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· 临床研究 ·

超声内镜对消化道隆起性病变的诊断价值*

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摘要 目的:探讨超声内镜(EUS)对消化道隆起性病变的诊断价值。**方法:**回顾性分析 2013 年 2 月到 2017 年 6 月于我院行 EUS 检查并经内镜下黏膜剥离术(ESD)、内镜黏膜切除术(EMR)或超声内镜引导下细针穿刺(EUS-FNA)获取诊断的 293 例有消化道隆起性病变的患者,分析病变的超声特点,对比病变的诊断结果。**结果:**在 293 例患者中,270 例超声诊断与最终诊断相符,EUS 诊断消化道隆起性病变的准确性为 92.3%。在多种隆起性病变中,以平滑肌瘤(30.7%)及间质瘤(32.4%)最多见,超声对平滑肌瘤及间质瘤的诊断准确性分别为 87.8%、95.8%。**结论:**EUS 对消化道隆起性病变是一种有效的、准确的初步诊断方法。

关键词:消化道隆起性病变;超声内镜;诊断价值

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Diagnostic Value of Endoscopic Ultrasonography for Gastrointestinal Protrusion Lesions*

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ABSTRACT Objective: To explore the diagnostic value of endoscopic ultrasonography (EUS) for gastrointestinal protrusion lesions.

Methods: From February 2013 to June 2017, a total of 293 patients diagnosed with gastrointestinal protrusion lesions and receiving endoscopic ultrasonography at our institution were included in this retrospective study. The final diagnoses of all patients were acquired by performing endoscopic submucosal dissection (ESD), endoscopic mucosal resection (EMR) or endoscopic ultrasound-guided fine needle aspiration (EUS-FNA). We analyzed the ultrasonic imaging of lesions and compared the EUS result with the final result. **Results:** In the 293 patients, the endoscopic ultrasonography results agreed with the final diagnosis in 270 patients, the diagnostic accuracy of endoscopic ultrasonography examination was 92.3%. Among multiple gastrointestinal protrusion lesions, leiomyoma (30.7%) and stromal tumor (32.4%) were the most common. The diagnostic accuracy of EUS in leiomyoma and stromal tumor were 87.8% and 95.8%, respectively.

Conclusions: Endoscopic ultrasonography is an effective and accurate method to preliminarily diagnose gastrointestinal lesions.

Key words: Endoscopic ultrasonography; Protrusion lesions; Diagnostic value

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前言

消化道隆起性病变是来源于消化道各层次的病变,以形态学改变为主,主要包括间质瘤、平滑肌瘤、脂肪瘤、异位胰腺、神经内分泌肿瘤、血管瘤、淋巴管瘤、囊肿和息肉等^[1]。该病变在临床中并不少见,发病率约为 0.3%-0.76%^[2]。由于缺乏特异性症状,多数患者在因其他不适行常规内镜或影像学检查时被偶然发现^[3],但是因为病变表面黏膜光整连续,并且病变多位于黏膜下,普通内镜及常规影像学检查(CT、MRI 等)常难以精确诊断。超声内镜(endoscopic ultrasonography, EUS)结合了超声和内镜

的优势,不仅能清晰地显示消化道管壁的结构,还能在明确病变的组织层次起源、浸润深度、大小及其与邻近脏器的关系的同时,明确诊断黏膜下病变与腔外压迫^[4-8]。EUS 的发展及普及明显提高了黏膜下隆起性病变的诊断水平,给内镜下治疗提供了较好的指导作用。本研究主要探讨了超声内镜对消化道隆起性病变的诊断价值,结果报道如下。

1 资料与方法

1.1 一般资料

选择 2013 年 2 月到 2017 年 6 月于上海交通大学附属第

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一人民医院行常规胃镜检查发现的消化道隆起性病变共 2236 例, 其中 293 例患者在超声内镜检查后行内镜下黏膜剥除术(ESD)、内镜下黏膜切除术(EMR)或超声内镜引导下细针穿刺(EUS-FNA)等明确诊断。293 例患者中, 男 121 例、女 172 例, 平均年龄为 55.6 岁。术前与患者及家属进行详细的谈话, 告知患者及家属手术的目的、方法及过程, 可能出现的并发症等情况, 并签署手术知情同意书。

