

· 专题论坛 ·

胃肠道肿瘤性急腹症的影像学表现

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【摘要】 胃肠道肿瘤性急腹症可由胃部、小肠及结直肠的原发肿瘤引起,亦可由腹膜种植、淋巴道转移及血运来源的转移瘤所致。此类急腹症患者预后差,病死率高,临床表现复杂多变,临床做出正确诊断较为困难。不同肿瘤易引发的急腹症不相同。胃肠道恶性肿瘤常引起胃肠道梗阻,影像学检查建

议首选上消化道造影检查(胃癌)及增强 CT 检查(结肠癌);胃肠间质瘤常伴有消化道出血,首选检查应为计算机断层扫描血管成像(CTA);原发性胃肠道淋巴瘤易引起胃肠道的穿孔,且好发于小肠,首选检查应为 CT 检查。小肠类癌发病率近年呈上升趋势,对于胃肠道缺血性急腹症,应及时行增强 CT 检查排除小肠类癌引起的胃肠道缺血。对于有肿瘤病史的患者若出现急腹症,也应考虑到胃肠道转移瘤的可能。本文重点讨论了常见的胃肠道肿瘤及其可引起的梗阻、穿孔及出血等急腹症的影像学特征,旨在提高临床工作中对此类症状的认识,以便及时做出正确的判断和治疗方式。

【关键词】 胃肠道肿瘤; 梗阻; 出血; 穿孔; 影像特征

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【Abstract】 Both malignant tumors derived from gastrointestinal tract and metastasis from peritoneal spread, hematogenous dissemination and lymph node can lead to acute

abdomen. Such acute abdomen patients have poor prognosis, high mortality, and complex clinical manifestations. It is difficult to make a correct diagnosis in clinical practice. Recent studies show that gastrointestinal tumors are associated with clinical emergency. Malignant gastrointestinal tumors mostly result in obstruction, so upper gastrointestinal contrast for gastric cancer and post-enhanced CT for colon cancer are recommended; gastrointestinal stromal tumors usually cause bleeding, so computed tomography angiography (CTA) is the first choice for examination; primary gastrointestinal lymphoma tends to cause perforation and usually occurs in small intestine, so CT is the first examination for patients with ischemic acute abdomen, and post-enhanced CT is essential to exclude small intestine carcinoid because of its rising incidence in recent years. The possibility of gastrointestinal metastasis should be kept in mind for patients with cancer presenting acute abdomen. This article focuses on the imaging features of common gastrointestinal tumors and their acute obstruction, perforation, and hemorrhage, and aims to improve the understanding of such symptoms in clinical practice so that correct diagnosis and treatment can be made in time.

【Key words】 Gastrointestinal neoplasms; Obstruction; Perforation; Hemorrhage; Imaging characteristics

急腹症是一类以急性腹痛为突出表现,需要早期诊断和及时处理的腹部疾病。临床中急腹症常由腹部外伤、胃肠道炎性反应、腹盆腔系膜的粘连、腹部疝等疾病引起^[1-2]。随着胃癌和结直肠癌的发病率升高,由胃肠道肿瘤引起的急腹症报道日趋增多^[3-5]。胃肠道肿瘤性急腹症通常表现为胃肠道的梗阻、腹部空腔脏器的穿孔及由肿瘤引起的消化道出血等^[6-8]。大部分急腹症发生在肿瘤的进展期^[9-12]。研究表明,与无急腹症的胃肠道肿瘤患者相比,发生急腹症的患者预后差、整体生存率低、术后病死率升高,临床工作应予以高度重视,诊疗过程应尽量缩短^[13-14]。近年来,随着多排螺旋 CT 的广泛应用及检查技术的提高,放射学影像检查在诊断胃肠道

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肿瘤引发急腹症中的作用越来越重要,它具有成像快、无明显禁忌证的优点,对胃肠道梗阻、出血和穿孔具有较高的敏感度和准确度,并且可以提示病变发生的部位、肿块的大小、淋巴结的转移及显示远处器官的转移,有助于临床及时正确地做出诊断和处理。本文介绍了胃肠道肿瘤及其可引起的梗阻、穿孔及出血的影像学特征,旨在提高临床工作中对此类疾病的认识,以便及时做出正确的疾病判断和治疗方式。

