Preoperative Colonoscopy through the Stent in Patients with Acute Malignant Colonic Obstruction

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Objective: The aims of our study were to evaluate the feasibility of preoperative complete colonoscopy through the stent in patients with malignant colonic obstruction and factors that affect complete colonoscopy.

Patients and Methods: From May 2010 to May 2011 consecutive patients with acute malignant colonic obstruction who were undergoing stent placement were prospectively included in the study. Patient with unresectable cancer and incomplete resolution of obstruction after stent were excluded. After an effective stent placement, preoperative colonoscopy was then performed and cecal intubation rate and time, tumor and stent location, presence of synchronous tumor were recorded.

Results: A total of 45 patients underwent preoperative colonoscopy. The subject characteristics are listed in Table1. Complete colonoscopy was possible in 27 of 45 patients (60%). Factors that significantly affect complete colonoscopy were stent expansion diameter, tumor located in junction (splenic flexure, SD and RS juction) and stent placed in junction. (Table 2.)

Conclusion: Complete colonoscopy through the stent is difficult in cases of tumor located in splenic flexure, sigmoid-descending and rectosigmoid junction. Location and expansion diameter of stent may also affect complete colonoscopy.

Key Words: Preoperative colonoscopy; Stent; Colon cancer
Table 1. Subject Characteristics (n=45)

<table>
<thead>
<tr>
<th>Sex</th>
<th>Male (n, %)</th>
<th>25 (55%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female (n, %)</td>
<td>24 (45%)</td>
</tr>
<tr>
<td>Age (yr, mean, range)</td>
<td>63.2 (35-86)</td>
<td></td>
</tr>
<tr>
<td>BMI (mean, range)</td>
<td>23.2 (17.9-31.7)</td>
<td></td>
</tr>
<tr>
<td>Tumor location (n,%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Proximal T colon</td>
<td>1 (2%)</td>
</tr>
<tr>
<td></td>
<td>Splenic flexure</td>
<td>3 (6.7%)</td>
</tr>
<tr>
<td></td>
<td>Descending</td>
<td>8 (17.7%)</td>
</tr>
<tr>
<td></td>
<td>SD junction</td>
<td>1 (2%)</td>
</tr>
<tr>
<td></td>
<td>Sigmoid colon</td>
<td>24 (53.3%)</td>
</tr>
<tr>
<td></td>
<td>RS junction</td>
<td>6 (13.3%)</td>
</tr>
<tr>
<td></td>
<td>Rectum</td>
<td>2 (4.4%)</td>
</tr>
<tr>
<td>Complete colonoscopy</td>
<td>Success</td>
<td>27/45 (60%)</td>
</tr>
<tr>
<td></td>
<td>Fail</td>
<td>18/45 (40%)</td>
</tr>
<tr>
<td>Stent length (mean, range)</td>
<td>9.28 cm (6-12 cm)</td>
<td></td>
</tr>
<tr>
<td>Tumor length (mean, range)</td>
<td>6.24 cm (2.5-11 cm)</td>
<td></td>
</tr>
<tr>
<td>Cecal intubation time (mean, range)</td>
<td>9 min 20 sec (4 min-20 min)</td>
<td></td>
</tr>
<tr>
<td>Bowel preparation score (mean, range)*</td>
<td>8.07 (4-9)</td>
<td></td>
</tr>
</tbody>
</table>

*BBPS, The Boston Bowel Preparation Scale.

Table 2. Factors that Affect Complete Colonoscopy

<table>
<thead>
<tr>
<th>Complete colonoscopy group</th>
<th>Incomplete colonoscopy group</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(success to reach cecum, n=27)</td>
<td>(Fail to reach cecum, n=18)</td>
<td></td>
</tr>
<tr>
<td>Age (mean)</td>
<td>64.5</td>
<td>61.3</td>
</tr>
<tr>
<td>Sex (M/F)</td>
<td>14/13</td>
<td>10/8</td>
</tr>
<tr>
<td>BMI (mean)</td>
<td>23.3</td>
<td>23.2</td>
</tr>
<tr>
<td>Stent length (mean)</td>
<td>9.7 cm</td>
<td>8.6 cm</td>
</tr>
<tr>
<td>Abdomen OP. History (n,%)</td>
<td>8/27 (29%)</td>
<td>2/18 (11%)</td>
</tr>
<tr>
<td>T stage (T3/T4)</td>
<td>22/5</td>
<td>13/5</td>
</tr>
<tr>
<td>N stage (N0/N1/N2)</td>
<td>10/8/9</td>
<td>3/9/6</td>
</tr>
<tr>
<td>Tumor location</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proximal T colon</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Splenic flexure</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Descending</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>SD junction</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Sigmoid</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>RS junction</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Rectum</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Junctional tumor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Tumor located in Splenic, SD, RS Junction, n,%)</td>
<td>2/27 (7.4%)</td>
<td>6/18 (33.3%)</td>
</tr>
<tr>
<td>Stent placed in Junction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Splenic, SD, RS Junction, n,%)</td>
<td>7/27 (25.9%)</td>
<td>10/18 (55.6%)</td>
</tr>
<tr>
<td>Stent expansion diameter (mean)</td>
<td>19.88 mm</td>
<td>14.95 mm</td>
</tr>
<tr>
<td>Tumor length (mean)</td>
<td>6.2 cm</td>
<td>6.06 cm</td>
</tr>
</tbody>
</table>