

# ***Basic techniques and know-how for upper GI ESD***

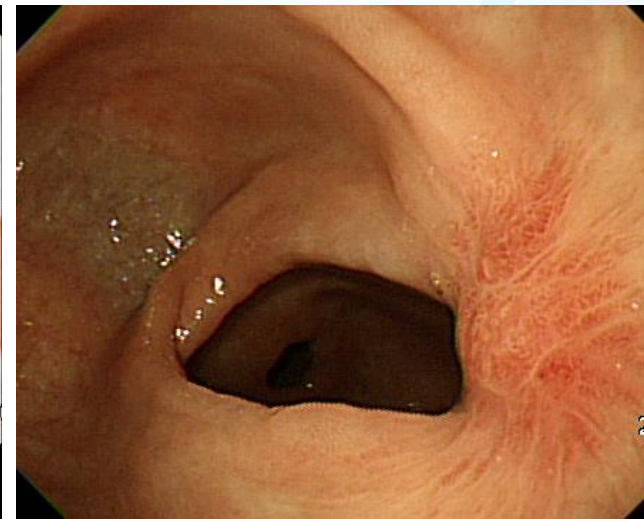
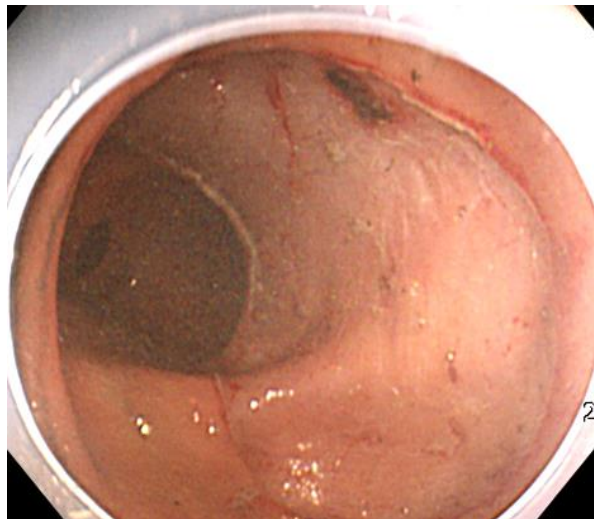
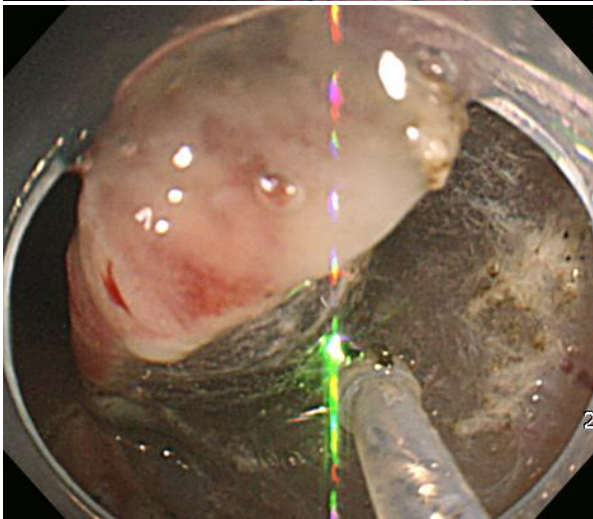
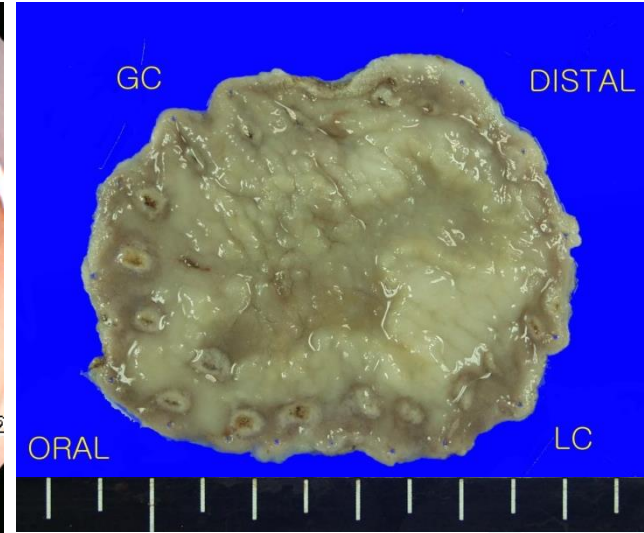
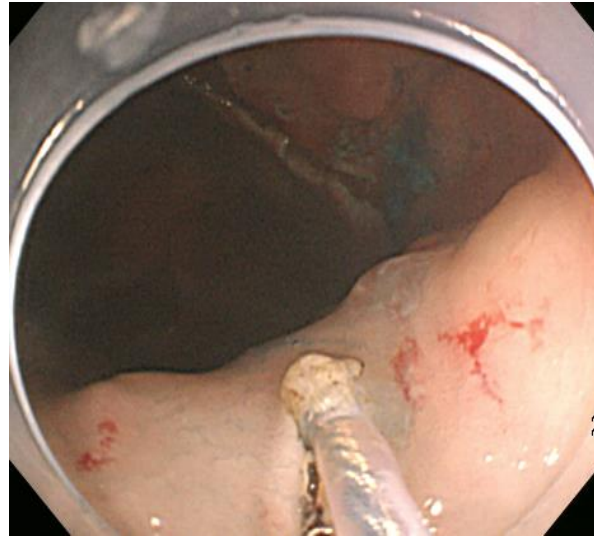
