

## 조기위암의 내시경 치료

김광하 부산의대

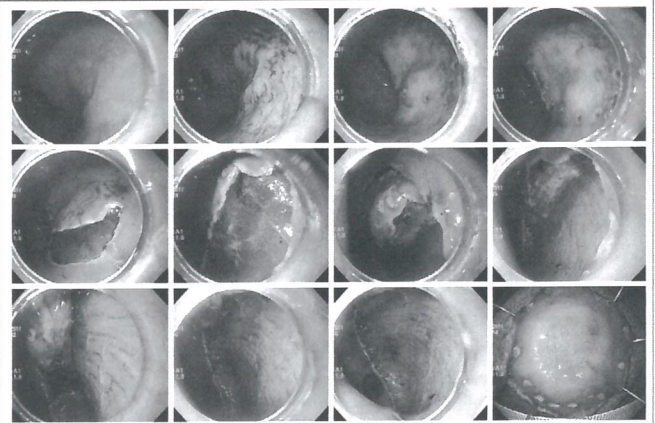
2019-1-26 大韓上部胃腸管. Helicobacter  
學會釜山慶南枝會第5回symposium.  
AGTI Hotel

### Endoscopic treatment for early gastric cancer

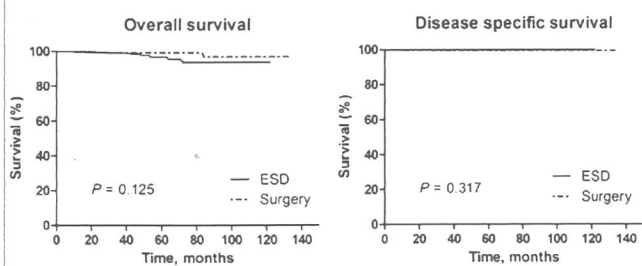
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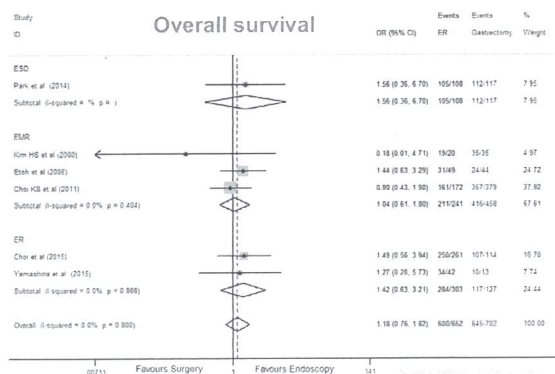
### Endoscopic submucosal dissection for EGC



### ESD vs. Surgery in PNUH



### Surgery vs. ER in EGC: Meta-analysis



## Successful endoscopic treatment for EGC



### Proper selection of patients



## Surgery for EGC

- Complete resection of lesion
  - Lymph node dissection
  - Metachronous cancer
- If the probability of LN metastasis is less than 2%, is ESD possible?



## ESD indication for EGC

Depth Histology	Mucosal cancer				Submucosal cancer	
	Ulcer (-)		Ulcer (+)		SM1	≥SM2
	≤20	>20	≤30	>30	≤30	any size
Differentiated						
Undifferentiated						

Guideline criteria for EMR      Surgery  
 ■ Guideline criteria for ESD      ■ Consider Surgery

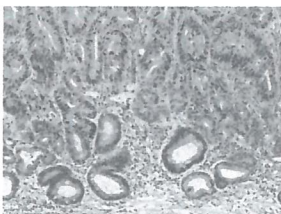
Gastric Cancer 2014, 2015

## Successful treatment for EGC

- Histologic diagnosis
  - Differentiated-type vs. Undifferentiated-type
- Tumor depth
  - Mucosa vs. Submucosa
- Lateral margin
- Lymph node metastasis

