THE ASSOCIATION OF TRAINEE INVOLVEMENT IN RADICAL CYSTECTOMY WITH PERIOPERATIVE AND ONCOLOGIC OUTCOMES

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Abstract

Introduction: The impact of trainee involvement on surgical outcomes has been examined in various specialties, including urologic procedures, with mixed results. Herein, we assessed the impact of the level of trainees involved in surgery on perioperative and oncological outcomes of patients undergoing radical cystectomy (RC).

Methods: We reviewed the records of patients undergoing RC for urothelial carcinoma between 2000 and 2015 at Mayo Clinic. Trainee level was categorized as fellow, chief, senior and junior residents. In cases with multiple trainees, the highest level was considered. Demographic, perioperative and oncological outcomes were recorded and compared between the groups. Specifically, operative time, 30-day complications, severe complications (Clavien III-V) and oncological outcomes (overall, cancer-specific and recurrence-free survival) were assessed. Operative time model and complications were adjusted for known preoperative variables. Oncologic outcomes models were also adjusted for pathologic stage, nodal stage, margin status and perioperative blood transfusions.

Results: A total of 895 patients were included for study. Median operative time was 298 (251-352) minutes, 63% of patients experienced postoperative complications, 24% had severe complications. Median follow up among survivors was 5.9 years. On multivariable analysis, operative times were 30 minutes longer in procedures assisted by junior residents. In cases with multiple trainees, the impact of trainee involvement on surgical outcomes has been examined in various specialties, including urologic procedures, with mixed results. Herein, we assessed the impact of the level of trainees involved in surgery on perioperative and oncological outcomes of patients undergoing radical cystectomy (RC).

Conclusions

While cases assisted by junior residents had longer operative times, complication rates and oncological outcomes were comparable across trainee groups. Trainee level does not appear to have an impact on perioperative and oncological outcomes of radical cystectomy for urothelial carcinoma.

Introduction and Objectives

The impact of trainee involvement on surgical outcomes has been examined in various specialties, including urologic procedures, with mixed results. Herein, we assessed the impact of the level of trainees involved in surgery on perioperative and oncological outcomes of patients undergoing radical cystectomy (RC).

Methods

We reviewed the records of patients undergoing RC for urothelial carcinoma between 2000 and 2015 at Mayo Clinic. Trainee level was categorized as fellow, chief, senior and junior residents. In cases with multiple trainees, the highest level was considered. Demographic, perioperative and oncological outcomes were recorded and compared between the groups. Specifically, operative time, 30-day complications, severe complications (Clavien III-V) and oncological outcomes (overall, cancer-specific and recurrence-free survival) were assessed. Operative time model and complications were adjusted for known preoperative variables. Oncologic outcomes models were also adjusted for pathologic stage, nodal stage, margin status and perioperative blood transfusions.

Results

A total of 895 patients were included for study. Median operative time was 298 (251-352) minutes, 63% of patients experienced postoperative complications, 24% had severe complications. Median follow up among survivors was 5.9 years. On multivariable analysis, operative times were 30-40 minutes longer in procedures assisted by junior residents as compared to more senior trainees (table 1, p<0.001). Trainee level was not associated with overall or severe complications on multivariable analyses. Similarly, there were no significant associations between trainee level and overall, recurrence-free and cancer-specific survival.

Conclusions

While cases assisted by junior residents had longer operative times, complication rates and oncological outcomes were comparable across trainee groups. Trainee level does not appear to have an impact on perioperative and oncological outcomes of radical cystectomy for urothelial carcinoma.

* Data not shown.

Table 1: Perioperative and oncological outcomes of radical cystectomy.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Complication free survival</th>
<th>Any complication</th>
<th>Severe complication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trainee level</td>
<td>ref</td>
<td>1.14 (0.81-1.61)</td>
<td>1.12 (0.80-1.57)</td>
</tr>
<tr>
<td>Senior</td>
<td>ref</td>
<td>1.10 (0.79-1.51)</td>
<td>0.85 (0.57-1.27)</td>
</tr>
<tr>
<td>Junior</td>
<td>ref</td>
<td>1.00 (0.70-1.42)</td>
<td>0.91 (0.60-1.36)</td>
</tr>
</tbody>
</table>

**Note:** All p values are 0.05.