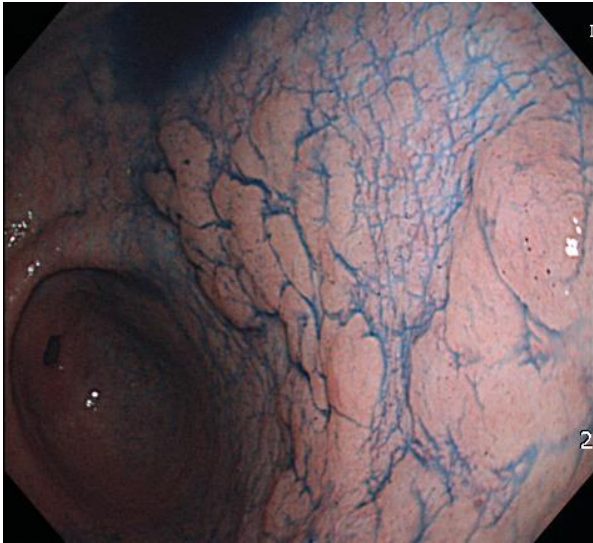
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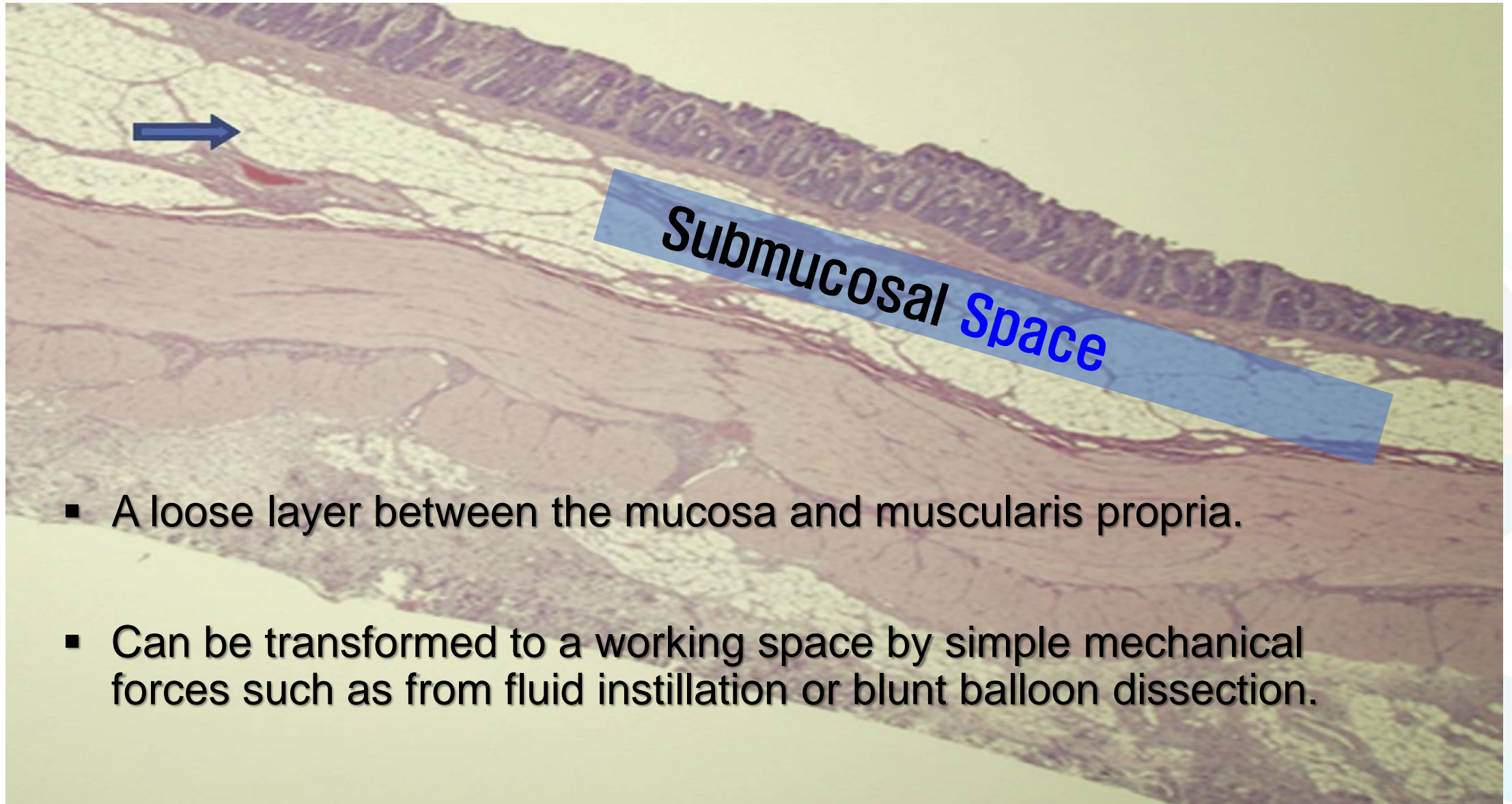
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# Endoscopic submucosal dissection



