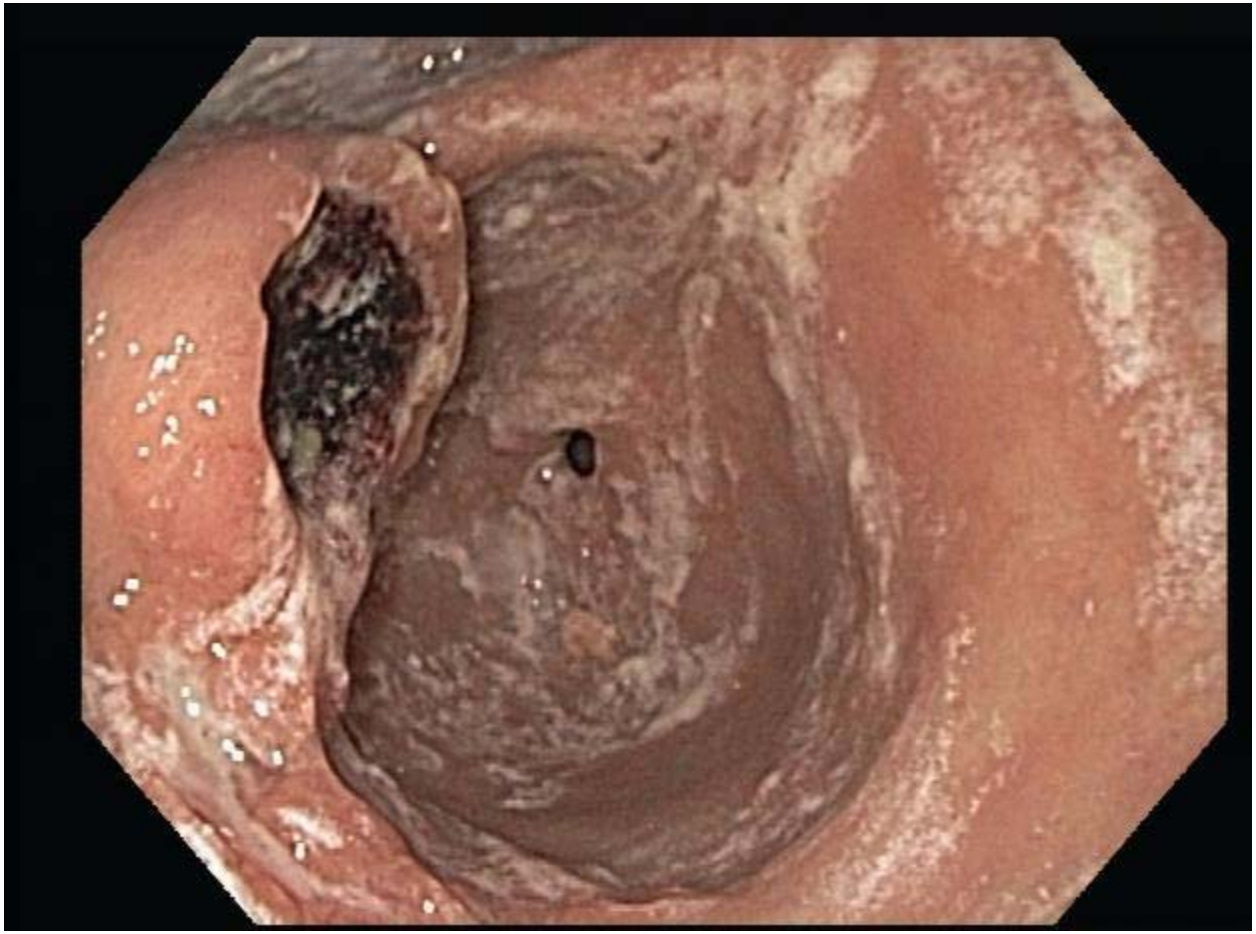
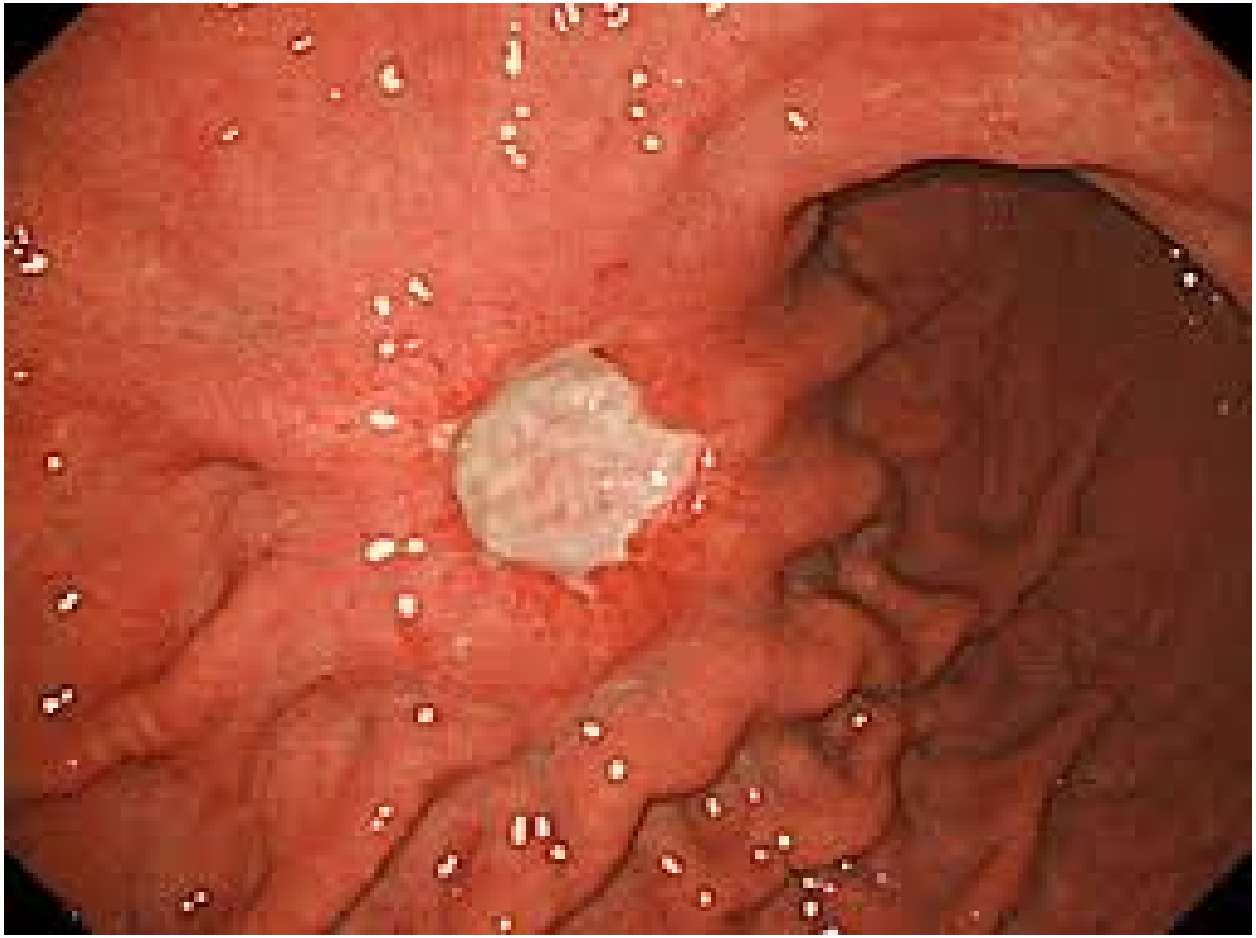
The role of Endoscopy in Gastric Cancer