1.2 器械与方法

术前常规检查血常规、凝血功能、肝肾功能、心电图、胸片以及相关评估, 确定无内镜检查和手术操作的禁忌证。术前禁食 8 h, 常规术前给予咽喉部局部麻醉。建立静脉通道, 常规给予山莨菪碱 5~10 mg、盐酸哌替啶 50~100 mg、地西洋 10~15 mg, 以起到镇静、松弛平滑肌及减少腺体分泌作用。术中心电监护, 监测患者生命体征及血氧饱和度。

超声内镜检查法: 超声内镜使用日本 Olympus 公司的内镜超声系统及微型超声探头。内镜医师先用普通电子内镜(日本 Olympus 公司 GIF-Q260J) 检查并确定病灶的部位, 吸净胃肠道内的内容物及粘液后, 通过副送水向病变部位注入生理盐水, 使所要观察的病灶完全浸泡在生理盐水中, 然后通过内镜的活检钳道插入微型超声探头, 并将微型超声探头送至病灶处扫描, 仔细观察并记录病灶的大小、部位、范围、起源、形态、边界及回声特点。根据超声显像的特点, 判断病变的性质, 并得出初步的诊断。

内镜下黏膜剥离术(endoscopic submucosal dissection, ESD): 全麻后, 应用内镜切开刀或 APC 在隆起病变边缘 5 mm 处电凝标记切除范围, 局部注射肾上腺素、靛胭脂及生理盐水的混合液, 以分离黏膜下层与固有肌层, 确保安全, 待黏膜下抬举理想后用内镜切开刀在标记点外缘切开黏膜, 通过预切开的切口进入黏膜下层, 沿标记外侧做环形切开, 操作过程中尽量完整剥离病变, 待病变剥离完毕, 将剥离的病变固定并观察病变剥离的完整情况, 送至病理科进一步检查。手术过程中, 应用电热止血钳或者 APC 电凝创面所有可见的小血管, 以防术后出血, 必要时止血夹夹闭血管。

1.3 观察指标

记录病变的超声内镜诊断结果及最终诊断结果, 通过对超声内镜诊断与最终诊断的比较探讨超声内镜对消化道隆起性病变的诊断准确性。诊断准确性: 表示超声诊断与病理诊断符合的程度, 反映超声诊断某种病变的能力。

1.4 统计学分析

应用 SPSS 22.0 软件对所有数据进行统计分析。计量资料采用均数±标准差表示, 计数资料采用率和构成比表示。

2 结果

2.1 患者的一般资料

293 例患者中, 病变涉及食管者 83 例, 胃部 146 例, 十二指肠 13 例, 结肠 51 例, 见表 1。

2.2 消化道隆起性病变的最终诊断

293 例消化道隆起性病变均取得最终诊断。其中, 间质瘤 95 例, 平滑肌瘤 90 例, 异位胰腺 24 例, 脂肪瘤 28 例, 息肉 10 例, 神经内分泌肿瘤 37 例, 囊肿 6 例, Brunner 腺瘤 1 例, 颗粒

细胞瘤 2 例。从病变部位上看, 以胃部病变最多见(49.8%), 其次为食管病变(28.3%), 结肠(17.4%), 十二指肠部病变最少(4.4%); 从病变类型上看, 间质瘤最多见(32.4%), 其次为平滑肌瘤(30.7%)、神经内分泌肿瘤(12.6%)、脂肪瘤(9.6%)、异位胰腺(8.2%)、息肉(3.4%)、囊肿(2.0%)、Brunner 腺瘤(0.3%)、颗粒细胞瘤(0.7%)。在所有的胃部隆起性病变中, 间质瘤最常见; 食管隆起性病变中, 平滑肌瘤最常见。见表 2。