- Enable to resect wider
- Higher en bloc resection rate
- Complete precise pathologic evaluation
- Lower local recurrence
- Time consuming
- Risk of bleeding, perforation
- Longer learning curve

# Submucosa



- A loose layer between the mucosa and muscularis propria.
- Can be transformed to a working space by simple mechanical forces such as from fluid instillation or blunt balloon dissection.

# Various aspects of ESD

## Characteristics of lesion

- Size, shape, fibrosis, differentiation, invasion depth
- Accurate pre-op diagnosis
  - Location

## Technical aspect of Endoscopist

- Experience & skill
- Management of complication

## Knives & accessories

IT, flex, hook, dual knife, Coagrasper, Cap, Specific endoscope, etc  
**Electro-surgical unit**

## Oncologic aspect of the neoplasm

- Chance of cure by minimal invasive treatment
  - Risk of recurrence & metastasis
    - Survival

## Patients-related factors

- Patient experience
  - Medical cost
- Other treatment options
  - QoL

# ESD Training system

<b>1<sup>st</sup> step Observer</b>	<b>2<sup>nd</sup> step Resident</b>	<b>3<sup>rd</sup> step Beginner</b>	<b>4<sup>th</sup> step Junior class</b>	<b>5<sup>th</sup> step Senior class</b>
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Accumulation of basic endoscopic techniques and knowledge
Participation and presentation at the official meeting
Observation and assistance of ESD, Image training

Animal training using resected porcine stomach	
Learning of available method	Innovation of new methods

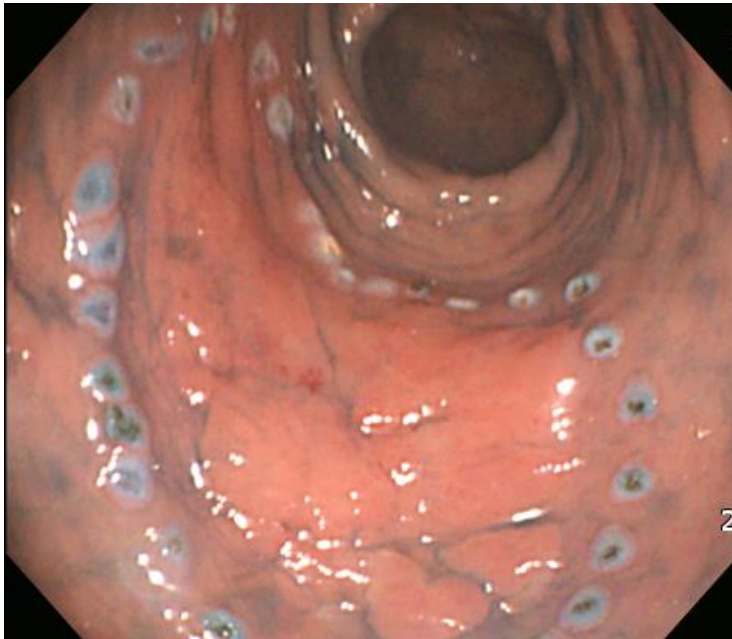
ESD under supervision of experts			
Gastric antrum	Gastric body	Gastric cardia Rectum	Esophagus Colon

ESD with one's responsibility		
Gastric antrum	Gastric body	Gastric cardia Rectum



