Endoscopic Mucosal Resection and Radiofrequency Ablation for Intramucosal Adenocarcinoma in the Background of Barrett’s Esophagus: A Case Series

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Endoscopic Mucosal Resection and Radiofrequency Ablation for Intramucosal Adenocarcinoma in the Background of Barrett’s Esophagus: A Case Series

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Background

- Barrett’s esophagus (BE) is a precancerous lesion characterized by intestinal metaplasia (IM) as squamous epithelium is replaced by columnar mucosa resulting from continuous exposure to gastric acid.1–2
- Accumulation of genetic changes can lead to esophageal adenocarcinoma (EAC), which is likely to occur in multifocal high-grade dysplasia (HGD) and mucosal nodularity.3
- Treatment options were observation and esophagectomy, but endoscopic modalities are now the therapy of choice with minimal complications.1,4
- Safety profiles for combinations and timing of endoscopic mucosal resection (EMR) and radiofrequency ablation (RFA), appropriate use in dysplastic settings and long-term survival/recurrence rates are under investigation.5

Case Series Presentation

We present three male patients who underwent EMR and RFA for IM in the setting of background BE (Table 2, Image 1-2).

CASE 1:
- A 53-year-old male evaluated for baritric surgery had esophagastroduodenoscopy (EGD) with biopsies showing IM in background of HGD. Repeat EGD showed BE with nodularity and endoscopic ultrasound (EUS) showed no submucosal involvement.

CASE 2:
- A 36-year-old undergoing EGD to rule out posterior penetrating ulcer in acute pancreatitis had distal esophageal nodularity with nodularity. EGD showed BE with nodularity and biopsies showing IM in background of HGD. EUS showed two lymph nodes that were negative for malignancy.

CASE 3:
- A 74-year-old male underwent routine surveillance EGD showing nodularity with biopsies showing IM in HGD. EUS showed no submucosal invasion or regional adenopathy. Patient underwent EMR followed by RFA and during follow up EGD was found with nodularity having to repeat EMR and RFA cycle.

Discussion:

- Recent studies have shown the benefit of EMR/RFA for treatment of low grade dysplasia (LGD), HGD and IM in the background of BE with esophagectomy reserved for submucosal involvement, lymph node metastasis, poorly differentiated IMA, or failed EMR/RFA.1–5
- EMR treats the nodularity and provides tissue sample for adequate staging, adequate surface area for RFA eradication and decrease sessions of RFA.6,7 Complication rates increase if prior erosive esophagitis, NSAID use, prevention of healing or greater than 50% circumference is removed.8
- Independent predictors of incomplete remission are increase length of BE, incomplete healing of mucosa and nodularity.9

- Our series had 66% CEIM and no complications.
- Literature supports complete eradication of intestinal metaplasia (CEIM)>70% with RFA with/without EMR regardless of initial degree of dysplasia.10,11
- Our series was found to be 70% CEIM and no complications.

Conclusion:

- Our case series focused on EMR prior to RFA with at least 2 months in between for adequate healing time and the need for individualized protocols with number of sessions. No complications were encountered.

References:


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Table 1. General Information of Endoscopic Treatment of IMA/BE

<table>
<thead>
<tr>
<th>Case</th>
<th>EMR</th>
<th>RFA</th>
<th>Number of Sessions</th>
<th>Time Between EMR-RFA</th>
<th>Avg Time Between Sessions</th>
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<tr>
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<tr>
<td>Case 2</td>
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<td>1.5 months</td>
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<td>Case 3</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>4 months</td>
<td>3 months</td>
</tr>
</tbody>
</table>

Table 2. Case Comparison

- Case 1: A 53-year-old male evaluated for baritric surgery had esophagastroduodenoscopy (EGD) with biopsies showing IM in background of HGD. Repeat EGD showed BE with nodularity and endoscopic ultrasound (EUS) showed no submucosal involvement.

Image 1: Tubular nodular area (A) measuring 15mm at 38cm underlies EMR:

Image 2: Repeat EGD two months later reveals no evidence of nodularity (A). Survival healing in mucus (B) indicates the area of underlying BE with no detectable IM. We find this is a common scenario in patients with Barrett’s esophagus and that EGD can be performed to rule out the absence of nodular disease.