一、胃肠道恶性肿瘤

(一) 胃肠道恶性肿瘤及其伴发的急腹症

1. 胃癌:研究表明,胃癌患者中最常见的急腹症是胃出口梗阻^[8];其次是上消化道出血,发生率为 5%^[14];胃癌伴穿孔的发生率仅为 0.3%~3%^[15-17]。Vasas 等^[8]通过对 291 例胃癌患者的研究发现,14.4% 的胃癌患者伴有急腹症,其中胃出口梗阻占胃癌所引起急腹症的 59.6%,紧随其后的是上消化道出血和胃穿孔,分别为 35.7% 和 4.8%。Kandel 等^[18]发现,在 488 例胃癌患者中有 4.5% 伴有胃部穿孔。胃癌急腹症的发生与疾病临床分期有一定关系。研究表明,19% 的胃癌伴穿孔发生在肿瘤的 I 期,12% 的穿孔发生在 II 期患者中^[9];约 60% 以上的穿孔发生在胃癌的 III 期和 IV 期,这可能与疾病进展累及胃壁全层引起的溃疡有关^[8,18-19]。此外,分布在不同解剖部位的胃癌易引发的急腹症类型也不相同,发生在胃大弯及胃前壁的胃癌急腹症类型常常为胃壁的穿孔,发生在胃小弯处的胃癌急腹症常表现为消化道出血^[20]。

2. 结肠癌:临床工作中,高达 33% 的结肠癌患者可出现急腹症^[21]。与胃癌相同,结肠癌最常见的急腹症为肠梗阻,占 15%~29%^[22]。结肠恶性肿瘤也是引起成年人结肠梗阻最常见的原因^[21]。与右半结肠癌相比,左半结肠癌的梗阻发生率更高,尤其是乙状结肠^[23],这可能与乙状结肠的腺癌环形生长、管腔直径较其他结肠窄、粪便黏稠度高有关^[24]。发生在右半结肠的腺癌只有在肿瘤足够大的时候才可能引起梗阻。结肠癌次常见的急腹症是肠壁穿孔,发生率为 2.6%~12%^[25-26]。穿孔常由肿瘤的坏死引起,也可继发于癌性梗阻。研究表明,结肠癌性梗阻可使肠穿孔的风险上升 12%~19%^[27]。继发于结肠癌梗阻的穿孔好发于盲肠,与梗阻处近段管腔的扩张、管壁压力增大、管壁缺血有关^[11]。穿孔是结肠癌最致命的并发症。研究显示,穿孔引起的继发性

腹膜炎病死率高达 30%~50%^[21,28]。据报道,高达 50% 的结肠癌患者伴有下消化道的出血,绝大多数出血量较小,呈自限性,不需要做紧急的临床处理,癌性下消化道大量出血较罕见^[21,29]。

(二) 胃肠道腺癌伴梗阻的影像学检查及表现

1. 胃癌伴梗阻的影像学检查:对于高度怀疑梗阻的患者,应首选上消化道造影检查,不仅可以动态观察胃壁活动,明确梗阻的存在,同时也可做出部分病因诊断:(1)完全梗阻:可见幽门管及远处肠管不能显影,胃内可见大量造影剂充盈,胃窦近梗阻处呈现出鸟嘴样狭窄;(2)部分梗阻:具体表现为造影剂通过梗阻处缓慢,远处肠管显影慢,可以明确观察到梗阻的部位及严重程度。气钡双重造影下,梗阻处的癌灶可表现为胃壁的充盈缺损,胃壁活动性差,胃黏膜结构走行紊乱,胃腔缩窄变形及由癌性溃疡引起的“龛影”等征象。而对于病因不能明确的梗阻或对病灶进行全面评估的患者,应选择增强 CT 作为首选检查,其有助于鉴别机械性梗阻与胃排空延迟、明确梗阻部位、原因及寻找可能的缺血性病灶^[30];若胃扩张部位与空虚处的连接处未发现占位性病灶或者异常强化灶,诊断时可考虑是由糖尿病、病毒感染后综合征、胃壁平滑肌疾病、神经性疾病、药物等引起的胃排空延迟^[30]。胃出口的梗阻通常包括远侧胃、幽门及十二指肠近端的梗阻^[31],CT 能清楚地鉴别梗阻部位所在^[30]。同时 CT 可鉴别腔内异物、管壁病变及腔外压迫性梗阻^[30]。胃癌性梗阻常常发生在胃窦与幽门处,通常发生在癌灶的进展期^[32]。增强 CT 常显示为病变处胃壁较大的伴有溃疡形成的局灶性或弥漫性结节状增厚,或者表现出胃腔内菜花样或蕈伞样结节或者肿块,病灶在动脉期呈明显强化,坏死区不强化,近侧胃腔可见大量内容物潴留^[30,33]。