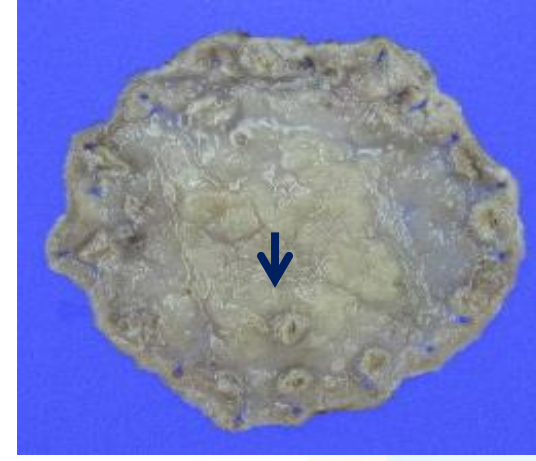
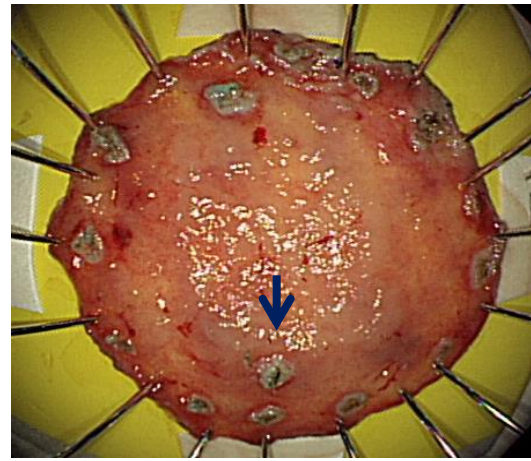
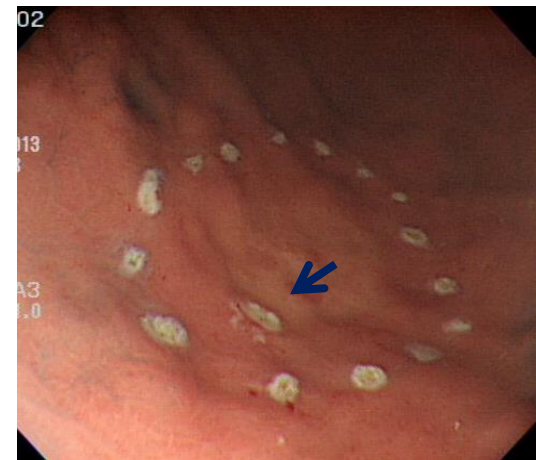
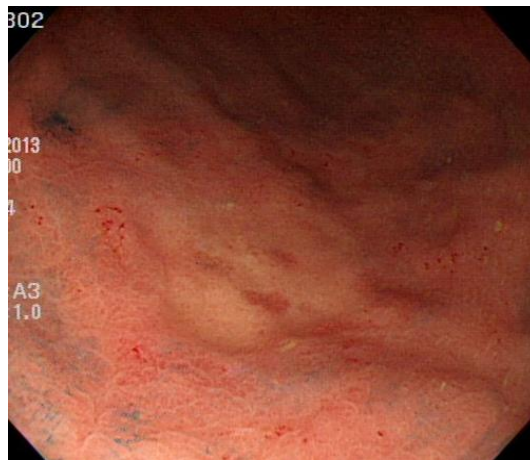
# Marking

- APC or non-insulated knives
- 5 mm apart from the margin of the lesion
- 3- 5mm apart from each spot



# Indicator marking

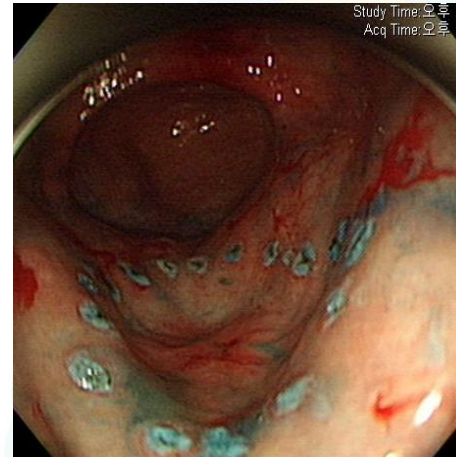
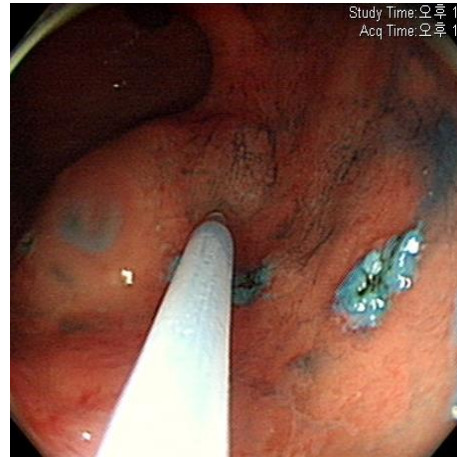
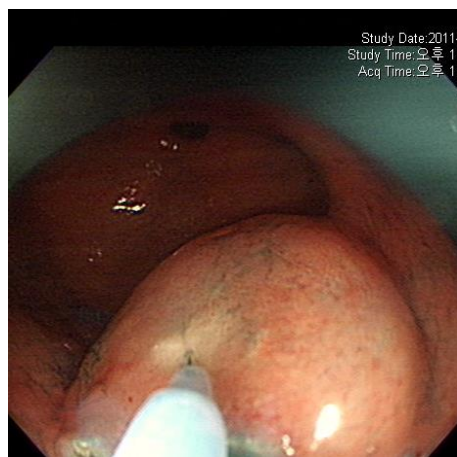
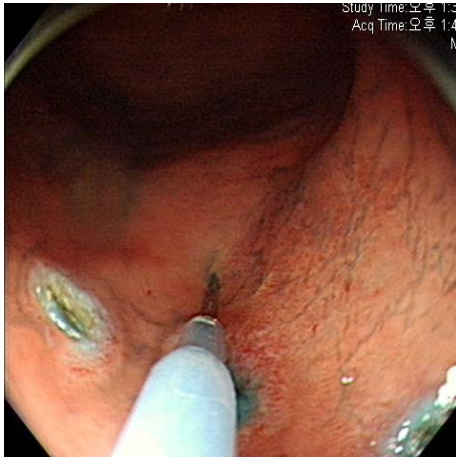
- Distinguish proximal or distal direction in specimen





