

The following is the introduction to the
MINIMAL STANDARD TERMINOLOGY IN
GASTROINTESTINAL ENDOSONOGRAPHY
document.

Having a world-wide standard terminology is very important not only for setting up computer databases, but also for clinical and research-related reporting. We encourage endosonographers to be familiar and utilize these standard terms in order to unify our understanding of EUS interpretation.

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MINIMAL STANDARD TERMINOLOGY IN GASTROINTESTINAL ENDOSONOGRAPHY

REQUIREMENTS FOR DATABASES

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Definitions, symbols and abbreviations

ASGE	American Society for Gastrointestinal Endoscopy
ESGE	European Society for Gastrointestinal Endoscopy
JGES	Japanese Gastroenterological Endoscopy Society
OMED	Organization Mondiale d'Endoscopie Digestives
MST	Minimal Standard Terminology for Databases in Digestive Endoscopy [8]
MST/EUS	Minimal Standard Terminology in Gastrointestinal Endosonography
EUS	Endosonography (Endoscopic Ultrasonography, Endoscopic Ultrasound)
CBD	Common Bile Duct
PD	Pancreatic Duct

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1. INTRODUCTION

Since computers became more readily available and relatively inexpensive, there has been increasing interest in their use for recording endoscopic findings. The advantages are that it is possible to search any database created, perform statistical analysis, and avoid the need for hand-written or typed reports. Around the world, a considerable number of endoscopy record systems have been developed, however, such systems have been lacking for gastrointestinal EUS.

This standard was prepared based on work done by a panel of experienced EUS experts from the United States, Europe, and Japan, including previous members of the ASGE/ESGE Minimal Standard Terminology for Gastrointestinal Endoscopy (MST) committee. The committee also includes prof. M.A. Fujino (Japan) who prepared the initial terminology effort within gastrointestinal endosonography¹ (EUS) as a part of the OMED terminology [6]. The present work is designed to be an extension of the MST [8,9] as it pertains to gastrointestinal endosonography (EUS).

The major aim of this project is to devise a "minimal" list of terms that could be included within any computer system used to record the indications, findings and conclusions of a gastrointestinal endosonography examination. The terms selected must have wide acceptability and provide a means for recording the findings in the majority of examinations performed. Excessive detail is to be avoided, and rare findings need to be recorded using "free text" fields. Each term, as described below, was selected on the basis that it would be expected to be used in at least 1 out of 100 consecutive EUS examinations.

The following subsections describe the process of developing the initial list of endosonography terms.

1.1 Identification of fundamental terms

An initial list of terms commonly used in gastrointestinal endosonography needed to be developed. In 1996, a year's worth of EUS reports (~350) were collected at the Medical University of South Carolina. This was taken from a database where indications, findings, and interpretations were entered almost exclusively as free text. This material was collated to a single text file, and specialized text analysis software (Concorder) was applied to study word distribution.

The most commonly appearing terms were selected and were subjected to a manual/clinical review. The resulting terms were categorized and listed

The terms thus selected were exposed to a panel of experienced EUS experts from the United States, Europe, and Japan, including previous members of ASGE/ESGE committee work. The term lists were discussed, and modifications were done accordingly. The main principle at this point was to prepare "minimal lists" and to mimic the structure of the original endoscopic minimal terminology structure wherever appropriate.

¹ The term **endosonography** is used because it is the term used by the National Library of Medicine's MeSH (Medical Subject Headings).

1.2 Term definitions

Some of the terms were determined to require a definition, either because it was difficult to understand, or more importantly, because of diverse opinions about the interpretation of the word. On the other hand, terms which have been defined in other contexts and anatomical terms were not included.

In contrast to the ESGE/ASGE endoscopy terminology, there is no available OMED definition catalog [6] and structure for EUS terms. Thus, no reference could be made to existing definitions.

Suggested definitions were prepared by the working group members, and these definitions were discussed individually by the group. These definitions comprise Informative Appendix A.

1.3 Practical term usage survey

Our aim for the initial terminology was to come up with minimal but relevant lists of terms for use in EUS reports. To test the appropriateness of the lists developed as described above, all of the group members completed a report form for each of approximately 100 consecutive EUS studies. In addition to usage for the terms listed, omissions were collected; a few terms that were repeatedly found to be useful were added to the lists. No terms were excluded at this point, since the number of list items were still regarded as acceptable.

1.4 Adjustment of list items

The adjustments that were made based on the usage survey were presented to the working group for general comments. Additional minimal adjustments were made, and the result represented the 0.1 version for the EUS minimal terminology (Feb 1997).

The following lists were established

- List of reasons for performing EUS
- Equipment
- EUS anatomic terms
- Findings
- Interventions
- Diagnoses

The interim lists were presented to the Informatics Committee of the ASGE in Feb 1997. From that meeting, this formal document of the EUS minimal terminology was begun. A very early draft was presented to the Working Group at the Digestive Diseases Week on May 1997 in Washington, DC. Further comments on the terminology and for the formal document were solicited and collected for a one month period. Also, the structure was harmonized to that of

the MST. These modifications and comments were discussed with several of the Working Group members, and the harmonized effort is presented in Section 2.

