

상부위장관 질환에서 초음파 내시경의 역할

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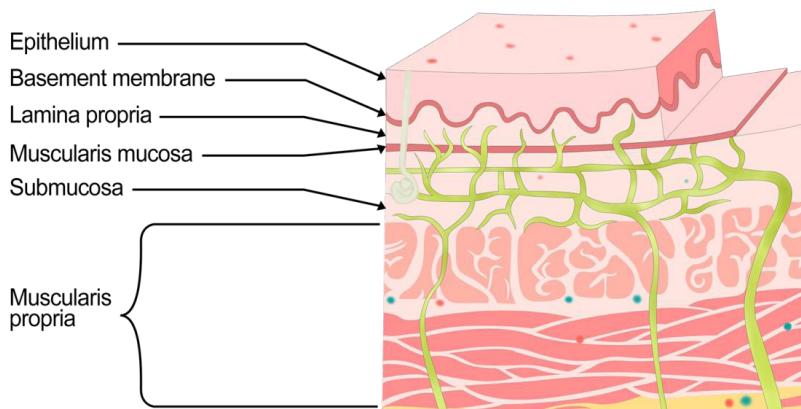


상부위장관 질환에서 초음파 내시경의 역할

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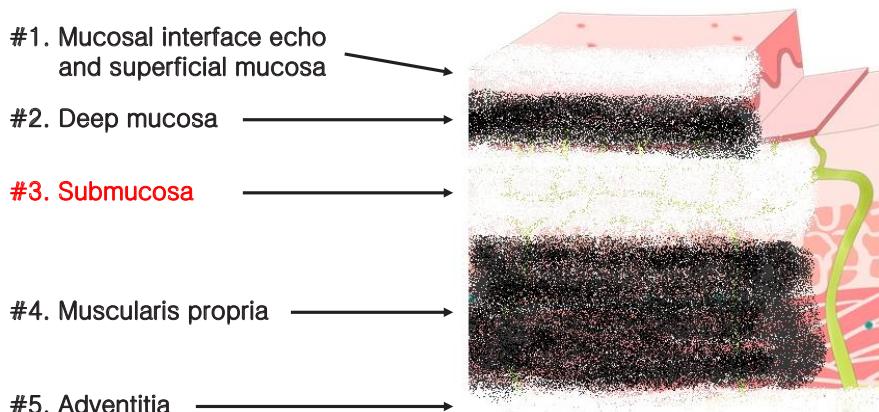
제17회 삼성서울병원 소화기병 심포지움

Esophageal wall



Lancet 1999;354:792-794²

Echographic layers of esophagus - five-layer echo pattern



Echographic layers of esophagus

- nine-layer echo pattern

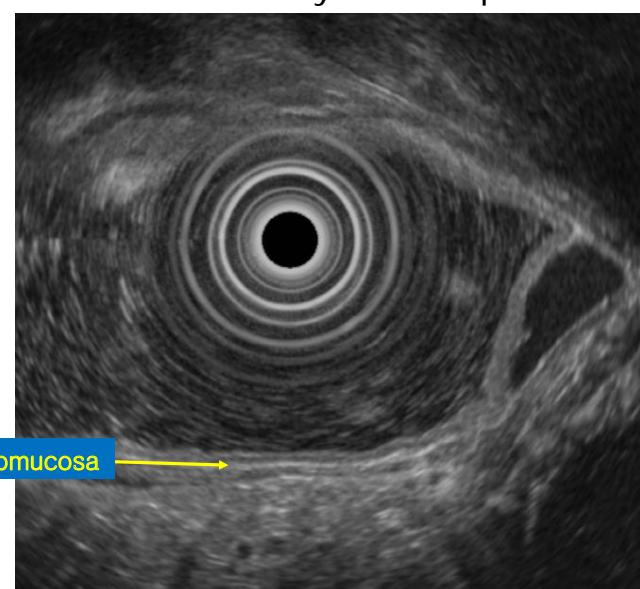
- #1. Mucosal interface echo
and superficial mucosa
- #2. Superficial mucosa
- #3. Lamina propria
- #4. Muscularis mucosa
- #5. Submucosa**
- #6. Inner circular muscle
- #7. Connective tissue layer
- #8. Outer longitudinal muscle
- #9. Adventitia



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Echographic layers of stomach