# Submucosal Injection

- 45 – 75° in stomach
- Start from distal to proximal side
- Multiple submucosal injection - 2-3 cc x 4-6 points

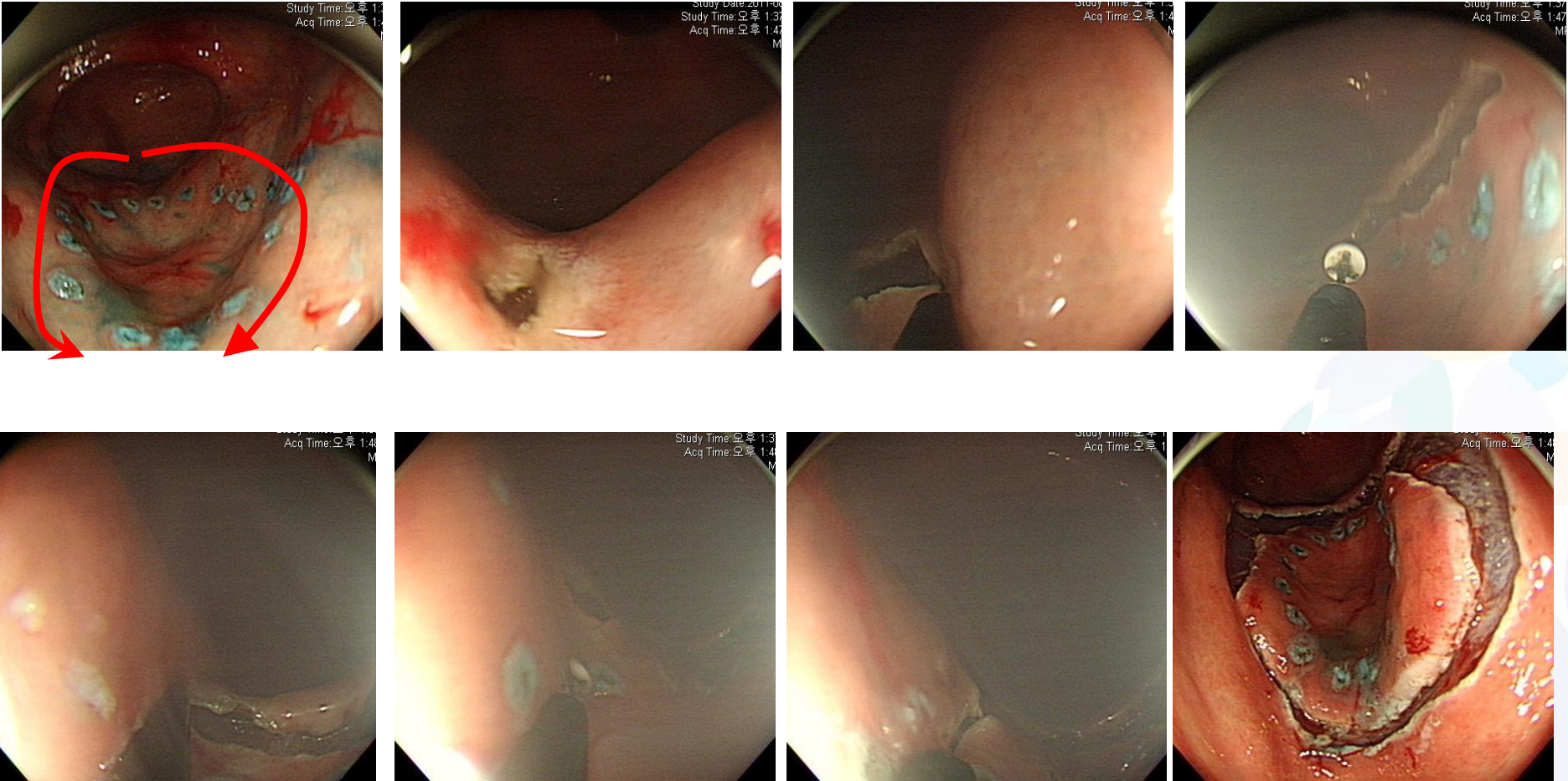