1.5 Future direction

This document was presented to the Governing Board of the ASGE for comments and will be presented likewise for the ESGE and JGES. In addition, we work on a numerical coding scheme for the EUS terms to help database developers. Subsequently, we plan to publish this document (as version 1.0) concurrently in the United States (*Gastrointestinal Endoscopy* or *American Journal of Gastroenterology*), Europe (*Endoscopy*), and Japan (*Gastroenterological Endoscopy and Digestive Endoscopy*). Then, further comments from the EUS community as well as from an EUS terminology testing will help develop a more definitive version 2.0. The evaluation should be performed in the United States, Europe, and Asia to ensure international consensus.

In parallel, we hope to develop a World Wide Website on the Internet that would contain the terminology, definitions, and appropriate image examples. This would be necessary to establish the terminology on a broader basis and to show usage of the terms with images.

With version 1.0 and more likely with version 2.0, we hope to maintain the MST/EUS and to have it incorporated into MST and the OMED terminology.

We welcome any comments or suggestions for the next version of the Minimal Standard Terminology in Gastrointestinal Endosonography. Please forward these to Dr. Aabakken (Senior Editor) [see Informative Appendix B for a list of addresses, phone number, and e-mail addresses].

2. ENDOSONOGRAPHY TERMS

2.1 Reasons for performing EUS

2.1.1 Diseases/clinical signs

1. Achalasia
2. Acute pancreatitis
3. Adenopathy
4. Bile duct dilation
5. Bile duct stricture
6. Cancer
7. Cancer recurrence
8. Cholelithiasis
9. Chronic pancreatitis
10. Extrinsic mass
11. Hepatic cystic lesion
12. Large gastric folds
13. Lymphoma
14. Other
15. Pancreatic cystic lesion
16. Pancreatic duct dilation
17. Pancreatic duct stricture
18. Pancreatic mass
19. Pancreatolithiasis
20. Polyp
21. Pseudocyst
22. Submucosal mass
23. Varices

2.1.1.1 *Diagnosis qualifiers*

1. Suspicion of
2. Established
3. Exclusion of
4. Follow-up of
5. Treatment of

2.1.2 Assessment

1. Preoperative assessment
2. Postoperative assessment
3. Other

2.1.3 Diagnostic sampling

1. Fine needle aspiration (FNA)
2. Needle biopsy

3. Forceps biopsy
4. Brush cytology
5. Bile juice aspiration
6. Pancreatic juice aspiration
7. Other

2.1.4 Therapy

1. Cyst aspiration
2. Stent placement
3. Botulinum toxin (Botox) injection
4. Celiac plexus neurolysis
5. Other
6. None

2.2 Equipment

1. Radial echoendoscope
2. Forward scanning echoendoscope
3. Curvilinear array echoendoscope
4. Flexible blind probe
5. Rectal rigid blind probe
6. Radial miniprobe
7. Linear miniprobe
8. Helical 3D miniprobe

2.3 EUS anatomic terms

2.3.1 Esophagus

1. esophagus
2. periesophageal region
3. mediastinum
4. trachea
5. carina
6. main bronchus
7. left pleural sac
8. right pleural sac
9. lung
10. left atrium
11. pericardium
12. aortopulmonary window
13. diaphragm
14. spine
15. carotid artery
16. aortic arch
17. descending aorta
18. azygos vein
19. superior vena cava

20. pulmonary artery
21. anastomosis

2.3.2 Stomach

1. cardia
2. fundus
3. greater curve
4. lesser curve
5. body
6. incisura
7. antrum
8. prepyloric region
9. pylorus
10. perigastric region
11. left lobe of liver
12. caudate lobe of liver
13. right lobe of liver
14. left kidney
15. spleen
16. splenic hilum
17. left adrenal
18. aorta
19. celiac trunk
20. splenic artery
21. splenic vein
22. renal artery
23. renal vein
24. splenoportal confluence
25. portal vein
26. hepatic artery
27. superior mesenteric artery
28. superior mesenteric vein
29. gastroduodenal artery
30. gastroduodenal anastomosis
31. gastrojejunal anastomosis
32. cystogastrostomy

2.3.3 Duodenum

1. proximal bulb
2. apex of bulb
3. descending duodenum
4. ampulla
5. periampullary region
6. horizontal duodenum
7. periduodenal region
8. right kidney
9. right adrenal
10. left lobe of liver
11. caudate lobe of liver

12. right lobe of liver
13. inferior vena cava
14. abdominal aorta

2.3.4 Pancreas²

1. pancreatic parenchyma
2. uncinata process
3. head
4. genu
5. body
6. tail
7. peripancreatic region
8. main pancreatic duct
9. accessory pancreatic duct
10. side branches
11. ventral anlage
12. dorsal anlage
13. left adrenal
14. gastric wall
15. aorta
16. celiac trunk
17. splenic artery
18. splenic vein
19. left renal artery
20. left renal vein
21. splenoportal confluence
22. portal vein
23. hepatic artery
24. superior mesenteric artery
25. superior mesenteric vein
26. gastroduodenal artery

2.3.5 Biliary tract³

1. bifurcation
2. cystic duct
3. common hepatic duct
4. common bile duct
5. common channel
6. intraduodenal bile duct
7. periampullary region
8. gallbladder
9. gallbladder neck
10. gallbladder body
11. peribiliary region

² The pancreas is listed here as an extraintestinal site for those users who base their report by findings rather by location of the EUS endoscope.