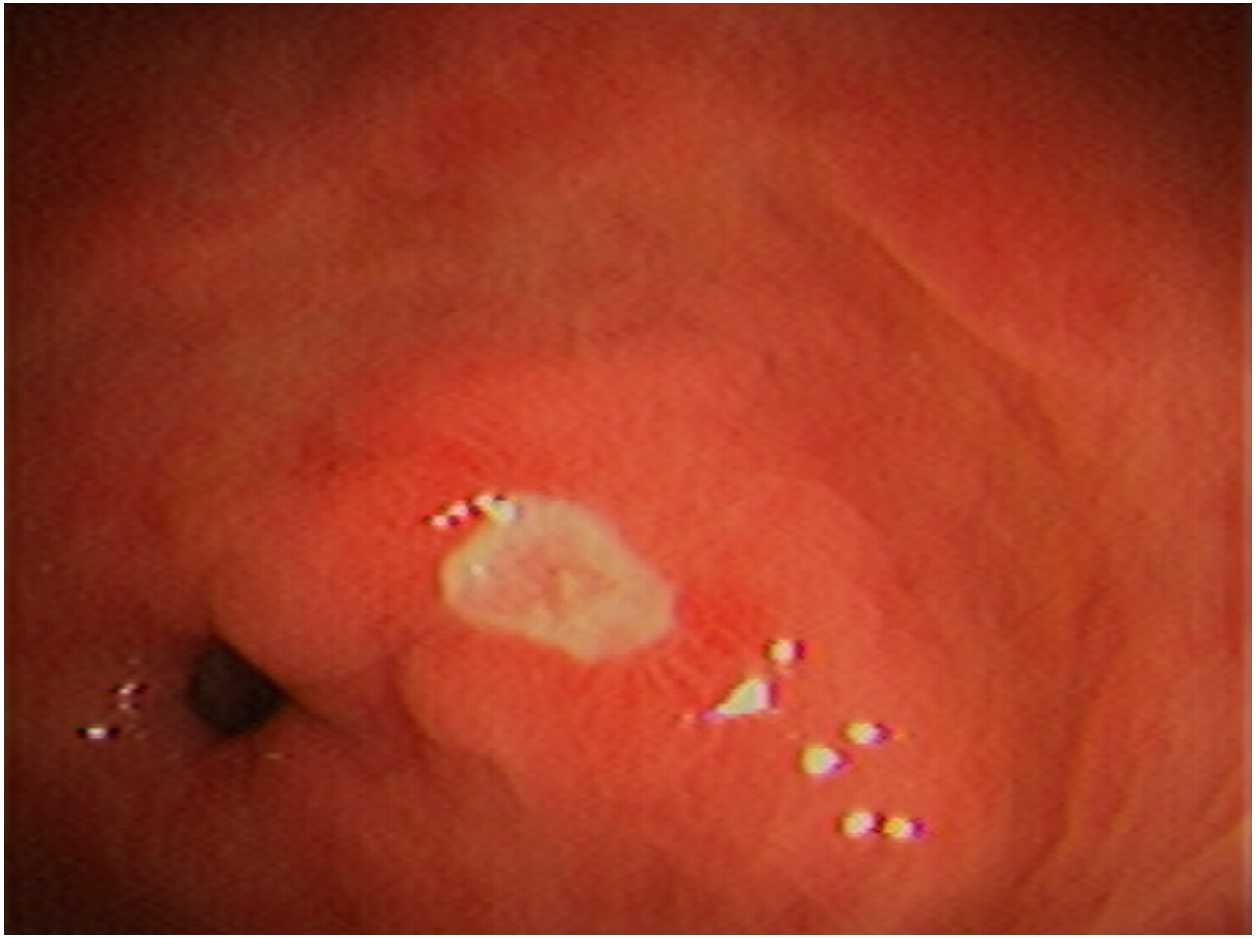
Fergal Donnellan
Gastroenterologist
VGH

- Endoscopy
- Endoscopic Ultrasound
- Linitus Plastica
- Early Gastric Cancer

Endoscopic biopsy







- All suspicious ulcers should be biopsied

- Consider patient's history and demographic features

- Numerous biopsies
- Increasing from one to seven increases sensitivity from 70% to 98%