表 1 患者一般临床特点

Table 1 General and Clinical Characteristics of patients

Characteristics	
N	293
Average age	55.6 ± 12.65
Sex	
Male	121 (41.3 %)
Female	172 (58.7 %)
Location of lesions	
Esophagus	83 (28.3 %)
Stomach	146 (49.8 %)
Duodenum	13 (4.4 %)
Colon	51 (17.4 %)

2.3 超声内镜在消化道隆起性病变中的诊断准确性、敏感性 & 特异性

如表 3 所示, 293 例超声诊断的消化道黏膜下病变中, 270 例与最终诊断结果相符, 其诊断准确性为 92.3%。在 293 例病变中, EUS 对平滑肌瘤、间质瘤、神经内分泌肿瘤、异位胰腺、脂肪瘤、息肉、囊肿的诊断敏感性分别为 87.8%、95.8%、97.3%、87.5%、96.4%、90% 及 100%; 特异性分别为 98%、95.5%、98.4%、99.3%、99.2%、99.6% 及 100%; 准确性分别为 95.2%、91%、90%、91.3%、93.1%、90% 及 100%。超声内镜对颗粒细胞瘤及纤维瘤的诊断敏感性 & 准确性相对较低。

2.4 超声内镜下的病变特点

如表 5, 293 例病变中, 源自黏膜肌层或固有肌层的主要为平滑肌瘤和间质瘤, 两者在超声内镜下均表现为均匀低回声(图 1, 图 2); 源自黏膜下层的主要为异位胰腺、脂肪瘤及神经内分泌肿瘤, 其中异位胰腺多表现为低回声或等回声, 混杂有点状或条索状高回声, 可累及黏膜层及固有肌层(图 3), 脂肪瘤在超声内镜下表现为均匀高回声(图 4), 神经内分泌肿瘤表现为均匀低回声, 略高于固有肌层(图 5)。

3 讨论

EUS 作为一种腔内超声检查, 可直接将超声微探头置于距离病变部位较近的消化道腔内, 从而避免腹壁脂肪及肠道气体的干扰, 能清晰的显示消化道管壁的 5 个层次结构^[1,6,9], 由内至外依次为: 高回声, 相当于黏膜层; 低回声, 相当于黏膜肌层; 高回声, 相当于黏膜下层; 低回声, 相当于固有肌层; 高回声相当于浆膜层。内镜医师根据管壁的层次结构来明确病变的部位、组织起源及与邻近组织的关系, 从而对病变进行初步的定性诊断^[10], 指导病变的进一步治疗^[11,12]。近年来, 随着内镜技术

的提高及相关设备的发展,EUS 已成为消化道隆起性病变初步声图像特点,对比最终诊断结果,来评估 EUS 的诊断价值,从而为临床诊断及治疗提供参考依据。

表 2 293 例消化道隆起性病变的最终诊断

Table 2 The final diagnosis of 293 cases of gastrointestinal protrusion lesions

Lesions	Location				Total
	Esophagus	Stomach	Duodenum	Colon	
Stromal tumor	5	87	2	1	95(32.4 %)
Leiomyoma	73	14	0	3	90(30.7 %)
Ectopic pancreas	0	24	0	0	24(8.2 %)
Lipoma	0	14	2	12	28(9.6 %)
Polyp	2	3	4	1	10 (3.4 %)
Neuroendocrine tumor	0	1	2	34	37 (12.6 %)
Brunner adenoma	0	0	1	0	1(0.3 %)
Cyst	1	3	2	0	6(2.0 %)
Granulosa cell tumor	2	0	0	0	2(0.7 %)
Total	83(28.3 %)	146(49.8 %)	13(4.4 %)	51(17.4 %)	293(100 %)