³ Although the terms can be used in the context of an intrabiliary EUS catheter probe, the terms can also be used with the perspective of the biliary tract as an extraintestinal site.

12. hepatic hilum

2.3.6 Colorectum

1. colorectal wall
2. anal canal
3. rectum
4. rectosigmoid junction
5. sigmoid colon
6. descending colon
7. transverse colon
8. ascending colon
9. cecum
10. ileocecal valve
11. terminal ileum
12. perianal region
13. perirectal region
14. pericolonic region
15. prostate gland
16. seminal vesicles
17. urinary bladder
18. uterus
19. vagina
20. sacrum
21. puborectalis muscle
22. perineal body
23. internal sphincter
24. external sphincter
25. anastomosis

2.3.7 Vascular structures⁴⁵

- | | |
|------------------------------|--------------|
| 1. aorta | 2.3.2, 2.3.4 |
| 2. aortic arch | 2.3.1 |
| 3. descending <i>aorta</i> | 2.3.1 |
| 4. abdominal <i>aorta</i> | 2.3.3 |
| 5. azygous vein | 2.3.1 |
| 6. carotid artery | 2.3.1 |
| 7. celiac trunk | 2.3.2, 2.3.4 |
| 8. gastroduodenal artery | 2.3.2, 2.3.4 |
| 9. hepatic artery | 2.3.2, 2.3.4 |
| 10. inferior vena cava | 2.3.3 |
| 11. portal vein | 2.3.2, 2.3.4 |
| 12. pulmonary artery | 2.3.1 |
| 13. renal artery | 2.3.2 |
| 14. left <i>renal</i> artery | 2.3.4 |
| 15. renal vein | 2.3.2 |

⁴ The vascular system is listed here as an extraintestinal site for those users who base their report by findings rather by location of the EUS endoscope.

⁵ The list is sorted alphabetically based on the italicized words

- 16. left *renal* vein 2.3.4
- 17. splenic artery 2.3.2, 2.3.4
- 18. splenic vein 2.3.2, 2.3.4
- 19. splenoportal confluence 2.3.2, 2.3.4
- 20. superior mesenteric artery 2.3.2, 2.3.4
- 21. superior mesenteric vein 2.3.2, 2.3.4
- 22. superior vena cava 2.3.1

2.3.8 Other extramural structures³⁴

- 1. left *adrenal* 2.3.2, 2.3.4
- 2. right *adrenal* 2.3.3
- 3. aortopulmonary window 2.3.1
- 4. left atrium 2.3.1
- 5. main *bronchus* 2.3.1
- 6. carina 2.3.1
- 7. gallbladder 2.3.5
- 8. hepatic hilum 2.3.5
- 9. left *kidney* 2.3.2
- 10. right *kidney* 2.3.3
- 11. caudate lobe of *liver* 2.3.2
- 12. diaphragm 2.3.1
- 13. left lobe of *liver* 2.3.2
- 14. lung 2.3.1
- 15. mediastinum 2.3.1
- 16. periampullary region 2.3.3, 2.3.5
- 17. perianal region 2.3.6
- 18. peribiliary region 2.3.5
- 19. pericardium 2.3.1
- 20. pericolonic region 2.3.6
- 21. periduodenal region 2.3.3
- 22. periesophageal region 2.3.1
- 23. perigastric region 2.3.2
- 24. peripancreatic region 2.3.4
- 25. perirectal region 2.3.6
- 26. pleural sac 2.3.1
- 27. prostate gland 2.3.6
- 28. puborectalis muscle 2.3.6
- 29. sacrum 2.3.6
- 30. seminal vesicles 2.3.6
- 31. internal *sphincter* 2.3.6
- 32. external *sphincter* 2.3.6
- 33. spine 2.3.1
- 34. spleen 2.3.2
- 35. splenic hilum 2.3.2
- 36. trachea 2.3.1
- 37. urinary bladder 2.3.6
- 38. uterus 2.3.6
- 39. vagina 2.3.6

2.3.9 General modifiers

1. left
2. right
3. upper
4. mid
5. lower
6. anterior
7. posterior
8. distal
9. proximal
10. ventral
11. dorsal
12. generalized

2.3.10 Wall layer modifiers

1. mucosa
2. muscularis mucosae
3. submucosa
4. muscularis propria
5. serosa
6. intramural
7. transmural
8. all wall layers
9. extramural
10. adjacent