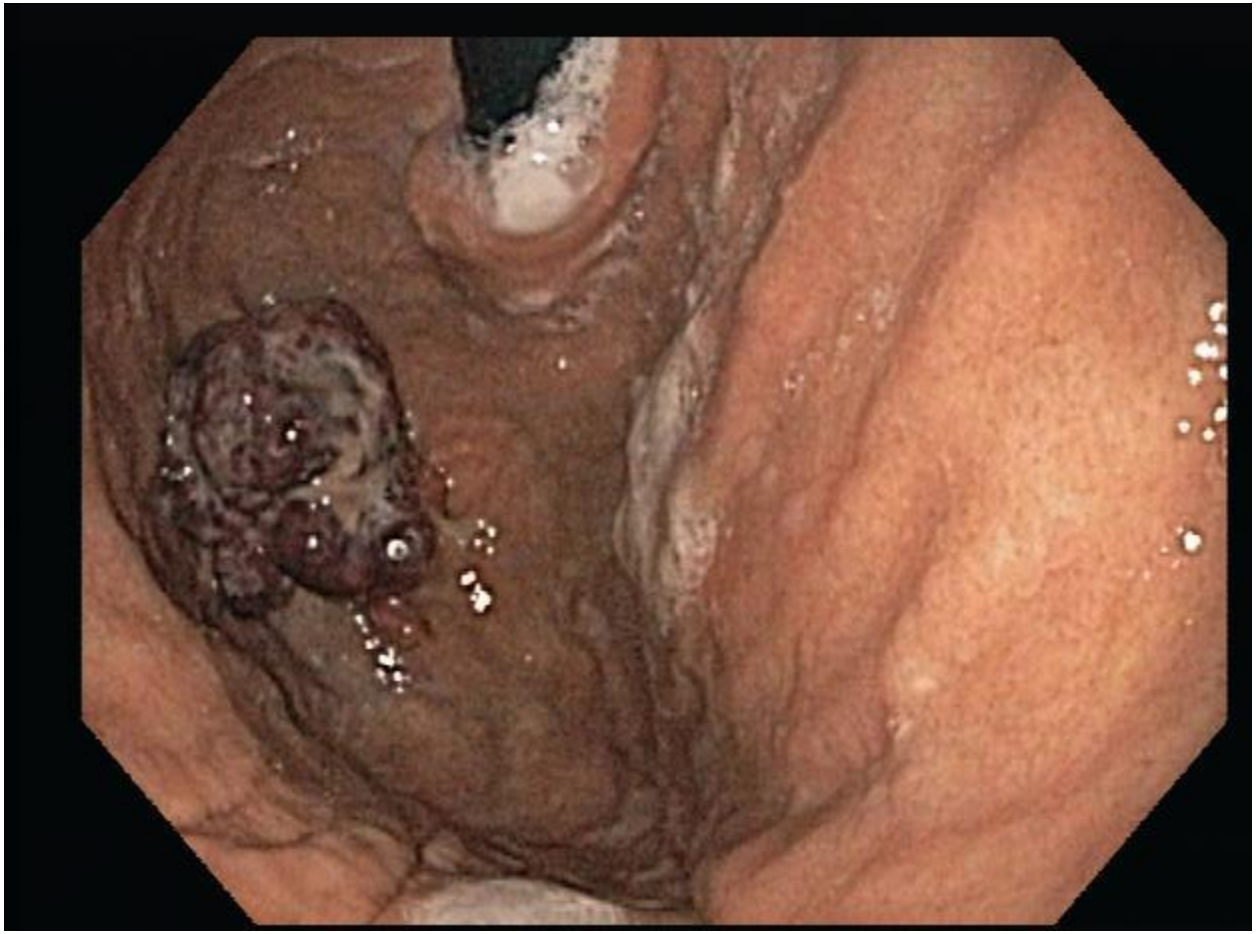
- Cytology adds little to the diagnostic yield and is not routinely recommended