表 3 EUS 诊断的敏感性、特异性及准确性

Table 3 Diagnostic sensitivity, specificity and accuracy of EUS

Lesions	EUS results	EUS diagnosis conform to final results		The final results	Sensitivity	Specificity	Accuracy
	n	n	n	%	%	%	%
Leiomyoma	83	79	90	87.8 %	98.0%	95.2%	95.2%
Stromal tumor	100	91	95	95.8 %	95.5%	91%	91%
Ectopic pancreas	23	21	24	87.5 %	99.3%	91.3%	91.3%
Lipoma	29	27	28	96.4 %	99.2%	93.1%	93.1%
Polyp	10	9	10	90 %	99.6%	90%	90%
Neuroendocrine tumor	40	36	37	97.3 %	98.4%	90%	90%
Brunner adenoma	1	1	1	100 %	100 %	100 %	100 %
Cyst	6	6	6	100 %	100 %	100 %	100 %
Granulosa cell tumor	0	0	2	0	100 %	0%	0%
Fibroma	1	0	0	0	99.7%	0%	0%
Total	293	270	293	-	-	92.3%	92.3%

EUS: Endoscopic ultrasonography.

表 4 病变的超声特点

Table 4 EUS characteristic of lesions

Lesions	Number	EUS feathers		
		Origin	Echogenicity	Boundary
Stromal tumor	85	muscularis propria	homogeneous hypoechogenicity	regular or irregular
	10	muscularis mucosae	homogeneous hypoechogenicity	regular or irregular
Leiomyoma	63	muscularis propria	homogeneous hypoechogenicity	regular
	27	muscularis mucosae	homogeneous hypoechogenicity	regular
Ectopic pancreas	21	submucosa hypoechogenicity	isoechogenicity	regular or irregular
	2	muscularis propria	hypoechogenicity	regular
	1	muscularis mucosae	hypoechogenicity	irregular
Lipoma	28	submucosa	homogeneous hyperechogenicity	regular or irregular
Polyp	10	mucous membrane	homogeneous hyperechogenicity	regular or irregular
Neuroendocrine tumor	37	submucosa	homogeneous hypoechogenicity slightly above that of muscularis propria	regular

EUS: Endoscopic ultrasonography.

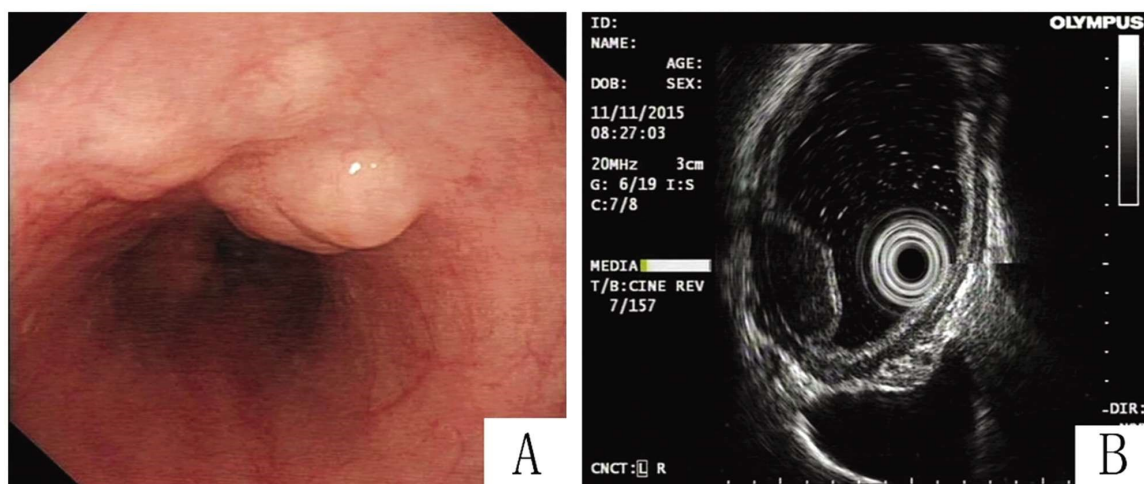


图 1 食管平滑肌瘤在普通内镜及超声内镜下的表现

Fig.1 Appearance of esophageal leiomyoma in conventional endoscopy and endoscopic ultrasonography

A: Endoscopic findings of the esophageal leiomyoma

B: Endoscopic ultrasonography showing a hypoechoic, homogeneous mass arising from the muscularis mucosae.