2.4 Findings

2.4.1 Esophageal findings

Term	Attributes	Attribute values	Sites
2.4.1.1 Intramural lesion	Origin	wall layer (list 2.3.10)	main esophageal sites (list 2.3.1)
	Size	x or x-y mm	
	Outer limit	wall layer (list 2.3.10)	
	Shape/character	list 2.4.8.1	
	Margin	list 2.4.8.2	
	Echofeatures	list 2.4.8.3	
	Invasion into	wall layer (list 2.3.10) or adjacent organs (list 2.3.1)	
2.4.1.2 Wall thickening	Origin	wall layer (list 2.3.10)	main esophageal sites (list 2.3.1)
	size	x or x-y mm	

Term	Attributes	Attribute values	Sites
2.4.1.3 Lymph node/ Adenopathy	Echofeatures	list 2.4.8.3	main esophageal sites (list 2.3.1)
	size	x or x-y mm	
	Margin	list 2.4.8.2	
2.4.1.4 Stricture	Shape/character	list 2.4.8.1	main esophageal sites (list 2.3.1)
	Echofeatures	list 2.4.8.3	
	(distance)	mm from primary tumor	
2.4.1.5 Mediastinal mass	Number	#	main esophageal sites (list 2.3.1)
	Traversability	traversable with echoendoscope traversable after dilatation traversable with miniprobe not traversable	
	Size	x or x-y mm	
2.4.1.6 Varices	Margin	list 2.4.8.2	main esophageal sites (list 2.3.1)
	Shape/character	list 2.4.8.1	
	Echofeatures	list 2.4.8.3	
2.4.1.7 Collaterals	Degree	list 2.4.8.6	main esophageal sites (list 2.3.1)
2.4.1.8 Pleural effusion	Degree	list 2.4.8.6	right/left pleura
2.4.1.9 Pericardiac effusion	Degree	list 2.4.8.6	
2.4.1.10 Other		other specification	main esophageal sites (list 2.3.1)

2.4.2 Gastric findings

Term	Attributes	Attribute values	Sites
2.4.2.1 Intramural lesion	Origin	wall layer (list 2.3.10)	main gastric sites (list 2.3.2)
	Size	x or x-y mm	
	Outer limit	wall layer (list 2.3.10)	
	Shape/character	list 2.4.8.1	
	Margin	list 2.4.8.2	
	Echofeatures	list 2.4.8.3	
2.4.2.2 Wall thickening	Invasion into	wall layer (list 2.3.10) or adjacent organs (list 2.3.2)	main gastric sites (list 2.3.2)
	Origin	wall layer (list 2.3.10)	
	size	x or x-y mm	

Term	Attributes	Attribute values	Sites
2.4.2.3 Lymph node/adenopathy	Echofeatures	list 2.4.8.3	main gastric sites (list 2.3.2)
	size	x or x-y mm	
	Margin	list 2.4.8.2	
2.4.2.4 Extramural mass	Shape/character	list 2.4.8.1	main gastric sites (list 2.3.2)
	Echofeatures	list 2.4.8.3	
	(distance) number	mm from primary tumor #	
2.4.2.5 Varices	size	x or x-y mm	main gastric sites (list 2.3.2)
	Margin	list 2.4.8.2	
	Shape/character	list 2.4.8.1	
2.4.2.6 Collaterals	Echofeatures	list 2.4.8.3	main gastric sites (list 2.3.2)
	Degree	list 2.4.8.6	
2.4.2.7 Ascites	Degree	list 2.4.8.6	
2.4.2.8 Celiac axis	detection	list 2.4.8.7	
2.4.2.9 Left kidney	detection	list 2.4.8.7	
2.4.2.10 Left adrenal	detection	list 2.4.8.7	
2.4.2.11 Spleen	detection	list 2.4.8.7	
2.4.2.12 Other		other specification	main gastric sites (list 2.3.2)

2.4.3 Duodenal findings

Term	Attributes	Attribute values	Sites
2.4.3.1 Intramural lesion	Origin	wall layer (list 2.3.10)	main duodenal sites (list 2.3.3)
	Size	x or x-y mm	
	Outer limit	wall layer (list 2.3.10)	
	Shape/character	list 2.4.8.1	
	Margin	list 2.4.8.2	
	Echofeatures	list 2.4.8.3	
2.4.3.2 Wall thickening	Invasion into	wall layer (list 2.3.10) or adjacent organs (list 2.3.3)	main duodenal sites (list 2.3.3)
	Origin	wall layer (list 2.3.10)	
	size	x or x-y mm	
	Echofeatures	list 2.4.8.3	

Term	Attributes	Attribute values	Sites
2.4.3.3 Stricture	traversability	traversable with echoendoscope traversable after dilatation traversable with miniprobe not traversable	main duodenal sites (list 2.3.3)
2.4.3.4 Diverticulum	size	x or x-y mm	main duodenal sites (list 2.3.3)
2.4.3.5 Lymph node/adenopathy	size	x or x-y mm	main duodenal sites (list 2.3.3)
	Margin	list 2.4.8.2	
	Shape/character	list 2.4.8.1	
	Echofeatures (distance)	list 2.4.8.3 mm from primary tumor	
	number	#	
2.4.3.6 Extramural mass	size	x or x-y mm	main duodenal sites (list 2.3.3)
	Margin	list 2.4.8.2	
	Shape/character	list 2.4.8.1	
	Echofeatures	list 2.4.8.3	
2.4.3.7 Ascites	Degree	list 2.4.8.6	
2.4.3.8 Other		other specification	main duodenal sites (list 2.3.3)

