)后5 d内行钡剂灌肠检查是不安全的<sup>[67-68]</sup>。然而有关这一措施重要性的资料很少。另外, 结肠息肉摘除后立即行结肠CT成像(仿真肠镜)是否安全还不清楚。

总之, 结肠镜检查的并发症虽然少见, 但不可避免, 发生率一般在0.35%以下。因为有发生并发症的可能就要执行告知制度。操作并发症包括穿孔、出血、息肉摘除术后凝固综合征、感染、肠道准备相关的并发症和死亡, 治疗性结肠镜并发症发生率多于诊断性结肠镜检查。与结肠息肉摘除相关并发症的危险因素包括息肉的部位和大小、操作者的经验、息肉摘除的技术和使用的凝固电流的种类。大而无蒂息肉下注射盐水可以减少热损伤的深度, 从而降低了并发症的发生。并发症的早期识别和及时处理可以降低患者的死亡率。针对不同的并发症采用不同的治疗方法, 如息肉摘除术后凝固综合征宜采用支持治疗, 出血后可在肠镜下注射或电凝止血, 单纯穿孔可手术修补。术前正确评估危险因素, 及时识别潜在的并发症, 并采取合理的处理, 可以促进患者的痊愈。

## 11 参考文献

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