2. 结肠癌伴梗阻的影像学检查:对于高度怀疑结肠癌伴梗阻的患者,增强 CT 检查为首选。研究表明,CT 检查对胃肠道梗阻部位的判断具有较高的准确性和特异性,分别达 96% 和 93%,对病因诊断的正确率可达 86%,对于癌性梗阻患者 CT 检查可显示局部及远处的病灶,有助于疾病的分期^[34-36]。结肠癌伴梗阻增强 CT 检查表现为梗阻近端肠管的扩张、积液及伴多发的气液平面(梗阻的小肠直径通常 >2.5 cm),远端肠管变细、管腔空虚,梗阻处的病灶通常表现为管壁非对称性的增厚、管腔内软组织肿块影。

二、胃肠间质瘤

(一) 胃肠间质瘤及其伴发的急腹症

作为胃肠道最常见的间叶组织来源的肿瘤,胃肠间质瘤(gastrointestinal stromal tumor, GIST)引发的腹部急症并不少见,主要包括消化道出血、胃肠道梗阻、腹腔出血、肿瘤破裂引发的腹膜炎^[37];其他少见的有胆道梗阻、肠套叠等,其中消化道出血是最常见的急性症状^[38-39]。研究表明,50%以上的GIST伴有慢性或急性发作的出血^[37,40-42]。胃肠道不同部位的GIST引发的急症不同。报道显示,发生在空回肠的GIST容易引起胃肠道的梗阻,发生在胃部及十二指肠的GIST则易引起消化道的出血^[43]。较大且伴发消化道出血的GIST,提示其恶性程度较高^[42,44]。

(二) GIST伴急性出血的影像学检查及表现

尽管上消化道内镜、结肠镜、胶囊内镜、放射性核素显像、导管造影等均可用于消化道出血病因的诊断,并且内镜检查剂及导管造影亦可用于疾病的治疗,但是由于内镜结肠镜对急性出血部位观察欠佳、结肠镜检查准备时间及放射性核素扫描时间长、导管造影的有创性等局限,对于胃肠道急性出血的患者、首选检查应为计算机断层扫描血管成像(computed tomography angiography, CTA)。CT具有应用广泛、成像快的优点,CTA扫描可以精确地显示出血的血管,明确出血部位,并且可以诊断引起消化道出血的潜在病因^[43]。Martí等^[45]研究显示,CTA对急性下消化道出血诊断的敏感度达100%,特异性达96%,准确度达93%,但较放射性核素检查,CTA对出血的敏感性略差^[46]。

CTA的急性出血部位特征性表现为高密度造影剂渗入胃肠道管腔内^[47-49]。具体表现为:动脉期可观察到造影剂渗入胃肠道管腔,常表现为胃肠道管腔内CT值>90 HU的高密度影;随着时间的进行,静脉期胃肠道管腔内的造影剂常常会向远处的管腔移动,依据不同的生理功能状态,表现多种多样,可表现为远处腔内出现线状、雾状或环形的高密度影或出现造影剂-液体平面^[47]。但是对于慢性出血,可能仅在静脉期显示造影剂的外溢,表现为管腔内的密度增高影,需结合平扫对比观察。对于近期出血,CTA扫描时未出血的患者,上述征象不会出现,此时应注意观察胃肠道腔内的密度增高影,出血点可能就在密度增高影的附近区域^[50]。原发病灶以腔外生长为主,常伴有局部的坏死,具体

表现为中心密度减低,周围为等密度的软组织肿块,增强示肿块周围呈均匀中度强化,中心坏死区无强化。

三、原发性胃肠道淋巴瘤

(一) 原发性胃肠道淋巴瘤及其伴发的急腹症

胃肠道淋巴瘤既可为全身性系统性淋巴瘤的部分体现,也可原发于胃肠道组织,最常见于胃部(50%~60%),其次是小肠(30%)和结直肠(10%);原发性胃肠道淋巴瘤(primary gastrointestinal lymphoma, PGL)是淋巴结外淋巴瘤最常见的类型,占全部胃肠道肿瘤的1%~8%^[51-52];与由结内淋巴瘤引起的发热、夜间盗汗、体质量减轻等典型症状不同,PGL常常表现为非特异性的腹痛及消化不良,因此诊断往往延误^[53-54]。

