The role of Endoscopy in Gastric Cancer

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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
<table>
<thead>
<tr>
<th>Primary tumor (T)</th>
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<tbody>
<tr>
<td><strong>Tis</strong></td>
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<tr>
<td><strong>T1</strong></td>
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<tr>
<td><strong>T1a</strong></td>
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<tr>
<td><strong>T1b</strong></td>
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<tr>
<td><strong>T2</strong></td>
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<td><strong>T3</strong></td>
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<td><strong>T4</strong></td>
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- 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
<table>
<thead>
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<th>T stage</th>
<th>N stage</th>
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<tbody>
<tr>
<td>EUS</td>
<td>75% - 92%</td>
<td>30 - 90%</td>
</tr>
<tr>
<td>CT</td>
<td>43 - 82%</td>
<td></td>
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<tr>
<td>MDCT</td>
<td>77.1 - 88.9%</td>
<td>67.1%</td>
</tr>
<tr>
<td>MRI</td>
<td>53% - 87.9%</td>
<td>50% - 65.4%</td>
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<tr>
<td>PET</td>
<td>58.1% - 95.9%</td>
<td>55.1 - 73.3%</td>
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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 modalities.
Linitus Plastica
(Diffuse type gastric cancer)
Linitis Plastica (Diffuse type gastric cancer)
- 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 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