2.4.4 Pancreatic findings

Term	Attributes	Attribute values	Sites
2.4.4.1 Pancreatic mass	Size	x or x-y mm	main pancreatic sites (list 2.3.4)
	Shape/character	list 2.4.8.1	
	Margin	list 2.4.8.2	
	Echofeatures	list 2.4.8.3	
	Involvement of	adjacent organs (list 2.3.4)	
	Degree of involvement	list 2.4.8.5	
2.4.4.2 Pancreatic cyst	size	x or x-y mm	main pancreatic sites (list 2.3.4)
	Margin	list 2.4.8.2	
	Echofeatures	list 2.4.8.3	
2.4.4.3 Parenchymal changes	Echofeatures	list 2.4.8.3	main pancreatic sites (list 2.3.4)
	Degree	list 2.4.8.6	
2.4.4.4 Pancreaticolithiasis	size	mm	main pancreatic sites (list 2.3.4)
	echofeatures	list 2.4.8.3	

Term	Attributes	Attribute values	Sites
	number	#	
2.4.4.5 Pancreatic duct changes	duct echofeatures	list 2.4.8.4	main pancreatic sites (list 2.3.4)
	Degree	list 2.4.8.6	
2.4.4.6 Lymph node/adenopathy	size	x or x-y mm	peripancreatic
	Margin	list 2.4.8.2	
	Shape/character	list 2.4.8.1	
	Echofeatures	list 2.4.8.3	
	(distance)	mm from primary tumor	
	number	#	
2.4.4.7 Ventral anlage	detection	list 2.4.8.7	
2.4.4.8 Pancreatic stent	detection	list 2.4.8.7	
2.4.4.9 Other		other specification	main pancreatic sites (list 2.3.4)

2.4.5 Biliary tract findings

Term	Attributes	Attribute values	Sites
2.4.5.1 Bile duct mass	Origin	wall layer (list 2.3.10)	main biliary sites (list 2.3.5)
	Size	x or x-y mm	
	Outer limit	wall layer (list 2.3.10)	
	Shape/character	list 2.4.8.1	
	Margin	list 2.4.8.2	
	Echofeatures	list 2.4.8.3	
	Invasion into	wall layer (list 2.3.10) or adjacent organs (list 2.3.5)	
2.4.5.2 Wall thickening	Origin	wall layer (list 2.3.10)	main biliary sites (list 2.3.5)
	size	x or x-y mm	
	Echofeatures	list 2.4.8.3	
2.4.5.3 Bile duct changes	duct echofeatures	list 2.4.8.4	
2.4.5.4 Lymph node/adenopathy	size	x or x-y mm	main biliary sites (list 2.3.5)
	Margin	list 2.4.8.2	
	Shape/character	list 2.4.8.1	
	Echofeatures	list 2.4.8.3	
	(distance)	mm from primary tumor	

Term	Attributes	Attribute values	Sites
	number	#	
2.4.5.5 Extramural mass	size	x or x-y mm	main biliary sites (list 2.3.5)
	Margin	list 2.4.8.2	
	Echofeatures	list 2.4.8.3	
2.4.5.6 Cholelithiasis	size	mm	main biliary sites (list 2.3.5)
	echofeatures	list 2.4.8.3	
	number	#	
2.4.5.7 Choledochoceles	size		main biliary sites (list 2.3.5)
2.4.5.8 Sludge	Degree	list 2.4.8.6	main biliary sites (list 2.3.5)
2.4.5.9 Biliary stent	detection	list 2.4.8.7	
2.4.5.10 Gallbladder	detection	list 2.4.8.7	
2.4.5.11 Other		other specification	main biliary sites (list 2.3.5)

2.4.6 Colorectal findings

Term	Attributes	Attribute values	Sites
2.4.6.1 Intramural lesion	Origin	wall layer (list 2.3.10)	main colorectal sites (list 2.3.6)
	Size	x or x-y mm	
	Outer limit	wall layer (list 2.3.10)	
	Shape/character	list 2.4.8.1	
	Margin	list 2.4.8.2	
	Echofeatures	list 2.4.8.3	
	Invasion into	wall layer (list 2.3.10) or adjacent organs (list 2.3.6)	
2.4.6.2 Wall thickening	Origin	wall layer (list 2.3.10)	main colorectal sites (list 2.3.6)
	size	x or x-y mm	
	Echofeatures	list 2.4.8.3	
2.4.6.3 Stricture	traversability	traversable with echoendoscope traversable after dilatation traversable with miniprobe not traversable	main colorectal sites (list 2.3.6)
2.4.6.4 Lymph node/adenopathy	size	x or x-y mm	main colorectal sites (list 2.3.6)
	Shape/character	list 2.4.8.1	
	Margin	list 2.4.8.2	
	Echofeatures	list 2.4.8.3	
	(distance)	mm from primary tumor	