近年来,随着化疗方式的广泛应用,与化疗相关的胃肠道淋巴瘤穿孔报道越来越多。Vaidya等^[55]对1 062例胃肠道淋巴瘤患者研究发现,其中92例患者伴有胃肠道穿孔,55%的穿孔发生在化疗后。Yoshino等^[56]及Maisey等^[57]的研究表明,接受化疗的胃部PGL患者并发穿孔的发生率分别为0.9%和1.2%。化疗后的穿孔可能与药物引起的肿瘤坏死、消散、颗粒化及肿瘤相关胃肠壁变薄有关^[58]。此外,胃肠道淋巴瘤也可表现为自发性穿孔。亚洲淋巴瘤研究小组指出,自发性穿孔是小肠的肠病相关的T细胞淋巴瘤的特征性表现,发生率为34%^[59]。Vaidya等^[55]的研究也发现,伴有胃肠道穿孔的92例患者中,近一半的肿瘤首发症状即为穿孔。小肠是胃肠道淋巴瘤穿孔的常见部位,其次是结直肠和胃部,这可能与肠壁较胃壁薄、易穿透有关^[55,60-62]。穿孔是胃肠道淋巴瘤严重的并发症,此类患者往往预后较差^[55]。因此,对巨大溃疡形成和(或)伴有化疗淋巴瘤患者,应及时调整治疗方案,必要时应行手术切除^[62]。

(二) 胃肠道淋巴瘤伴穿孔的影像学检查及表现

临床中对高度怀疑胃肠道肿瘤伴穿孔的患者,首选的检查应为CT,其具有成像快,无明显禁忌的优点,可清楚显示腹腔内游离积气及局灶性积气,尤其在骨窗上,腹腔内气体可更加清楚地显示,并且CT对确定穿孔部位及原因的判断正确率达83%^[63-64]。

胃肠道肿瘤伴穿孔的CT诊断通常包括明确穿孔存在,确定穿孔部位、观察分析穿孔原因三个部分。具体影像学特征可表现为:(1)腹盆腔内的游离气体或者胃肠道管腔外局部性气体聚积,此现象的

存在高度提示胃肠道穿孔的可能。腹腔上消化道(胃、十二指肠近端)穿孔的游离气体量一般较结肠和阑尾引起穿孔的量小。盆腔的游离气体往往提示远端小肠或者结肠的穿孔^[64]。游离气体并不能明确具体穿孔的部位,相反胃肠道管腔外局部的小范围积气,往往提示穿孔部位,它一般存在于局部积气的邻近肠管^[65-66]。(2)局部胃肠道管腔的不连续,这是另一个高度提示胃肠道穿孔的征象^[64,66]。增强 CT 图像上可显示为局部胃肠道管壁欠光滑和部分管壁缺如。它通常出现在上消化道穿孔的患者中,且仅在 16%~21% 患者中可观察到这一征象^[67-68]。(3)穿孔管壁的增厚。正常的肠管壁膨胀时厚度 1~2 mm,非膨胀状态时厚 2~3 mm^[69]。若肠管厚度>3 mm,尤其在膨胀状态时,应高度怀疑异常情况^[66]。增厚的肠管有助于明确穿孔部位所在,但并不具有特异性,炎性反应、感染以及肿瘤均可引起肠壁的增厚,在胃肠道淋巴瘤患者中更应注意明确区分。(4)穿孔处邻近脂肪组织的炎性反应改变。具体表现为穿孔部位邻近腹腔内脂肪组织内出现模糊样或网格样密度增高影,可能炎性反应引起的临近脂肪组织的水肿有关^[70]。(5)原发灶的诊断。胃肠道淋巴瘤表现多样,它既可表现为单发的突向腔内肿块,也可呈多发的结节样改变,浸润方式多种多样,往往需结合病理诊断^[71]。CT 上胃肠道淋巴瘤整体密度较均匀,强化程度不如腺癌或者类癌明显,表现为轻中度的强化^[71]。

四、其他胃肠道肿瘤及可伴发的急腹症

除上述胃肠道腺癌、GIST 及淋巴瘤,发生在小肠的类癌亦可出现急腹症。类癌易发生腹膜的转移,促进腹膜结缔组织增生和结节形成,引发肠管成角及扭转,导致肠梗阻,同时也可引起肠系膜血管的扭转导致远侧肠管缺血,从而引发急腹症^[71-72]。对于此类患者,增强 CT 是其首选检查。影像中肠系膜内病灶通常表现为富血供的分叶状软组织结节或肿块影,约 70% 的病灶可伴有钙化,少部分病灶也可出现囊变^[72-73]。梗阻处的肠管常表现为肠管间成角,位置异常,肠壁扭结,肠腔变窄等改变^[74]。梗阻处近端肠管出现扩张积液改变,远端肠管空虚。缺血处的肠管则会呈现管壁折叠、黏膜下水肿、管壁增厚等表现^[71]。多排螺旋 CT 三维容积重建技术有助于显示病灶与肠系膜血管的关系,有助于明确血管受侵^[72]。此外,急腹症也可见于胃肠道转移瘤。在影像科日常工作中,小肠的转移瘤较原发性肿瘤更常见^[71,75]。据统计,引起小肠梗阻最常见的转移瘤