- five to nine-layer echo pattern



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Indications

1. Evaluation of submucosal lesions
2. Staging of malignancies
3. EUS guided fine-needle aspiration and biopsy

Characteristics of gastric SMTs

Table 1. Characteristic Features of Gastric Subepithelial Lesions

Type of lesion	EUS layer ^{a)}	EUS appearance
Gastrointestinal stromal tumor	Fourth (rarely second)	Hypoechoic (heterogeneous echogenicity, irregular margins, cystic spaces, and the presence of lymphadenopathy suggest malignancy)
Leiomyoma	Second, fourth	Hypoechoic, well-circumscribed
Lipoma	Third	Intensely hyperechoic, homogeneous
Varices	Third	Anechoic, tubular, serpiginous
Schwannoma	Fourth	Hypoechoic
Inflammatory fibroid polyp	Second and/or third	Hypoechoic, homogeneous or mixed echogenicity, indistinct margins
Heterotopic pancreas	Second, third, and/or fourth	Hypoechoic or mixed echogenic, anechoic ductal structure may be present
Carcinoid	Second and/or third	Mildly hypoechoic or isoechoic, homogeneous
Granular cell tumor	Second or third	Hypoechoic, homogeneous with smooth margins

EUS, endoscopic ultrasonography.

^{a)}First layer (the interface of the luminal fluid and the mucosa), second layer (the deep mucosa), third layer (the submucosa), fourth layer (the muscularis propria), and fifth layer (the serosa or adventitia).

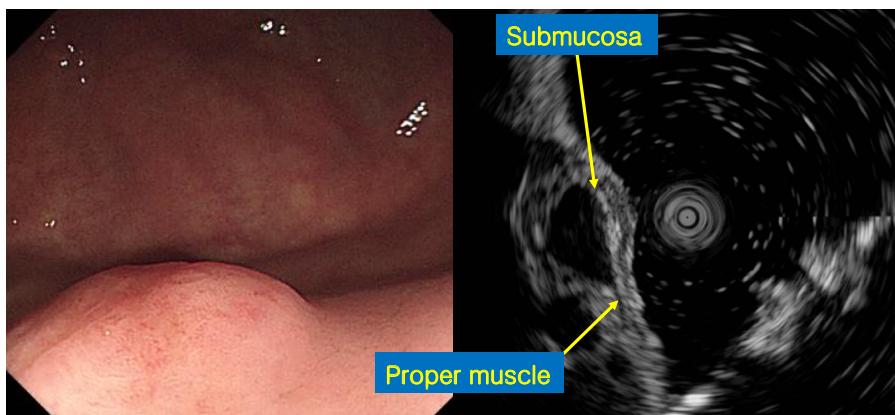
Differential diagnosis of SMTs

Table 1. Differential Diagnosis of Subepithelial Tumors by Endoscopic Ultrasonography Features

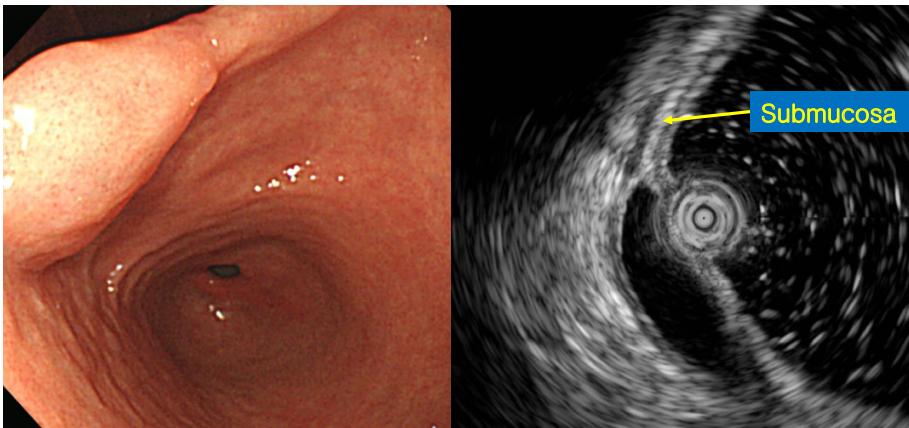
Subepithelial tumors	Wall layer of origin	Echogenicity with findings
Benign		
Leiomyoma	2 or 4	Hypoechoic, round or oval, well demarcated
Neural origin tumors	3 or 4	Hypoechoic, round or oval, well demarcated
Schwannoma		
Neuroma		
Neurofibroma		
Lipoma	3	Intensely hyperechoic, smooth margin
Lymphangioma	3	Anechoic
Cyst	3	Anechoic, compressible
Duplication cyst	Any or extramural	Anechoic
Ectopic pancreas	2 or 3	Hypoechoic, heterogeneous, ductal structure
Inflammatory fibroid polyp	2 or 3	Hypoechoic, homogenous or mixed
Granular cell tumor	2 or 3	Hypoechoic, oval, small (thickness <1 cm)
Varices	2 or 3	Anechoic, serpiginous or linear
Malignant/malignant potential		
Gastrointestinal stromal tumor	4 (rarely 2 or 3)	Hypoechoic
Lymphoma	2, 3, or 4	Hypoechoic
Carcinoid	2 or 3	Hypoechoic
Metastatic carcinoma	Any	Hypoechoic
Glomus tumor	3 or 4	Hypoechoic, heterogeneous, irregular margin