Term	Attributes	Attribute values	Sites
	number	#	
2.4.6.5 Extramural mass	size	x or x-y mm	main colorectal sites (list 2.3.6)
	Shape/character	list 2.4.8.1	
	Margin	list 2.4.8.2	
	Echofeatures	list 2.4.8.3	
2.4.6.6 Perirectal collaterals	Degree	list 2.4.8.6	main colorectal sites (list 2.3.6)
2.4.6.7 Perianal fistula			
2.4.6.8 Ascites	Degree	list 2.4.8.6	
2.4.6.9 Prostate gland	detection	list 2.4.8.7	
2.4.6.10 Seminal vesicles	detection	list 2.4.8.7	
2.4.6.11 Urinary bladder	detection	list 2.4.8.7	
2.4.6.12 Uterus	detection	list 2.4.8.7	

2.4.7 Anal findings

Term	Attributes	Attribute values	Sites
2.4.7.1 Internal anal sfincter defect	Location	clock degreee	
2.4.7.2 External anal sfincter defect	Location	clock degree	
2.4.7.3 Perianal fistula	Location	clock degree	
2.4.7.4 Internal anal sfincter	Thickness	mm	
2.4.7.5 External anal sfincter	Thickness	mm	

2.4.8 Lesion attribute values

2.4.8.1 Shape/character

1. round
2. oval
3. triangular
4. crescent-shaped
5. tortuous
6. tubular
7. lobulated
8. sessile
9. pedunculated
10. ulcerated
11. irregular
12. circumferential
13. enlarged
14. atrophic
15. diffuse
16. generalized
17. localized

2.4.8.2 Margin

1. well defined
2. poorly defined
3. smooth
4. irregular
5. loss of interface
6. invading
7. with intraluminal growth

2.4.8.3 Echofeatures

1. normal echofeatures
2. anechoic
3. hypoechoic
4. isoechoic
5. hyperechoic
6. hyperechoic foci
7. hyperechoic strands
8. granular
9. calcified
10. homogeneous
11. heterogeneous
12. lobulated
13. loculated
14. septated
15. cystic
16. multicystic
17. solid
18. shadowing
19. distal enhancement

2.4.8.4 Duct echofeatures

1. normal
2. regular
3. irregular contour
4. beaded
5. dilated
6. narrowed
7. strictured
8. with hyperechoic walls

2.4.8.5 Organ/vascular involvement

1. Encasement
2. Interface loss <15mm
3. Interface loss >15mm
4. Abutment
5. Invasion
6. Intraluminal growth
7. No vessel visualization

2.4.8.6 Degree

1. None
2. Minimal
3. Moderate
4. Extensive
5. Indeterminate

2.4.8.7 Detection

1. Visualization

2. Not visualized
3. Not sought

2.5 Intervention

Term	Attributes	Attribute values
Fine needle aspiration	Lesion	link to described lesion
	Device	Olympus needle GIP/Mediglobe needle Other
	No of passes	#
	Result	Adequate material obtained No adequate material obtained
	Complications	None Bleeding Pain
Cyst aspiration	Lesion	Link to described lesion
	Device	Olympus needle GIP/Mediglobe needle Other
	Result	ml fluid fluid appearance
	Complications	None Bleeding Pain
Injection therapy	Focus	celiac plexus lower esophageal sphincter
	Device	Olympus needle GIP/Mediglobe needle Other
	No of passes	
	Drug	type and amount
	Result	Successful Partially successful Unsuccessful
	Complications	None Bleeding Pain
Stent placement	Lesion	Link to described lesion
	Device	Type and size of stent
	Result	Successful Partially successful Unsuccessful
	Complications	None Bleeding Pain
Endoscopic mucosal	Lesion	Link to described lesion

Term	Attributes	Attribute values
resection	Result	Successful Partially successful Unsuccessful
	Complications	None Bleeding Pain

2.6 Tentative diagnosis

2.6.1 Diagnoses

- | | |
|------------------------------|--|
| 1. Normal | Modifiers
Suspected...
Established...
Ruled out...
Staging/sampling of...
Therapy of...
..... |
| 2. Incomplete examination | |
| 3. Achalasia | |
| 4. Acute pancreatitis | |
| 5. Adenopathy | |
| 6. Ampullary mass | |
| 7. Aneurysm | |
| 8. Ascites | |
| 9. Bile duct dilation | |
| 10. Bile duct stricture | |
| 11. Cancer | |
| 12. Cancer recurrence | |
| 13. Carcinoid | |
| 14. Choledocholithiasis | |
| 15. Cholelithiasis | |
| 16. Chronic pancreatitis | |
| 17. Duodenal ulcer | |
| 18. Esophageal stricture | |
| 19. Esophageal ulcer | |
| 20. Extrinsic mass | |
| 21. Gallbladder mass | |
| 22. Gallbladder sludge | |
| 23. Gastric ulcer | |
| 24. Hepatic cystic lesion | |
| 25. Inflammatory changes | |
| 26. Intramural mass | |
| 27. Large gastric folds | |
| 28. Linitis plastica | |
| 29. Lipoma | |
| 30. Liver mass | |
| 31. Lymphoma | |
| 32. Mediastinal mass | |
| 33. Menetrier's disease | |
| 34. Other | |
| 35. Pancreatic cystic lesion | |
| 36. Pancreatic duct dilation | |