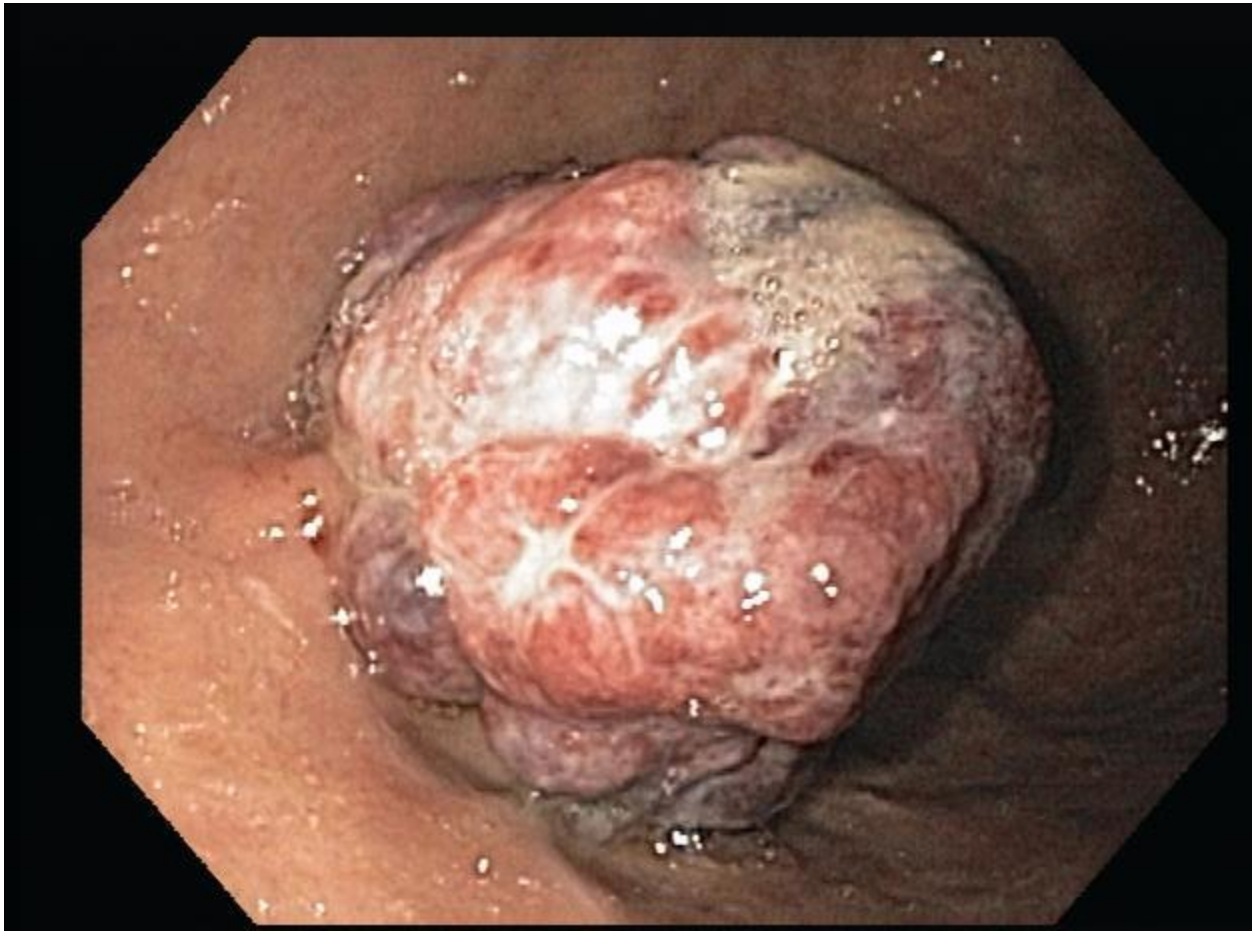
- Repeat endoscopy following acid suppression

Endoscopic Location

- Tumors arising at the GE junction, or in the cardia of the stomach within 5 cm of the GEJ that extend into the GEJ or esophagus (the so-called Siewert III) are staged as esophageal cancer

- Tumors that are within 5 cm of the GEJ that do not extend into the esophagus are staged as gastric cancers





Staging

Primary tumor (T)

Tis	Carcinoma in situ: intraepithelial tumor without invasion of the lamina propria
T1	Tumor invades lamina propria, muscularis mucosae, or submucosa
T1a	Tumor invades lamina propria or muscularis mucosae
T1b	Tumor invades submucosa
T2	Tumor invades muscularis propria
T3	Tumor penetrates subserosal connective tissue without invasion of visceral peritoneum or adjacent structures
T4	Tumor invades serosa (visceral peritoneum) or adjacent structures

- T1 and T2
  - Consideration for surgery

- T1a and T1b
  - Consideration for endoscopic resection

- No single gold standard
- EUS
- CT
- MRI
- PET

EUS and T Stage

- EUS staging versus histopathology
- Sensitivity and Specificity rates for distinguishing T1 from T2 cancers with EUS were 85 and 90%, respectively
- Sensitivity and Specificity for distinguishing T1/2 versus T3/4 tumors were 86 and 90%, respectively

EUS and N Stage

- Sensitivity and specificity rates for detection of malignant lymph nodes were 83 and 67%, respectively
- EUS guided FNA possible
- EUS cannot be considered optimal for distinguishing positive versus negative lymph node status

EUS and M Stage

- Routine use of staging EUS can sometimes alter the therapeutic plan because of the finding of otherwise occult distant metastases