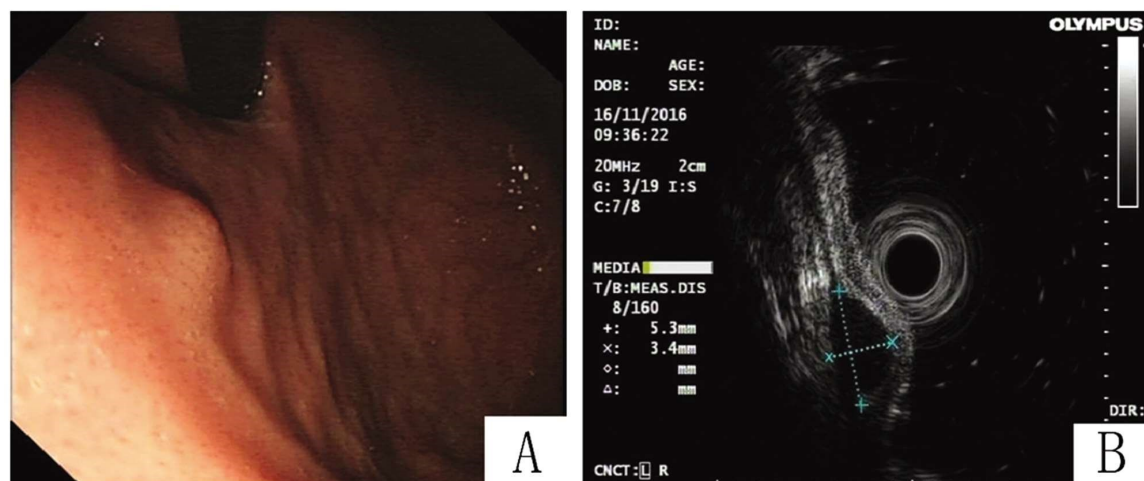


图 2 胃间质瘤在普通内镜及超声内镜下的表现

Fig.2 Appearance of gastric stromal tumor in conventional endoscopy and endoscopic ultrasonography

A: Endoscopic appearance of the stromal tumor located in gastric fundus

B: Endoscopic ultrasonography showing a hypoechoic, homogeneous mass arising from the muscularis propria