是乳腺癌(47%),其次是非小细胞肺癌(11.1%)和恶性黑色素瘤(8.3%)^[75]。胃肠道梗阻和(或)穿孔是转移性肺癌的常见表现^[76]。因此,对出现急腹症且有肿瘤病史的患者,应怀疑转移瘤的可能性,及时行 CT 检查。

五、总结

胃肠道腺癌、GIST 及 PGL 是较常见的胃肠道来源的肿瘤,不同肿瘤易引发的急腹症也不相同。胃肠道腺癌常引起胃肠道梗阻,胃癌伴梗阻的患者应首选上消化道造影检查,对于病因不明的梗阻应进行增强 CT 检查;结肠癌伴梗阻的患者应首选增强 CT 检查,表现为梗阻近端肠管扩张积液及多发气-液平面,梗阻远端肠管空虚。间质瘤常伴有消化道出血,对于高度怀疑 GIST 伴急性出血的患者应首选 CTA 检查,高密度造影剂渗入胃肠道管腔内为其特征表现。PGL 易引起胃肠道的穿孔,好发于小肠,CT 为首选检查,腹腔内出现游离气体或肠管周围出现局灶性的积气有助于确诊穿孔的存在,依据不同 CT 表现可进一步明确穿孔部位。小肠类癌发病率近年呈上升趋势,对于胃肠道缺血性急腹症,应首选增强 CT 检查,排除小肠类癌的可能,多排螺旋 CT 三维容积重建技术有助于观察病灶与肠系膜血管的关系。对于有肿瘤病史的患者,尤其在肺癌患者中,若出现急腹症,应行 CT 检查排除胃肠道转移。

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第 13 届(2018 年)全国结直肠肛门外科新技术新进展研讨会通知

为进一步推动我国结直肠肛门外科事业的发展,促进交流,由中国医师协会肛肠医师分会肛肠疾病专业委员会、中国医师协会结直肠肿瘤专业委员会结直肠肿瘤早诊早治专委会、中国医师协会中西医结合分会肛肠疾病专业委员会、湖南省医学结直肠肛门外科学组、湖南省中医和中西医结合学会大肠肛门疾病专业委员会主办、湖南省人民医院结直肠肛门外科承办、《中华胃肠外科杂志》、《中华结直肠疾病电子杂志》、《结直肠肛门外科杂志》学术支持的“第十三届全国结直肠肛门外科新技术新进展研讨会暨中国医师协会肛肠分会肛肠疾病专业委员会学术年会、第 5 届全国结直肠肛门外科青年医生手术视频大奖赛、湖南省医学会结直肠肛门外科学组学术年会”将于 2018 年 12 月 14—16 日在湖南省长沙市举行。同时,将举行每年一届的“全国结直肠肛门外科青年医生手术视频大奖赛”。相信本次大会将成功地地为各位同道搭建一个相互探讨、争鸣理论的学术交流平台。

征文要求:(1)未曾公开发表的结直肠肿瘤基础与临床研究、经验总结、疑难病例资料及结直肠肛门手术录像等;(2)论文请寄全文(4000 字以内)及摘要(800 字以内);(3)论文用 Word 文档形式;(4)截止日期为 12 月 10 日。

手术录像要求:(1)比赛内容为结直肠肛门外科手术,包括腔镜组(2D、3D)及肛门手术组;(2)必须是由同一主刀进行同一台手术的录像,年龄<45 岁;(3)手术录像展示时间为 10 min,录像中应介绍患者的基本信息和简要病情,整个手术的时间(min)、术中出血量(ml)、并发症情况,术后进食时间、排气时间、下地活动时间、术住院时间等,肿瘤患者应介绍淋巴结清扫情况及病理结果;(4)手术录像中不能出现医院及术者名字;(5)手术录像格式为 DVD,MEPG 等,速度建议 1.5 倍加速;(6)可通过光盘或电子邮件发送;(7)截止日期为 12 月 1 日。

联系方式:稿件及手术录像发电子邮件至 xzgsu@163.com 或 184754269@qq.com 或 drliuqi@126.com,或邮寄至湖南省长沙市解放西路 61 号,湖南省人民医院肛肠外科肖志刚收(邮编 410005)。如有疑问可联系会务组肖志刚:13873180901;刘祺:13574850188、房志学:15974252462。