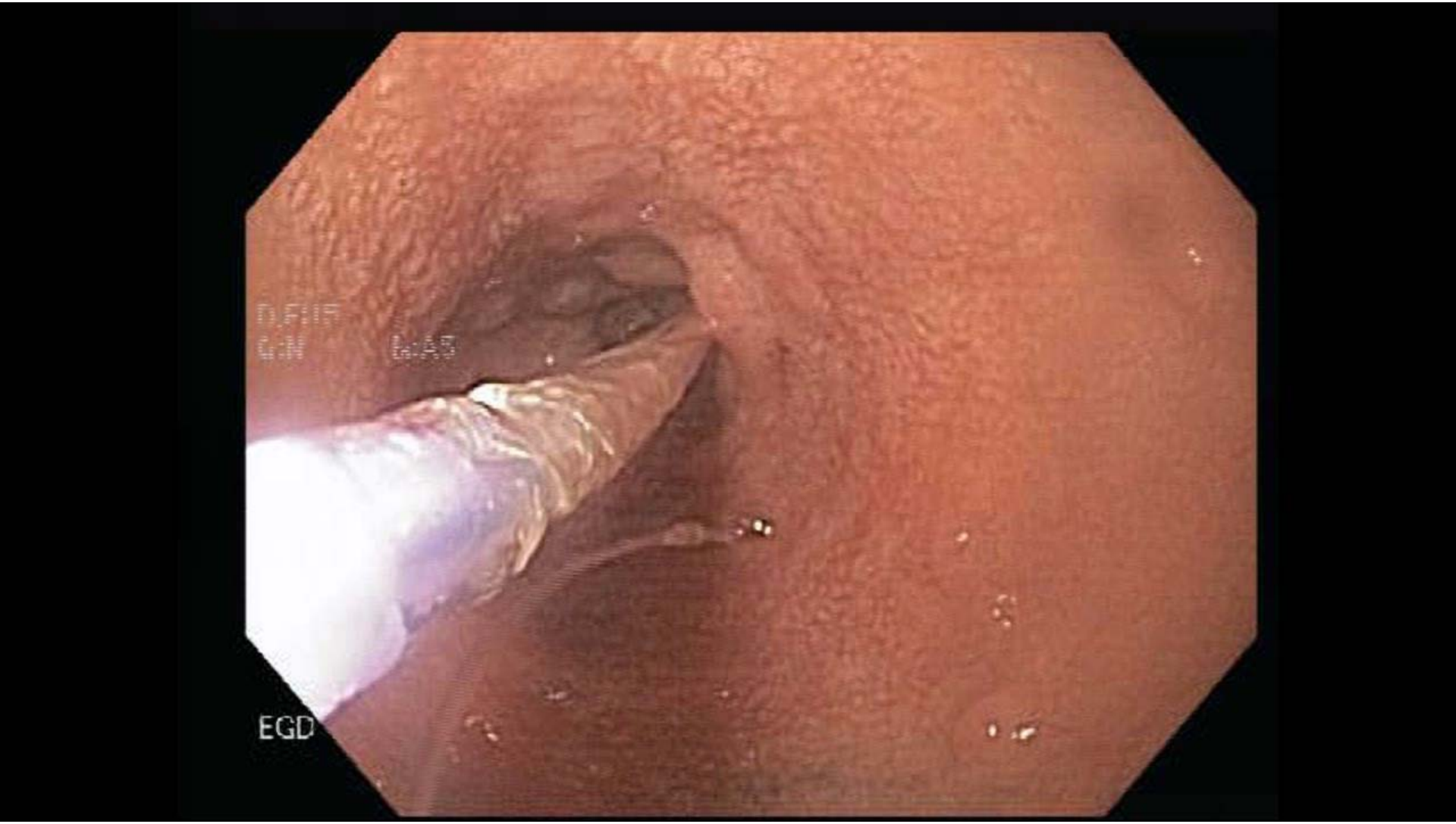
- Useful to identify and biopsy ascites or left lobe liver lesions

	T stage	**N stage**
EUS	75% - 92%	30 – 90%
CT	43 – 82%	
MDCT	77.1 - 88.9%	67.1%
MRI	53% - 87.9%	50% - 65.4%
PET	58.1% - 95.9%	55.1 – 73.3%