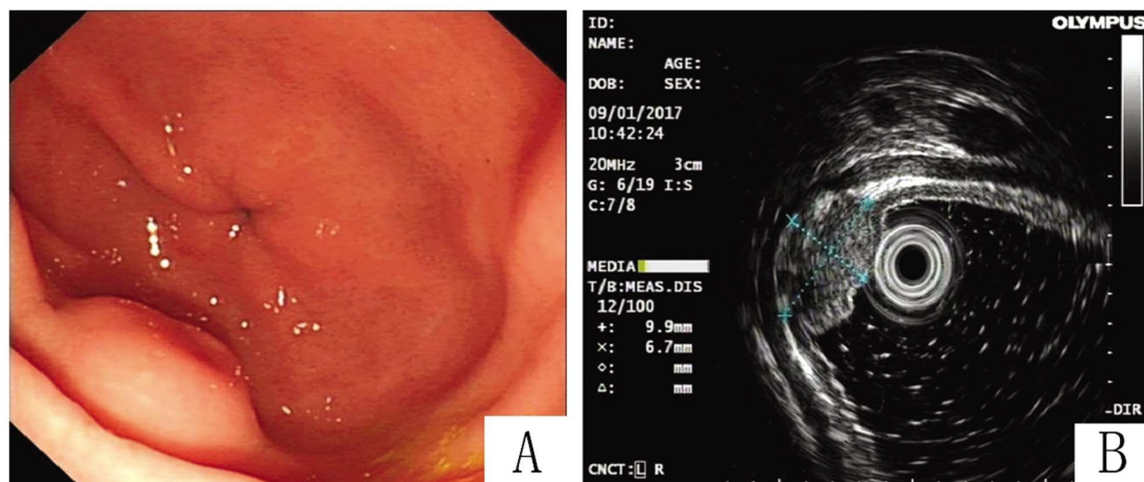


图 3 异位胰腺在普通内镜及超声内镜下的表现

Fig.3 Appearance of ectopic pancreas in conventional endoscopy and endoscopic ultrasonography

A: Endoscopic appearance of the ectopic pancreas located in gastric antrum

B: Endoscopic ultrasonography showing a hypoechoic, inhomogeneous lesion with internal anechoic ductal structures arising from the mucosa and submucosa.

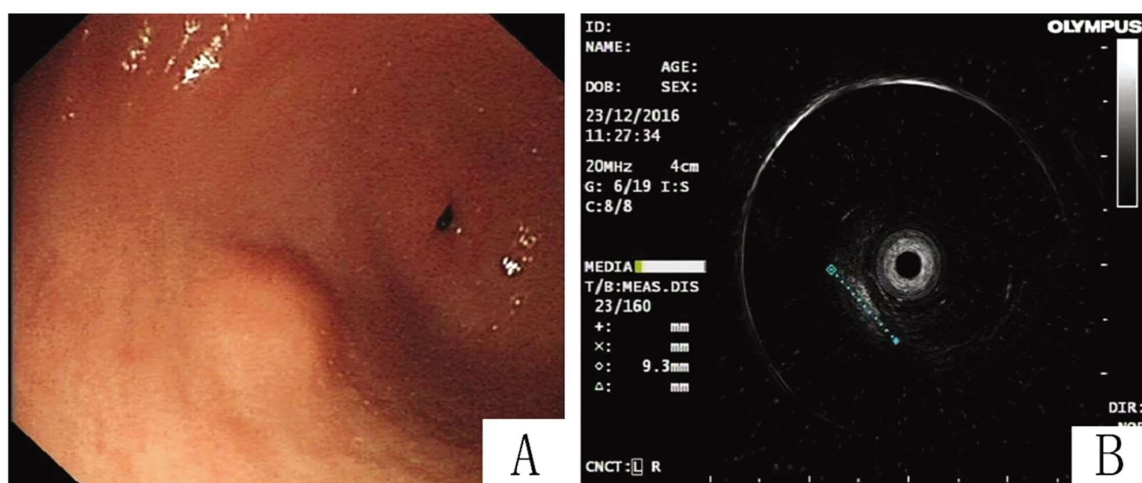


图4 脂肪瘤在普通内镜及超声内镜下的表现

Fig.4 Appearance of lipoma in conventional endoscopy and endoscopic ultrasonography

A: Endoscopic findings of the lipoma located in gastric antrum

B: Endoscopic ultrasonography showing a hyperechoic lesion arising from the submucosa.