## 1. How to predict histologic diagnosis?

### Differentiated-type



YES

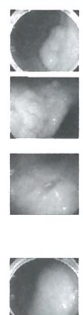
### Undifferentiated-type



NO



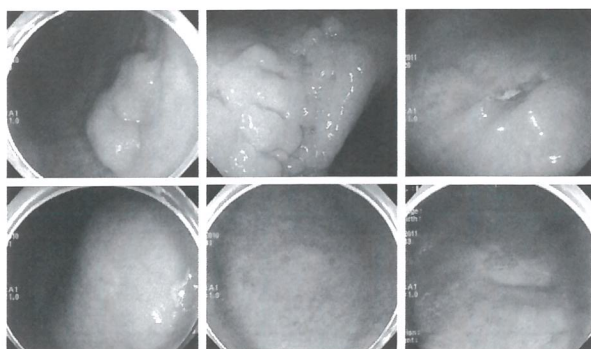
## Macroscopic findings



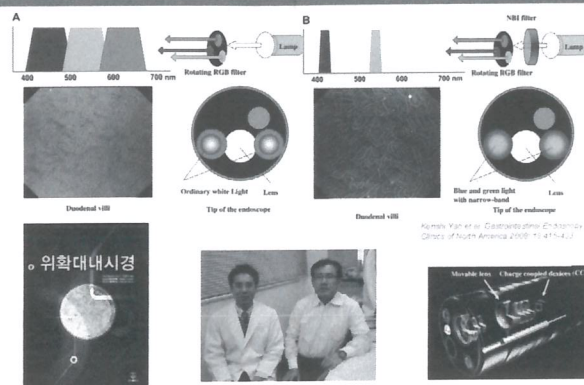
Gastric Cancer 2014, 2015



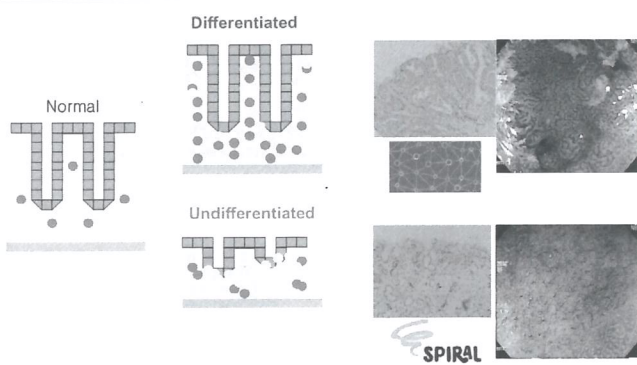
## Differentiated vs. undifferentiated



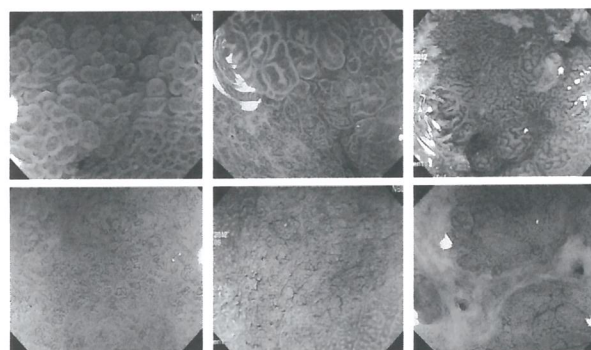
## Is it possible to magnify the mucosa?