37. Pancreatic duct stricture
38. Pancreatic mass
39. Pancreatic pseudocyst
40. Pancreaticolithiasis
41. Pericardial effusion
42. Pleural effusion
43. Polyp
44. Portal vein thrombosis
45. Postradiation changes
46. Pseudoaneurysm
47. Pseudocyst
48. Splenic vein thrombosis
49. Stromal cell mass
50. Submucosal mass
51. Ulcer
52. Varices
53. Vascular invasion
54. Wall thickening

2.6.1.1 Diagnosis qualifiers

1. Suspected
2. Verified
3. Ruled out
4. Sampled

2.6.1.2 Mass TNM qualifiers

1. T0-4
2. N0-2
3. M0-1

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4. REVISION HISTORY

Author	Revision Number	Date	Location
International Working Group	0.1	February 22, 1997	Miami, FL
Louis Y. Korman	0.1	April 9, 1997	Washington DC
Christopher Y. Kim	0.2	13 May 1997	Washington, DC
Christopher Y. Kim Lars Aabakken Mimi Canto Amitabh Chak Rob Hawes	0.3	16 July 1997	Arlington, VA Oslo, Norway Baltimore, MD Cleveland, OH Charleston, SC
Lars Aabakken Amitabh Chak Christopher Y. Kim Rob Hawes	0.4	15 August 1997	Oslo Norway Cleveland, OH Charleston, SC
Lars Aabakken Christopher Y. Kim Rob Hawes	0.5	30 September 1997	Oslo, Norway Charleston, SC
International Working Group	1.0	10 November 1997	by email

5. INFORMATIVE APPENDIX A: DEFINITIONS

Table 1: Definitions for general and technical terms

Term	Definition	Notes
echo	Acoustic signal received from scattering elements or a specular reflector	
echotexture	The speckle pattern arising from an area of interest in the body.	The pattern depends primarily upon the transducer frequency and beam characteristics, and secondarily upon the structure of the scattering tissues.
lesion	Any localized abnormal structure in the body	
artifact	An echo feature presence or absence in the sonogram which does not correspond to the presence or absence of a real target.	Reverberations and shadowing are examples of such artifacts
proximal	Situated toward the point of origin or attachment	In bile duct: Toward the liver hilum In pancreatic duct: Toward the tail of pancreas
distal	Situated away from the point of origin or attachment	In bile duct and pancreatic duct: Toward the papilla of Vater

Table 2: Definitions for Lesions

Term	Definition	Notes
mass	Localized abnormality with echotexture	A mass may contain cystic areas. Synonym: Tumor
wall thickening	Increase of the dimension of one or more of the wall layers	
lymph node	Extramural mass distinct from an anatomical organ	The recognition of a lymph node is based on shape, margin, echogenicity and location.
cyst	Abnormal anechoic round or oval structure	Cysts may contain echogenic septa or echogenic material. Distal enhancement is often seen behind the lesion
stricture	Focal abnormal narrowing of a tubular organ or structure	

Term	Definition	Notes
varix	Abnormal, tortuous, anechoic dilated tubular structure suggestive of a vessel in the submucosa (layer 3) of the GI wall	
collateral vein	Abnormal, tortuous, anechoic dilated tubular structure outside the gastrointestinal wall.	
effusion	Anechoic expansion of a normal body cavity	An effusion is labeled as pericardial, pleural or peritoneal based on location.
ascites	Effusion in the peritoneal cavity	Synonym: Peritoneal effusion
calcification	Hyperechoic lesion with acoustic shadow within a parenchymal organ or a mass	Air in the gut may mimic calcification. Shadowing may be lacking.
stone	Hyperechoic lesion with acoustic shadowing within a duct or gallbladder.	Typically, only the hyperechoic proximal part of the lesion is seen as echogenic.
biliary sludge	Nonshadowing, echogenic material within the gallbladder or bile duct	May show dependent layering.
fistula	Abnormal tubular structure, usually extending through the gut wall	Usually identified by the presence of air.