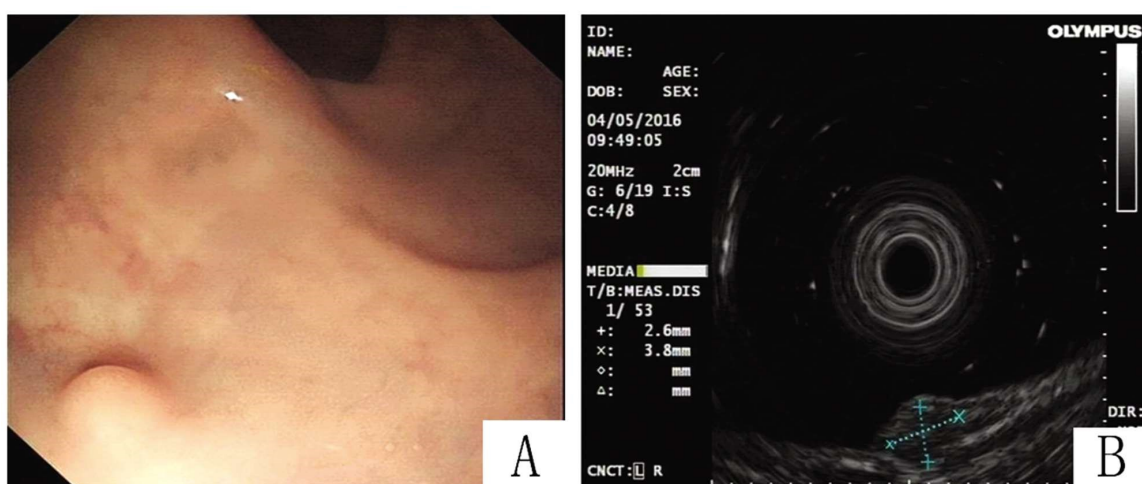


图5 神经内分泌肿瘤在普通内镜及超声内镜下的表现

Fig.5 Appearance of neuroendocrine tumor in conventional endoscopy and endoscopic ultrasonography

A: Endoscopic appearance of the neuroendocrine tumor located in duodenum

B: Endoscopic ultrasonography showing a hypoechoic lesion arising from the submucosa.

临床上,消化道隆起性病变中以间质瘤和平滑肌瘤最为常见。平滑肌瘤多见于食管,普通内镜下表现为病变表面黏膜光滑完整,EUS下表现为均质低回声、边界规则,多起源于固有肌层或黏膜肌层^[13-15];间质瘤多见于胃,具有潜在恶性,临床中10%-30%为恶性,预后相对较差。普通内镜下一般表现为表面光滑的半球形隆起,EUS下表现均质低回声、边界规则或不规则,多起源于固有肌层,也可起源于黏膜肌层^[16-18]。本研究中,最终结果显示:平滑肌瘤占30.7%,间质瘤占32.4%。超声内镜对平滑肌瘤及间质瘤的诊断准确性分别为87.8%、95.8%。因两种病变在内镜下的表现较为相似,临床上若仅根据病变发现部位及好发层次来判断病变性质,易产生误差,两者的鉴别诊断主要依据免疫组织化学检查。在免疫组织化学检查中,平滑肌瘤SMA(+),CD117(-),CD34(-),S100(-);而间质瘤CD117(+)^[14]。

异位胰腺可发生于消化道的任何部位,但多见于胃窦,在常规内镜下表现为黏膜隆起,中央脐样凹陷;超声内镜下表现为低回声或中等回声,内部可出现管状高回声结构,边缘不规

则,多起源于黏膜下层,上下累积黏膜层及固有肌层^[19-21]。在临床上,典型的异位胰腺易于诊断,但不典型的异位胰腺可能因特殊的胃间质瘤而被掩盖。胃间质瘤多见于胃底及胃体,表面有糜烂或者溃疡时,易与异位胰腺相混淆。因此,对于不典型的病例,应多角度、多方位观察以避免误诊。脂肪瘤是一种较少见的良性肿瘤,本研究中占9.6%,多见于胃窦部,生长缓慢,内镜下为单个黄色质软,边缘光滑的病变;EUS下表现为均质高回声病变,多起源于黏膜下层^[22,23]。

本研究中,超声内镜对消化道隆起性病变的诊断准确性为92.3%,与既往研究相一致^[2,24],这表明EUS对消化道隆起性病变的诊断准确率较高,在明确病变形态、大小、回声特点、边界、生长方式及与邻近脏器关系的同时,还能指导内镜医师选择合理的治疗方案。综上所述,超声内镜对于消化道隆起性病变是一种安全有效的初步诊断手段。

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