# Incision & Dissection

- Different tips according to various knives



# Mucosal Incision – IT knife

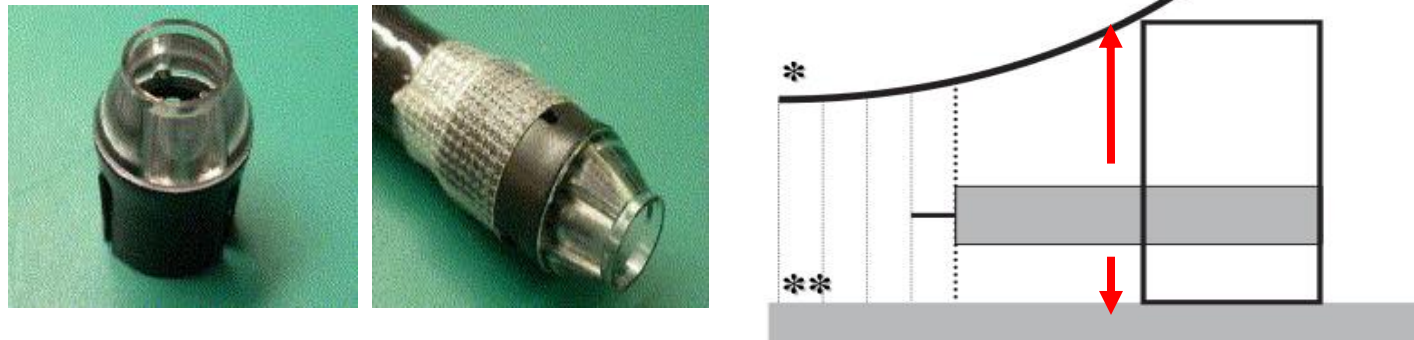


# Transparent Hood in Dissection

Soft transparent hood  
- Olympus -

