Endoscopic Mucosal Resection

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Conflicts of Interest

• Research funding: Olympus USA, Fujinon, Boston Scientific
Indications for EMR

- Diagnosis of nodules or submucosal lesions
- Staging
- Therapy
  - Removal of tumors
  - Removal of neoplastic mucosa

Case

- 59 y.o. WM
- History of BE for 5 yrs, progression on surveillance
- 6 cm BE with high grade dysplasia undergoing RFA
- 2 Halo 360
- Area of nodular mucosa seen
Endoscopy

What Would You Do?

- RFA again, Halo90 at 15 J/cm²
- EMR
Why Perform Endoscopic Mucosal Resection?


Removing the Mucosa

- Endoscopic Mucosal Resection: Snare
- Endoscopic Submucosal Dissection: Knife
Paris Classification

Table 2. Neoplastic lesions with “superficial” morphology

- Type 0
  - Polypoid
  - Non-Polypoid

- Slightly Flattened
- Flat
- Slightly Repressed
- Excavated

0-I (Ip, Is)
0-IIa
0-IIb
0-IIc
0-III

Marking Borders

- Cautery of peripheral margins of lesion
- With multiple EMR, borders are less distinct
Submucosal Injection and Lifting

- Sclerotherapy needle
- 1:200,000 epinephrine solution
- Indigo carmine
- 5-10 ml
- ? Limited injection at gastroesophageal junction

Injection
Injection Pros and Cons

• Pros
  – Gives information regarding resectability
  – Provides hemostasis for difficult procedures
  – Easy to perform

• Cons
  – Can distort mucosal surface making lesions harder to define
  – No proof of benefit with EMR band technique
Case Video

Would You Try EMR?

• Yes
• No
Failure of Lift Sign

• Increased risk of perforation
• Failure of lift can be due to
  – Inflammation
  – Invasion
  – Scarring

Duette: Multi-band Mucosectomy Kit

6 Band Mucosectomy Device
Multi-band Mucosectomy

Multi-Band EMR
Case: Band EMR

- Failed to band tissue
- What would you do now?
  - Treat with APC
  - Cap EMR
Crescent Snare
25 mm Loop
2 mm diameter
165 cm length

<table>
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<th>Length (mm)</th>
<th>Diameter (mm)</th>
<th>Scope Types</th>
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EMR Cap

- Polypectomy technique
- Suction creates pseudo-polyp
Cap EMR

Target Sign

Swan, Gastrointest Endosc 2011;73:79-85
Tissue Processing

EMR specimen

Serial sections: “Bread loafing”

EMR Technique Comparison

• Cap and Band
• Similar size specimen
• Similar complications
• Price EMR Band > Cap
Conclusions

• Endoscopic resection is indicated for flat and elevated lesions in the gastrointestinal tract
• Elevation of the lesion with submucosal injection is the key to safe resection
• “Target sign” is evidence of potential perforation
• Careful pathological processing of the resected specimen is essential