Moon JS. Clin Endosc 2016;49:220-225

Gastric SMT, fundus - GIST or leiomyoma

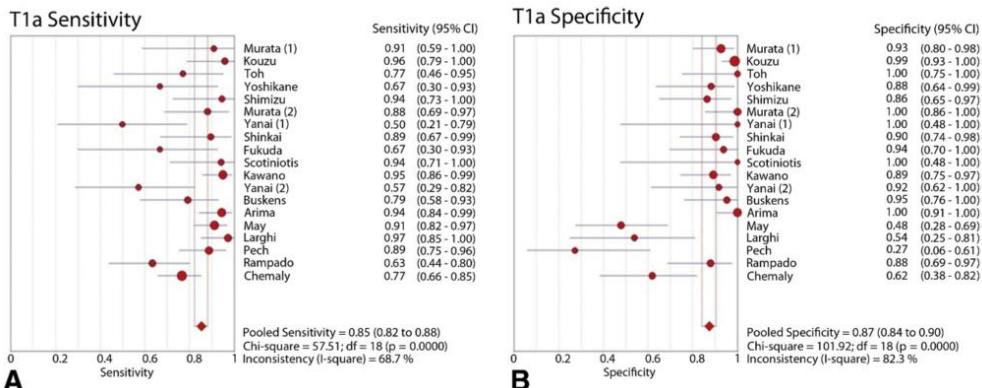


Gastric SMT, angle AW - Cystic lesion



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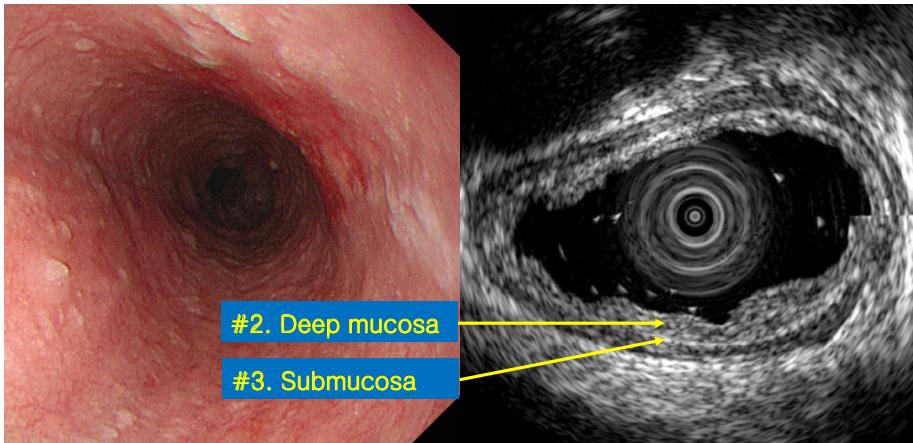
Accuracy of EUS in differentiating T1a vs T1b of superficial esophageal cancer



Pooled sensitivity and specificity = 0.85 and 0.87

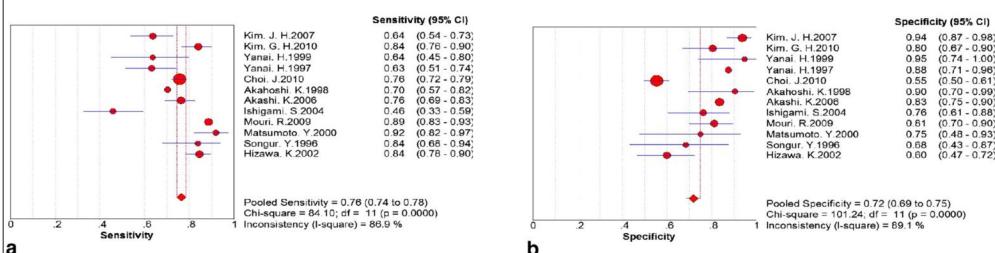
Thosani N et al. Gastrointest Endosc 2012;75:242-253

SESCC, M3



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Accuracy of EUS for T1a in EGCs



Pooled sensitivity and specificity = 0.76 and 0.72

Factors affecting accuracy of EUS

		Inaccurate diagnosis	
Factors	Understaging		
	Overstaging		
	Undifferentiated ¹ Small size ⁵ Miniprobe EUS ⁵	Mid one third location ¹ Large size (> 30 mm) ^{1,5} Radial EUS ⁵ Ulcer ⁵	

¹Kim JH et al. Gastrointest Endosc 2007;66:901-908

²Okada K et al. Surg Endosc 2011;25:841-848

³Yamamoto S et al. Gastroenterol Res Pract 2012;2012:194530

⁴Watari J et al. World J Gastrointest Endosco 2016;8:558-567

⁵Kim J et al. Surg Endosc 2018 [E-pub]

F/71, EGC IIa, pT1bN1 (SM3, LN1/47)