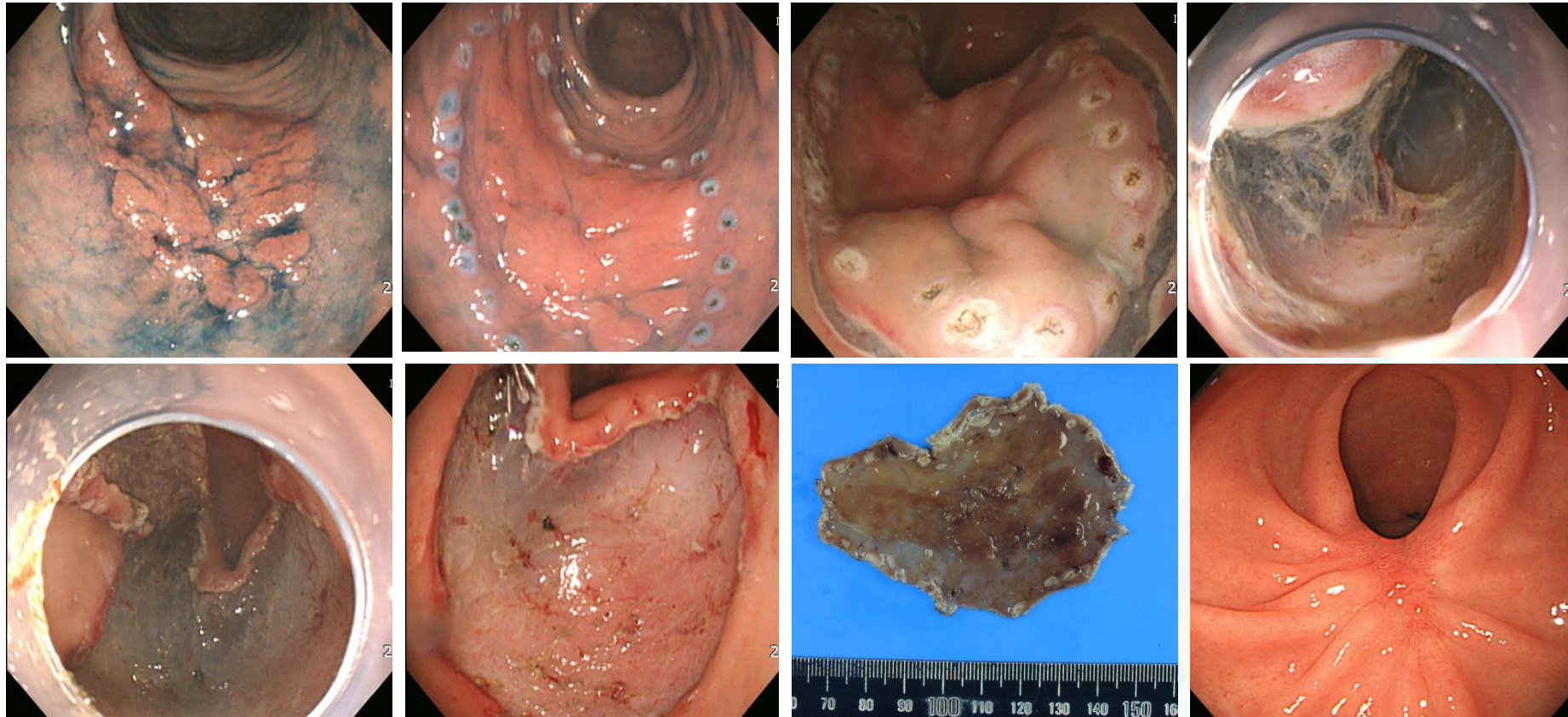


ST hood  
- Fuji -



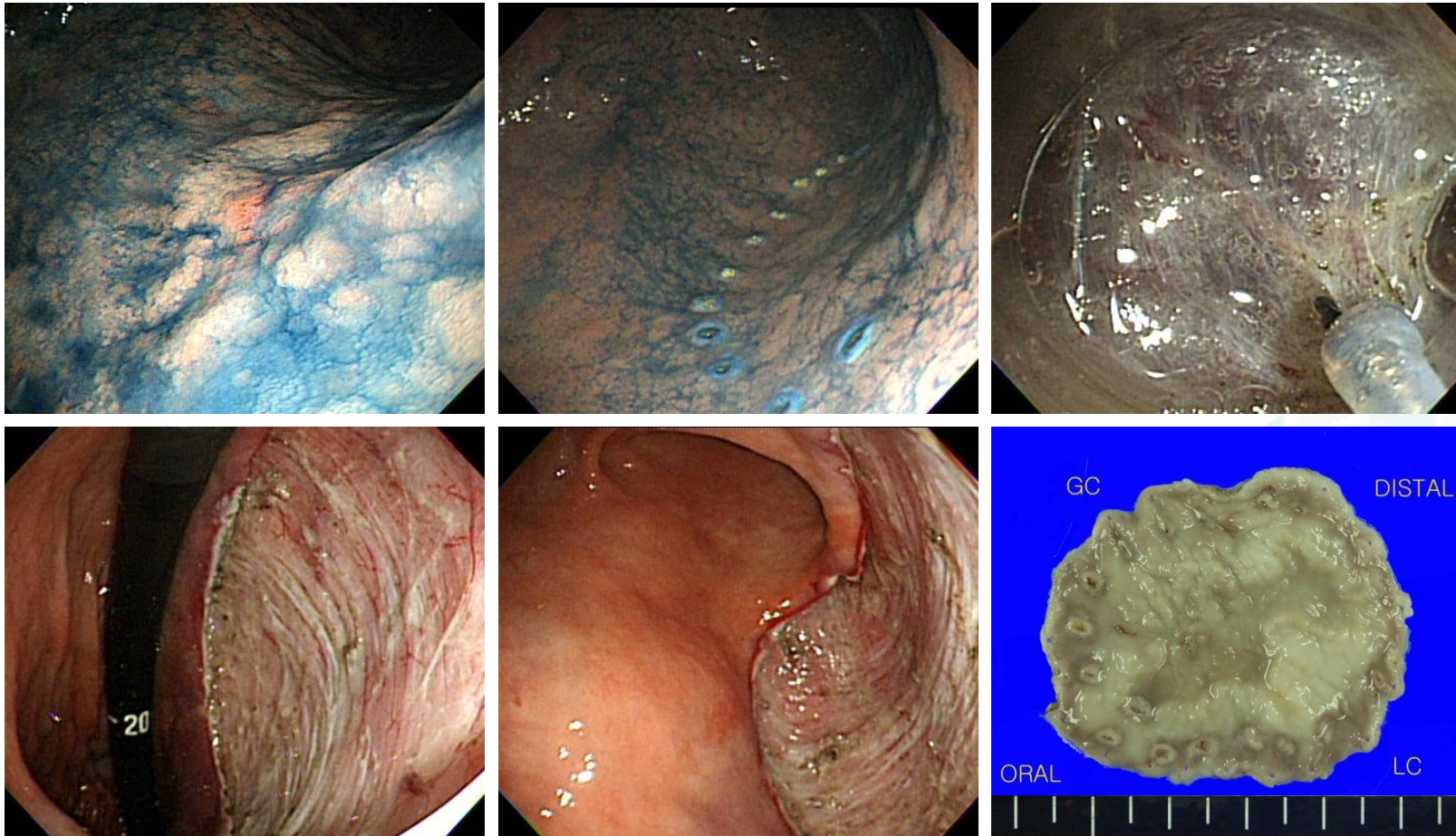
- Overcome blind spots in view of endoscope
- Close approximation
- Approach under direct vision
- Counter - traction