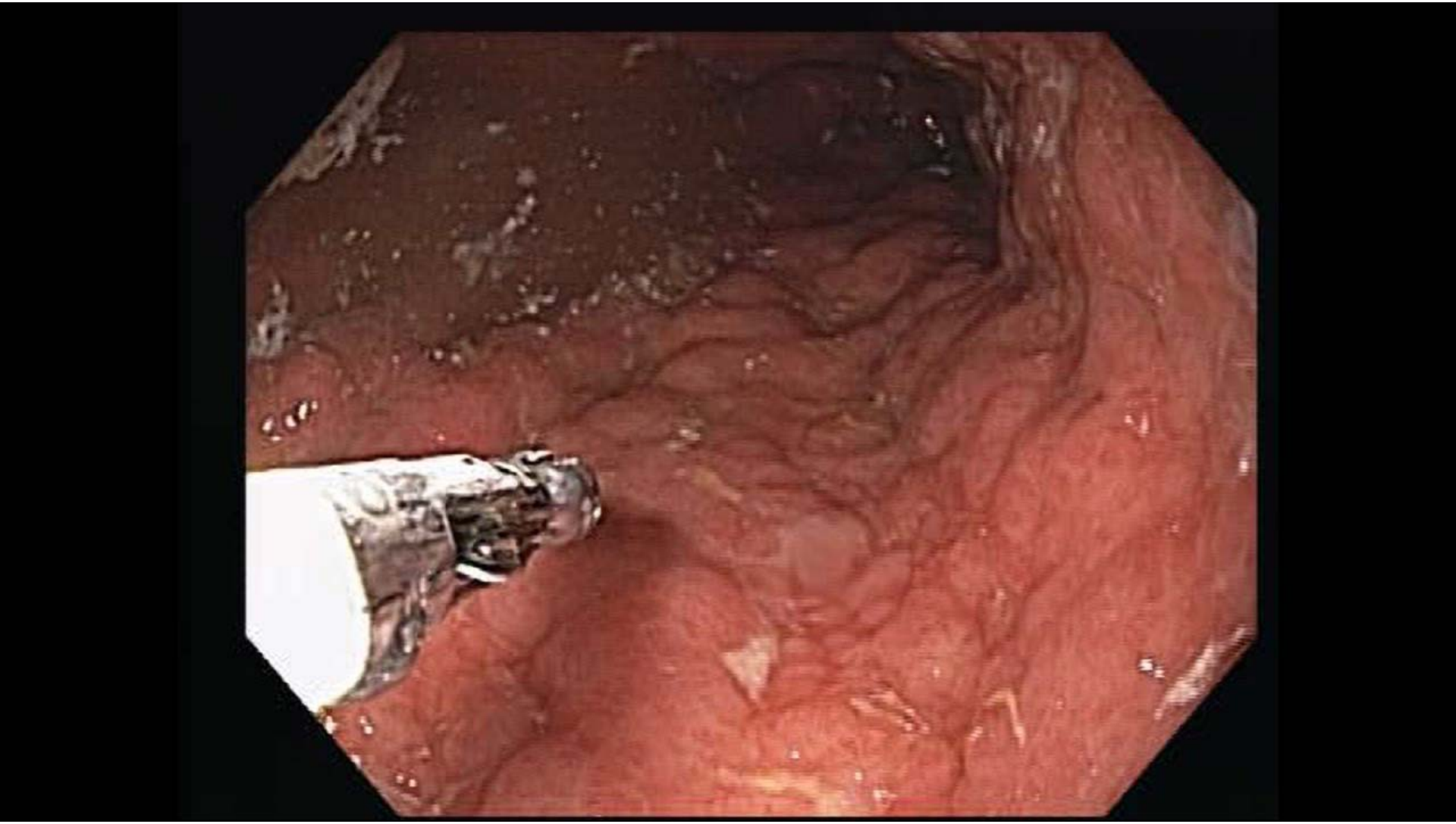
- Both EUS and MDCT show high accuracy for overall and each T stage
- MRI seemed to have better performance, but the number of studies is limited
- FDG-PET is not able to properly evaluate the depth of invasion
- In preoperative N staging, the diagnostic accuracy of EUS, MDCT, and MRI is not sufficient to appropriately assess LN status
- In preoperative M staging, MDCT and FDG-PET showed similar diagnostic accuracies

EUS should be considered as part of the staging process for gastric cancer and complimentary to other modailities

Linitus Plastica
(Diffuse type gastric cancer)


EGD

- Superficial mucosal biopsies may be negative
- Tunnelled or bite on bite biopsies
- EUS guided mucosal biopsies
- EUS FNA/FNB



Early Gastric Cancer

- Defined as an adenocarcinoma that is restricted to the mucosa or submucosa, irrespective of lymph node metastasis (T1, any N)

- Incidence of early gastric cancer (EGC), as well as the proportion of gastric adenocarcinomas that are EGCs, vary depending on the population