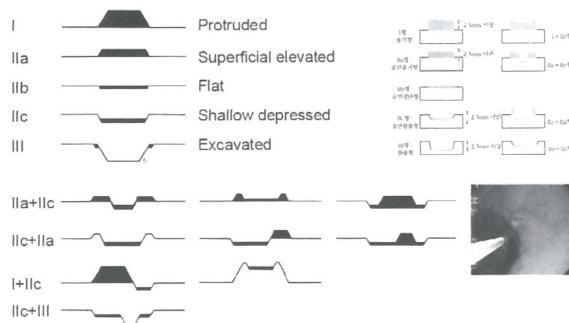
## Prediction for histologic subtype



## ME-NBI Differentiated vs. Undifferentiated

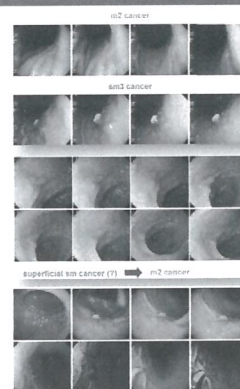


## 2. How to predict EGC depth?

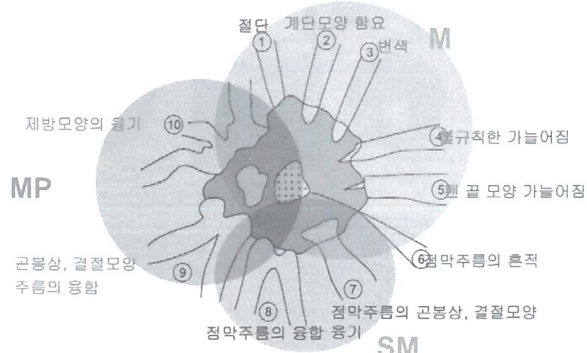


## To highlight the EGC depth

- To control the volume of air inflation
- To use the peristalsis
- Chromoendoscopy
- Various views



## Endoscopic findings to predict EGC depth



## 조기위암의 심달도 진단 정확도

- 용기형 : 83.6%
- 함요형 : 77.4%

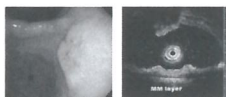


Final depth :  
por2, sm3

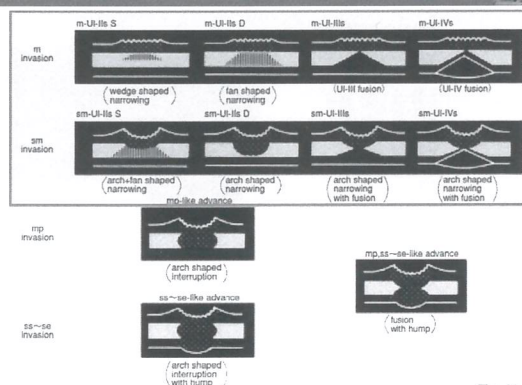


## Endoscopic ultrasonography (EUS)

- Endoscopy
  - GI tract surface image
- Ultrasonography
  - Image of GI wall & adjacent extramural structures
  - High resolution image in near field with limited penetration depth (1-2 cm to 5-6 cm)



## Kida's classification



## EUS for EGC

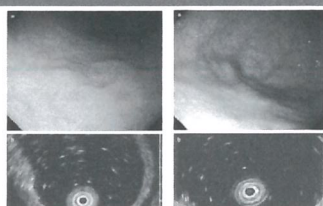
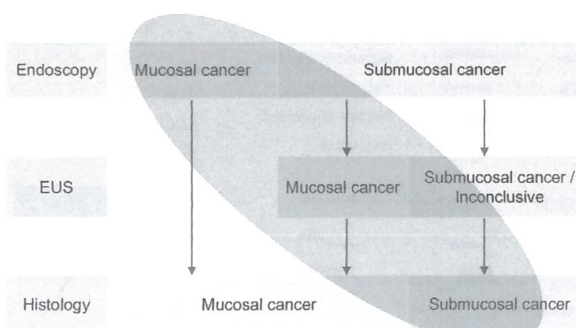


Table 4 Accuracy of endoscopic submucosal dissection (ESD) for predicting cancer invasion according to the accepted and extended indications for endoscopic resection

Histology	Mucosal cancer				Submucosal cancer	
	Depth		Depth		SM	>SM
	Ucer (-)	Ucer (+)	Ucer (-)	Ucer (+)	≤30	Any size
Differentiated	40/41 (97.6%)	18/20 (90.0%)	13/14 (92.9%)	3/4 (75.0%)	3/7 (42.9%)	22/28 (78.6%)
Undifferentiated	6/6 (100.0%)	10/12 (83.3%)	9/18 (50.0%)		12/16 (75.0%)	

Guideline criteria for endoscopic mucosal resection. III. Guideline criteria for endoscopic submucosal dissection. III. Consider surgery. Surgery.