# Large lesion of antrum

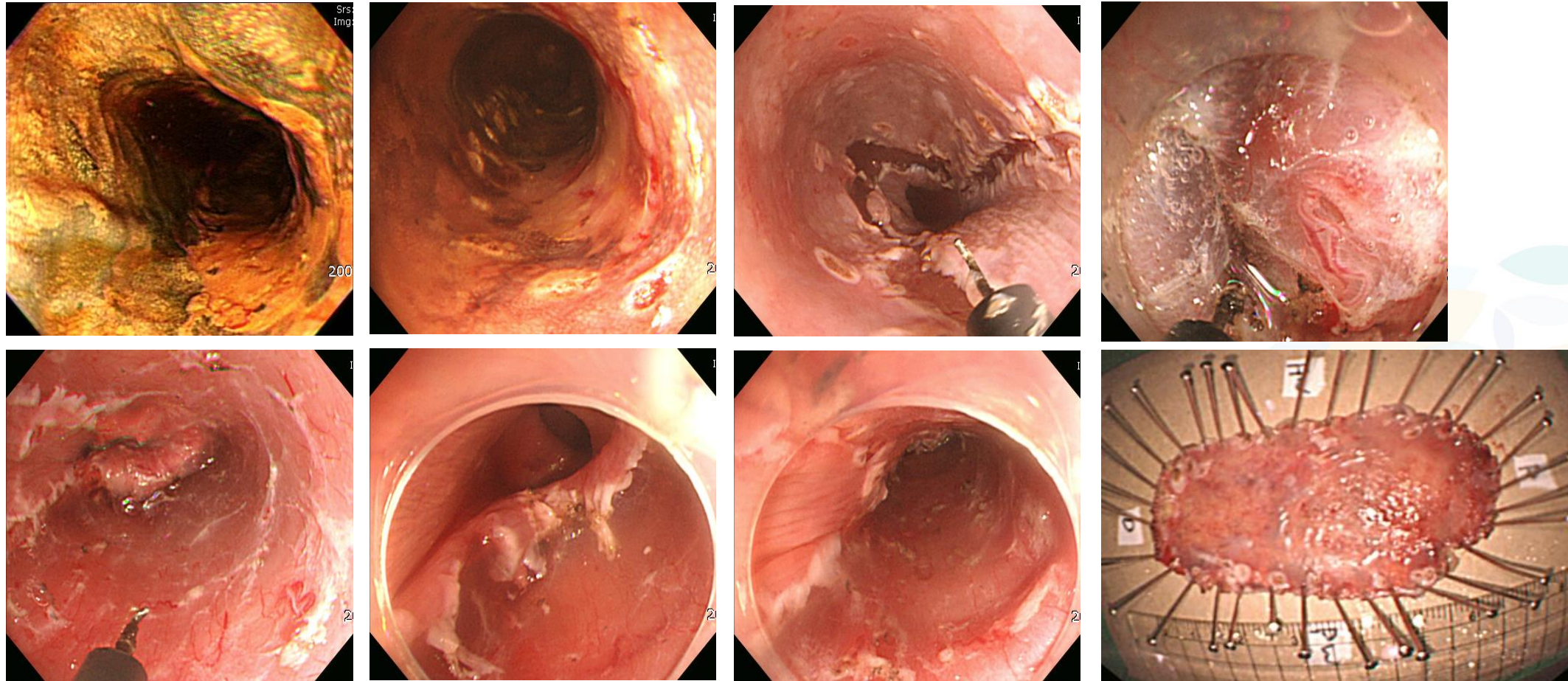


- Specimen = 8.2 cm \* 6.5 cm / Tumor size = 5.0 cm \* 3.9 cm
- Adenoca WD / Lamina propria / Resection margins (-)
- LV invasion (-)

# Large lesion of body PW



# Esophageal ESD



- Specimen size = 6.4 cm \* 3.6 cm / Tumor size = 3.0 cm \* 2.5 cm
- Resection margin (-) / LV invasion (-)
- Invasive squamous cell carcinoma with MM invasion

# Conclusions

- To be a Expert in ESD is not a easy work.
  - Begin under supervision of experts !
- Always, back to the basics !!!
- ESD requires not only endoscopic skill, but also a **good understanding** of
  - Basic biology, natural history, treatment option of GI neoplasm
  - Various endoscopic devices & electrosurgical unit
  - Management in various unexpected situation and complication