- In Japan,50% of gastric adenocarcinomas are EGC

- In Korea, 25 to 30% of gastric adenocarcinomas are EGCs

- In Western countries, up to 20% of gastric adenocarcinomas are EGCs

- Endoscopic resection may be considered both a staging procedure and a treatment
- En bloc resection permits T staging of the tumor
- Limited by risk of lymph node metastases

Predictors of Lymph Node Metastasis in Western Early Gastric Cancer

J Gastrointest Surg. 2015

- 67 patients with pT1 lesions underwent surgery without neoadjuvant treatment

- LN metastases were present in 15/67 (22 %) pT1 tumors
  - 1/23 (4 %) T1a tumors
  - 14/44 (32 %) T1b tumors

- Lymphovascular invasion and positive nodes on EUS were the only factors that predicted LN metastasis

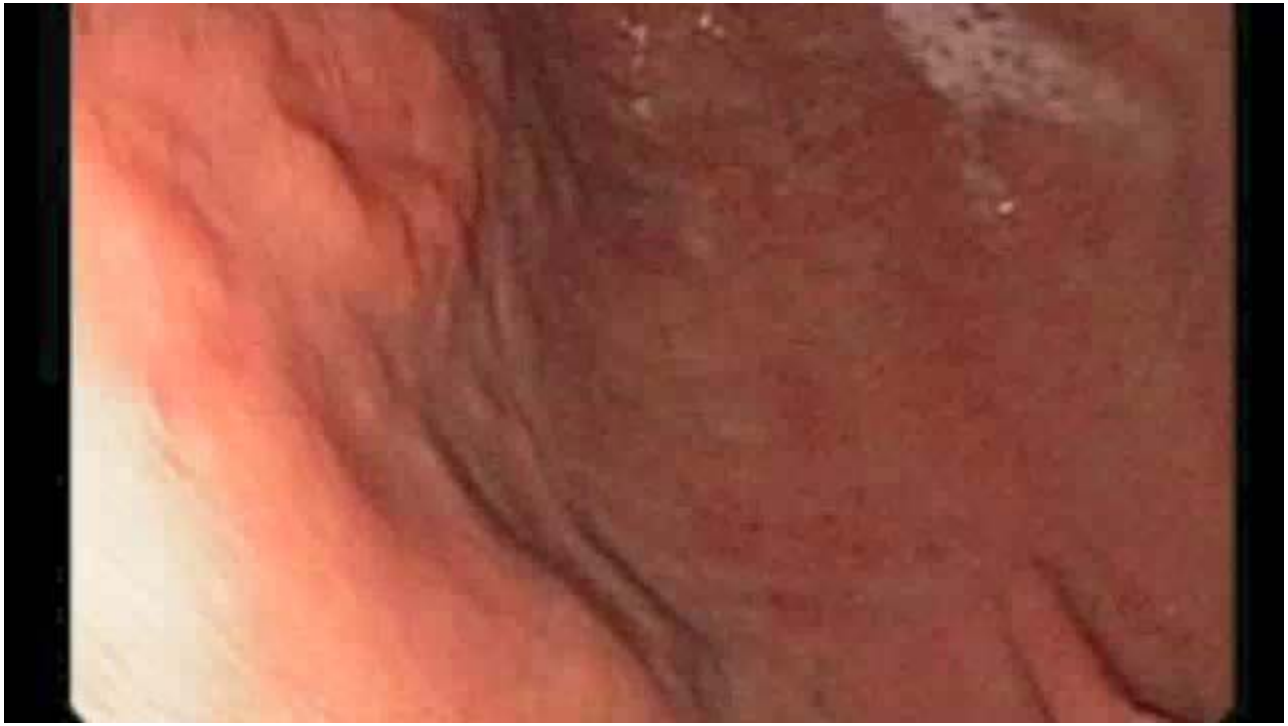
- T1a tumors without LVI had a 0 % rate of positive LN

- T1b tumors with LVI had a 64.3 % rate of positive LN

Conclusion

Early Gastric Cancer limited to the mucosa, without evidence of LVI, and N0 on EUS, may be considered for limited resection

- Endoscopic resection techniques
  - Endoscopic mucosal resection
  - Endoscopic submucosal dissection



EUS and T stage for EGC

- Incorrect staging

- 72% accurate for T staging
  - 19% were overstaged
  - 9% were understaged

- Opinion divided between EUS prior to endoscopic resection