## When to perform EUS?



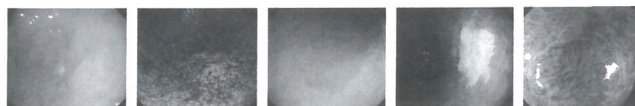


### 3. How to delineate lateral margin?

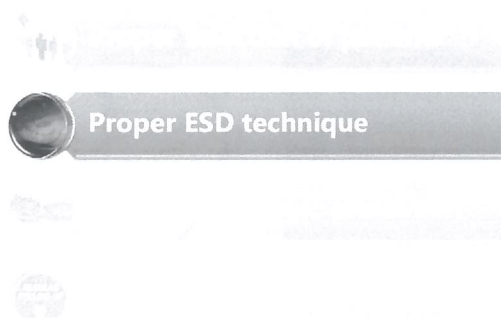


### Lateral margin confirmation

- White light endoscopy
- Indigo carmine chromoendoscopy
- Dynamic chemical endoscopy by acetic acid
- Acetic acid – indigo carmine chromoendoscopy
- Magnifying endoscopy



### Successful endoscopic treatment for EGC



### For successful ESD

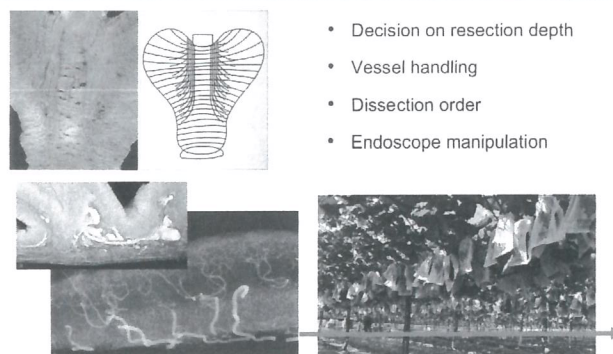
- To understand the anatomic characteristics of the stomach
- To understand the features of knives and ESU setting
- To use the gravity
- To use tips to improve ESD visual field
  - Water-jet function
  - Multi-banding scope
  - Traction method: clip, dental floss, magnetics

### Planned ESD

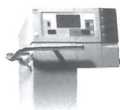
### ESD difficulty : Antrum << Body

		Antrum	Body
	Thickness	Thin	Thick
Mucosa	Microvessel density	Low	High
	Mucosal tension	Strong	Weak
	Connective tissue	Loose	Tight
Submucosa	Vessel density	Low	High
	Fibrosis	Low	High

### Why ESD is difficult in body ?

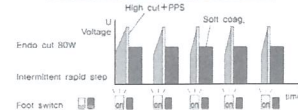
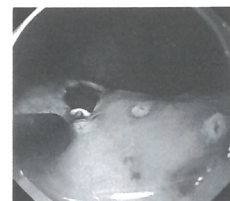
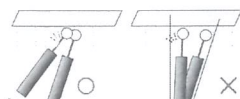


## My electrosurgical unit setting

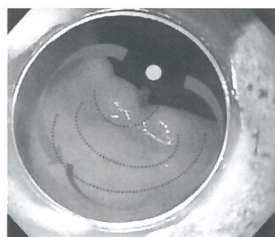


Precut	IT knife	Endo cut I	Effect 3 Duration 3 Interval 2
Dissection	IT knife	Swift coagulation	Effect 4, 100W
Coagulation	Coagrasper	Soft coagulation	Effect 4, 80W

## Rapid step technique

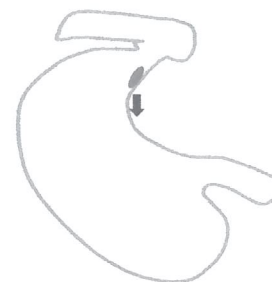
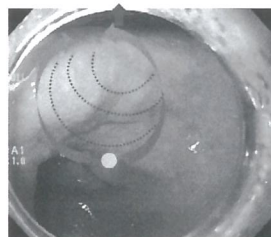