Table 3: Definitions for wall layers

The descriptions relate to visualization of a non-compressed wall with a 7.5 or 12 MHz transducer. The ultrasonographic layers do not correspond exactly to the histologic structures

Term	Definition	Notes
mucosa	The two layers nearest the transducer (1st echogenic and 2nd echopoor layer) in gastrointestinal endosonography	
muscularis mucosa	Hypoechoic layer located in the top of (outside) the echogenic 3rd layer.	Usually not seen as a distinct layer unless it is thickened (i.e. thicker than the wave length of the US beam).
submucosa	Hyperechoic 3 rd layer.	
muscularis propria	Hypoechoic 4 th layer	Often divided longitudinally by a thin echogenic layer Synonym: 4 th hypoechoic layer
serosa/ adventitia	Hyperechoic 5 th layer	Includes the subserosal fat.
intramural	Contained within the wall layers	Should not replace T-staging
transmural	Affecting all layers	Should not replace T-staging

extramural	Originating outside the wall	Usually used to indicate lesions directly adjacent to the wall
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Table 4: Definitions for structural echofeatures

Term	Definition	Notes
echogenic	Structure that is capable of producing echoes	
anechoic	Structure without echoes	
hypoechoic	Region where the echoes are not as bright as normal or less bright than surrounding tissues	This is a relative term, not implying any absolute echogenicity.
hyperechoic	Region where the echoes are brighter than normal or brighter than surrounding tissues	This is a relative term, not implying any absolute echogenicity.
hyperechoic foci	Small, distinct reflectors	
hyperechoic strands	Small, stringlike, hyperechoic structures	
shadowing	Reduction of echo distal to a strongly attenuating or reflecting structure	
distal enhancement	Increased echo distal to a hypoechoic or anechoic structure	
granular	Coarse, homogeneous echotexture	
homogeneous	Uniform echotexture within a structure	
heterogeneous	Variable echotexture within a structure	Synonym: Inhomogeneous
lobulated	Containing lobules - rounded homogeneous areas separated by strands of another echogenicity	May also be used to describe <i>shape</i>
loculated	Containing hyperechoic strands that more or less separate a cystic lumen into compartments	
cystic	Containing one or more well-demarcated, anechoic areas	

Table 5: Definitions for duct echofeatures

Term	Definition	Notes
irregular contour	Coarse, uneven outline of the duct	

beaded	With alternating areas of dilatation and narrowing	Synonym: chain of lakes
dilated	Abnormal increase in caliber	
strictured	Abnormal localized decrease in caliber	With or without upstream dilatation

Table 6: Definitions for shape

Term	Definition	Notes
round	Circular structure where the long and short axis are nearly equal	Round is used to describe the two-dimensional representation of the structure, not implying a spherical three-dimensional shape.
oval	Rounded structure where the long and short axis are unequal	roundish, elliptical The transition between round and oval is a gradual one, but with a deviation of 1:1.5 or more, the term round should be avoided.
triangular	Structure with three sides	
crescent-like	Shaped like an early moon. A crescent-like structure has two borders, one convex, one concave, tapering toward the ends	The term can be used for instance for lymph nodes in the mediastinum. A crescent-like structure is often draped around/on another structure for instance the esophagus or a vessel.
tubular	Straight or curved structure with a lumen of more or less constant diameter.	The term is used to describe vessels or ducts.
tortuous	With numerous twists and bends	Synonym: Serpiginous
lobulated	With rounded projections	
bulging	Causing a smooth protrusion of the lumen	Typically seen with submucosal masses
sessile	Protruding, with a broad base	
pedunculated	Protruding, with a stalk	
ulcerated	Defect of the mucosa or the luminal margin of a mass.	This usually implies loss of the mucosal layers at that site. An ulcerated lesion can be benign or malignant. It is more often seen in malignant disease.
circumferential	Involving the entire circumference of a tubular structure.	50%, 75% circumferential, etc., may be used to denote partial involvement.

Table 7: Definitions for margin/delineation

Term	Definition	Notes
well defined	Easily visualized because of difference in echogenicity	Synonym: demarcated

poorly defined	The opposite of well defined	Synonym: nondemarcated
smooth	Even, without projections or unevenness	Synonym: regular
irregular	The opposite of smooth	Synonym: jagged Avoid: pseudopodia
encasement	Encircling most of the circumference of a tubular structure	Usually used to denote a mass around a vessel
loss of interface	Interruption of the normal hyperechoic boundary between a mass and an adjacent structure	
abutting	Being in direct contact with another structure without interface loss or irregularity	Synonym: impinging, pushing against
invading	Extending into an adjacent structure	May include intraluminal growth Synonym: infiltrating

Table 8: Definitions for lymph node regions

Term	Definition	Notes
aorto-pulmonary	Subaortic and para-aortic nodes lateral to the first branch of left pulmonary artery.	Area 5. Usually in 3 o'clock position in standard radial scanner view
anterior mediastinal	Anterior to ligamentum arteriosum	Area 6
subcarinal	Caudal to the carina of the trachea	Area 7. Within 1-2 cm of the carina 12 o'clock position in standard radial scanner view
paraesophageal	Ventral or ventrolateral to the esophagus but caudal to the subcarinal area	Area 8
diaphragmatic	On the dome of the diaphragm, adjacent to or behind the crura	Area 15
pericardial	Immediately adjacent to the cardia, caudal to the diaphragm	Area 16
left gastric	Along the course of the left gastric artery	Area 17
common hepatic	Along the course of the common hepatic artery	Area 18
splenic	Along the course of the splenic artery	Area 19
celiac nodes	At the base of the celiac artery	Area 20

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7. INFORMATIVE APPENDIX C: REVISIONS

Version 1.0

As prepared by the International Working group Nov. 10 1997