Small Rectal Carcinoid Tumors in the Absence of Metastatic Disease: Is Minimal Surveillance Adequate Following Resection?

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Introduction

- The overall incidence of carcinoid tumors is increasing.1,2
- The proportion of rectal carcinoid tumors to all rectal tumors increased 248% on comparisons between the early SEER (1973–1991) and late SEER (1992–1999) subpopulations.3,4
- Rectal carcinoids typically present as small tumors, with 60-90% < 1 cm at the time of diagnoses.2-5
- Metastases of small rectal carcinoids are rare, with tumors < 1 cm metastasizing in less than 2% of patients.2
- Recurrence rates following resection have not been well characterized; however, the 5-year survival rate is excellent at 88.3%.2
- While the evaluation of rectal carcinoids at presentation is fairly well standardized, the follow-up surveillance schedule after resection has not been well established.
- Physician practices differ on the frequency, intensity, and modality of follow-up in these patients, and no guidelines have been established in the United States.

Objectives

1. Determine the recurrence rate of small (≤1.0 cm), non-metastatic rectal carcinoid tumors.
2. Evaluate the post-resection surveillance regimens utilized at our institution.
3. Assess the utility of follow-up surveillance methods after resection.

Methods

- Information collected: patient and tumor characteristics, treatment, surveillance schedule, recurrence, and survival.
- Data are expressed as mean with standard error (SEM). Two-sided Fisher’s exact test and Student’s T-test utilized for statistical analysis, values of p<0.05 considered significant.

Results

Table 1: Patient characteristics

<table>
<thead>
<tr>
<th>Mean age±SEM, yr (range)</th>
<th>56±3 (29-82)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender: n (%)</td>
<td>Female: 11 (61) Male: 7 (39)</td>
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<tr>
<td>Symptoms on presentation: n (%)</td>
<td>Asymptomatic: 9 (50) Diarrhea: 2 (11) Constipation: 2 (11)</td>
</tr>
</tbody>
</table>

Figure 2: Treatment Method

- 1 (5.5%)
- 13 (17%)
- Endoscopic management
- Transanal excision (TAE)
- Transanal endoscopic microsurgery (TEM)

Table 2: Pathologic Information

<table>
<thead>
<tr>
<th>Tumor Characteristics*</th>
<th>No. (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diameter (mm)</td>
<td></td>
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<tr>
<td>0-5 mm</td>
<td>15 (83)</td>
</tr>
<tr>
<td>6-10 mm</td>
<td>3 (17)</td>
</tr>
<tr>
<td>Depth of invasion</td>
<td></td>
</tr>
<tr>
<td>T1a</td>
<td>17 (94.5)</td>
</tr>
<tr>
<td>T1b</td>
<td>1 (5.5)</td>
</tr>
<tr>
<td>Initial margins</td>
<td></td>
</tr>
<tr>
<td>Positive Indeterminate1</td>
<td>7 (39)</td>
</tr>
<tr>
<td>Indeterminate1</td>
<td>11 (61)</td>
</tr>
</tbody>
</table>

*Mean tumor diameter±SEM = 4.8±0.5 mm.
**T1a: Tumor invades lamina propria or submucosa and size ≤ 2 cm. T1b: Tumor size < 1 cm. T1: Tumor size 1-2 cm.

Figure 3: Hematoxylin and eosin stained section of a rectal carcinoid tumor; nests of uniform cells infiltrating the submucosa.

Follow-up, Recurrence, and Survival

- Carcinoid-specific follow-up of patients in this series was 5.4±0.9 years (range 8.5–12.3 years).
- Length of disease-free survival was 6.9±0.8 years (range 1.4–12.9 years).
- 2 patient deaths at 1.4 and 8.2 years after diagnosis, neither carcinoid-specific.

Conclusions

- Based on this experience, patients presenting with small (≤1.0 cm), non-metastatic rectal carcinoids are unlikely to develop local or distant recurrence after resection.
- Endoscopy was the surveillance method of choice at our institution.
- No significant differences were observed in post-resection management between surgeons and gastroenterologists.
- Given the absence of recurrence in this cohort, we concur with the European Neuroendocrine Tumor Society 2008 guidelines that patients with tumors <1.0 cm and without regional or distant metastases are unlikely to need scheduled follow-up after rectal carcinoid resection.
- This study highlights the need for standardization of surveillance following resection of small rectal carcinoid tumors.
- A risk-benefit analysis examining the need for scheduled follow-up is essential, primarily because aggressive surveillance with repeat endoscopies or other imaging studies may be unnecessary in this patient population.

Table 3: Comparisons between surgical and endoscopic groups

<table>
<thead>
<tr>
<th>Surgical Management (n=4)</th>
<th>Endoscopic Management (n=13)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean tumor diameter±SEM (mm)</td>
<td>4.5±1.9</td>
<td>4.7±0.4</td>
</tr>
<tr>
<td>Margin clearance: n (%)</td>
<td>4 (100)</td>
<td>5 (38)</td>
</tr>
<tr>
<td>Mean length of follow-up±SEM (yrs)</td>
<td>7.9±2.4</td>
<td>5.0±1.0</td>
</tr>
<tr>
<td>Follow-up endoscopies: mean (median)</td>
<td>3.5 (4)</td>
<td>2.0 (1.5)</td>
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References