## Antrum, GC



- Easy to perform ESD
- Horizontal precut : rapid step technique

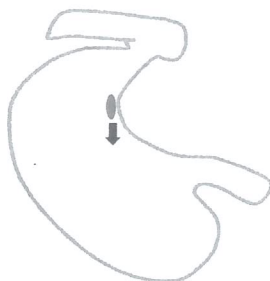
## Antrum, LC



- Difficult to perform ESD
- Most dependent portion → water sink

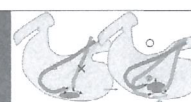
## hard push technique

### Angle



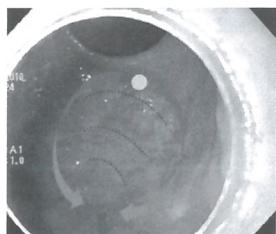
- Not difficult to perform ESD than we thought
- Be careful for crossing the angle

### GC side of body



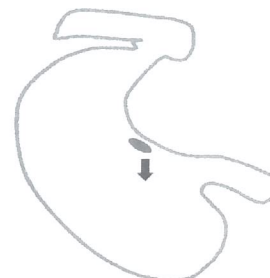
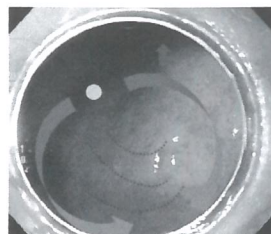
- Anatomic features
  - Difficulty in retroflexion
  - Poor fixation of muscle layer
  - Fibrosis (++)
  - Vascularity (++)
- Technical tips
  - IT knife < end-tip knife
  - First approach to distal side
  - Try to move lesion to AW/PW side

## Lower body, GC



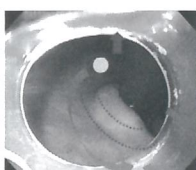
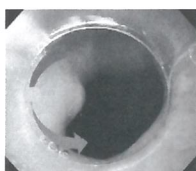
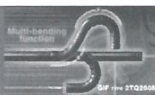
- More difficult than we thought in forward view
- Retroflexion procedure is better

## Midbody, LC-PW



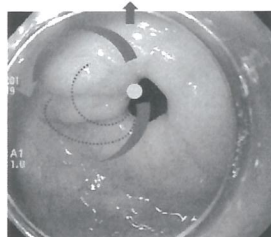
- Shift the lesion from LC to PW
- Use the gentle rotation like U-turn

## Cardia



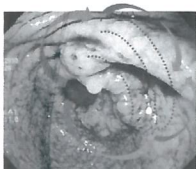
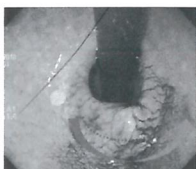
- Esophagus → Stomach
- Bleeding control is important
- Don't worry about perforation

## Prepylorus



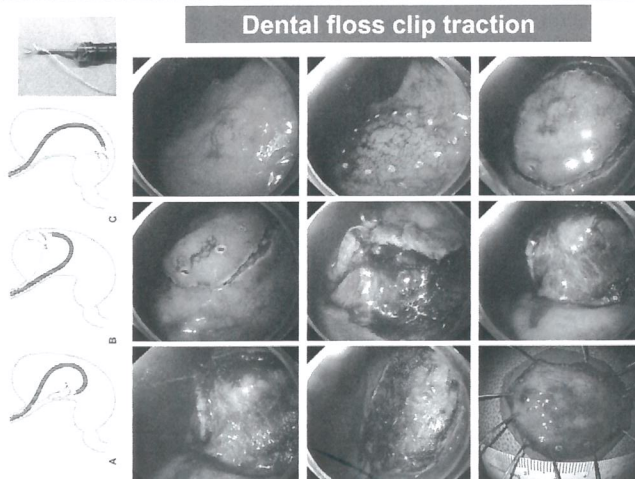
- Precut the pyloric side first
- Duodenal U-turn is not necessary needed

## Prepylorus to duodenum




- Duodenum → Stomach
- Don't worry about perforation

## Dental floss clip traction







Successful endoscopic treatment for EGC




TO BE  
CONTINUED




Proper patient selection



Proper ESD technique




Proper pathologic evaluation




Proper follow-up


Successful endoscopic treatment for EGC




Proper selection of patients



Proper ESD technique



Proper pathologic evaluation



Proper follow-up