Abstract


Methods: This is a prospective observational study of perioperative pain in patients undergoing head and neck cancer surgery with flap reconstruction. Subjects completed validated assessment instruments preoperatively to establish baseline pain and screen for fibromyalgia/chronic pain and anxiety/depression. Patients received routine pain medications, which typically included opioid analgesics. For four weeks postoperatively, patients completed a daily diary reporting pain scores and quantity of pain medication consumed.

Results: 78% of patients reported pain in the head and neck region preoperatively (average worst pain score, 6.5/10). 37% of patients screened positive for neuropathic pain, 52% for symptoms of anxiety, 30% for symptoms of depression, and 0% for symptoms of fibromyalgia/widespread pain. Patients with moderate/severe pain preoperatively continued to endorse higher pain scores postoperatively compared to patients with none/mild preoperative pain. Patients with the highest composite pain scores postoperatively were also found to be more likely to screen positive for neuropathic pain. Overall, patients with moderate/severe preoperative and postoperative pain were observed to consume a greater overall amount of narcotic analgesics.

Conclusion: This is a pilot study to assess perioperative pain control and the utility of validated pain instruments in an effort to improve postoperative pain and reduce side effects for head and neck cancer patients. Completion of this study will identify pain control needs and guide further pain regimen protocol design.

Introduction

Pain is frequently undertreated in cancer patients. Approximately 1 in 2 cancer patients report that their pain is undertreated, and head and neck cancer is ranked as one of the more painful cancers, with 86% of survey respondents rating their pain as >5 out of 10 and occurring at least several times per month. Pain may occur in many different forms, which may respond to different treatment algorithms. A common treatment regimen for pain following head and neck surgery is based on an "analgesic ladder" strategy, however there are limited studies dedicated to examining and improving perioperative pain in head and neck cancer patients.

Methods and Materials

This is a prospective observational study of perioperative pain control in patients undergoing cancer-directed ablative surgery with reconstruction. Subjects complete a panel of validated pain assessment instruments preoperatively including a Brief Pain Inventory, Neuropathic Pain Screen (S-LANS), Anxiety and Depression Screen (HADS), and Fibromyalgia Screen (WP/SS). Patients are treated with routine pain medications postoperatively, which typically includes as needed narcotic analgesics. Starting on postoperative day one and continuing for four weeks, patients complete a daily pain diary consisting of pain scores reported on a numerical scale (0 least-10 worst) as well as recording quantity of medication consumed and location. Patients also record any complications such as nausea, vomiting, or constipation. Enrolled patients are assisted with recording during their hospital stay, and perform the recording on their own once discharged. The study coordinators contact the participants weekly to check progress and answer any questions. The completed pain diary is collected at the one-month postoperative appointment at which time pain scores and medication consumption are recorded for analysis. Initial pain was characterized as none/moderate if the preoperative composite pain score was <3, or moderate/severe pain if >3. The primary outcome measure is the patient-reported pain score, with the secondary outcome measures being correlation with neuropathic pain and pain medication consumption.

Results

- 27 patients were enrolled in the study
- 13 patients (48%) completed at least 2 weeks of pain diary entries; 9 patients (33%) completed the entire pain diary
- Of the 14 patients who did not return the diary, all had either lost it or felt unable to continue with the recording after discharge
- 21 patients (78%) reported pain in the head and neck region prior to surgical resection and reconstruction
- Of the patients with preoperative pain, 35% reported pain radiating to the ears, 24% in the tongue, and 6% in the lower jaw
- The average WORST pain score prior to surgery was 6.5/10
- The average LEAST pain score prior to surgery was 1.8/10
- 11 patients (41%) required narcotic pain medication for symptom control preoperatively
- 2 patients (7%) were taking medication for neuropathic pain (gabapentin) preoperatively
- 10 patients (37%) screened positive for neuropathic pain by the S-LANS questionnaire
- 14 patients (52%) screened positive for anxiety by the HADS questionnaire
- 8 patients (30%) screened positive for depression by the HADS questionnaire
- 0 patients screened positive for fibromyalgia by the WP/SS score

Table 1. Results of Preoperative Pain and Anxiety/Depression Scales.

<table>
<thead>
<tr>
<th></th>
<th>Positive Score</th>
<th>Negative Score</th>
<th>% Positive</th>
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<tbody>
<tr>
<td>S-LANS</td>
<td>10</td>
<td>17</td>
<td>37%</td>
</tr>
<tr>
<td>HADS - Anxiety</td>
<td>14</td>
<td>13</td>
<td>52%</td>
</tr>
<tr>
<td>HADS - Depression</td>
<td>8</td>
<td>19</td>
<td>30%</td>
</tr>
<tr>
<td>WP/SS</td>
<td>0</td>
<td>27</td>
<td>0%</td>
</tr>
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Conclusion/Directions

- Patients with moderate/severe preoperatively continued to endorse higher pain scores postoperatively and required greater amounts of narcotic medication.
- 41% of patients consumed narcotic pain medication preoperatively, and 100% of patients required narcotics postoperatively.
- Patients with the highest composite pain scores postoperatively were also found to be more likely to screen positive for neuropathic pain. 37% of all patients reported neuropathic pain in preoperative screening.
- Future directions include prospectively evaluating a standardized pain treatment algorithm to include treatment of neuropathic pain with gabapentin.

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References