PATIENT EDUCATION

PATHWAYS FOR HEAD AND NECK SURGERY: A PATIENT-EDUCATION TOOL

Linda K. Clarke, MS, RN, CORLN

Surgical treatment for head and neck cancer includes a variety of complex operative procedures. Patients scheduled for these operations often are presented with overwhelming amounts of information. Even after participating in the multidisciplinary, preoperative teaching process, they may be unable to fully comprehend the treatment plan. Pathways for head and neck surgery were designed to facilitate the patient-and family-education process and assist the patient in navigating through the surgical experience. This article discusses head and neck surgery pathway development, implementation, and outcome evaluation.

Patient Pathways

A patient pathway is a written patient-education tool that maps or charts the expected course of treatment from the pretreatment phase through the recovery phase. Patient pathways are similar in format to critical pathways but differ in their purpose and goals. The overall purpose of patient pathways is to provide comprehensive, consistent information along with written accountability for patient education. Finally, pathways assist patients in navigating through the healthcare system by encouraging a better understanding of the surgical plan of care.

The primary goal of patient pathways is to facilitate patient education. Patient education is a process designed to effect changes in knowledge, attitudes, and behavior to promote appropriate coping. This process fosters positive outcomes, such as decreased anxiety and improved patient satisfaction. Patients with cancer often seek information to gain control of an overwhelming situation (Treacy & Mayer, 2000). Researchers have found that those who receive information experience a decrease in anxiety and improved tolerance for treatments compared with those who receive no information (Mayer, 1994). Pathways are a component of the teaching process, serving as an adjunct to preoperative teaching. Pathways reinforce explanations, provide consistent information, and serve as a resource for future reference (Palmerini & Jasovsky, 1998).

A second goal is to promote patient participation in the treatment plan. Patient education influences patient behavior in terms of adherence with self-care routines and the ability to manage symptoms. One study suggested that a direct correlation exists between adequate comprehension of information and compliance with the treatment plan (Doak, Doak, Friedell, & Meade, 1998). Because knowledge is an essential component of living with cancer, preparing for survivorship, and achieving optimal quality of life, pathways help to optimize patient outcomes.

Pathway Development

In 1997, oncology services at the Greater Baltimore Medical Center (GBMC) underwent an in-depth redesign process resulting in what is known now as the Navigator Program. Navigator is a free program for patients with cancer, providing guidance through diagnosis, treatment, and recovery. When a cancer diagnosis is confirmed, patients are referred to a diagnosis-specific, multidisciplinary team including oncology nurses, oncology social workers, speech-language pathologists, and therapists. Central to the Navigator concept is the delivery of...
patient education at each treatment interval. Patient pathways for head and neck surgery are an outgrowth of that redesign process.

Receiving a diagnosis of head and neck cancer is a highly stressful event for patients and families. Patients must learn to cope not only with the diagnosis but also with potential long-term alterations in appearance and function. Most individuals are overwhelmed with anxiety and a sense of powerlessness, which, in turn, may become barriers to learning (Clarke, 2000). Patients may be unable to fully comprehend the surgical treatment plan, even after attending a multidisciplinary teaching session with a head and neck nurse specialist, oncology social worker, and speech-language pathologist. Written information supplements verbal information and aids in meeting patients’ educational needs.

Surgical treatment for head and neck cancer encompasses a variety of complex tumor resections and reconstructive procedures, presenting challenges in pathway development (Levin, Ferraro, Kodosky, & Fedok, 2000). A multidisciplinary surgical team, the Head and Neck Team, took a unique approach to this project by developing two pathways. Because the presence or absence of a tracheostomy often is the pivotal point in the rehabilitation process (Cohen et al., 1997), two surgical pathways are in place. One pathway is designed for patients undergoing head and neck surgery including a tracheostomy (temporary or permanent), such as composite resections and laryngectomies. The second pathway is designed for patients undergoing surgery without the need for a tracheostomy, such as a parotidectomy or radical neck dissection. The second pathway is described in this article.

Pathways were written collaboratively with head and neck surgeons and members of the multidisciplinary team. Each team member was assigned a different section of the pathway to research and write. A literature search revealed no published articles on patient pathways; therefore, patient-education materials and clinical pathways were obtained from several major university hospitals known to have a high volume of head and neck surgeries. These materials, as well as GBMC nursing procedures and protocols, current journal articles, and references, provided additional guidance to the team members (see Figure 1).

Meetings were held every two weeks to review and revise the completed work as multiple drafts were required to accommodate the numerous changes. Having patient input was believed to be important to a successful outcome, and members of the Laryngectomy Support Group were asked to review the completed draft of the tracheostomy pathway. They were excited to be included in this project and provided a unique perspective, particularly regarding the use of terminology.

**Format**

Pathways are printed on a 17” x 11” sheet of heavy stock paper folded in half and then in thirds to create a brochure. This format enables information to be presented on one page in a grid-like chart. The timeline corresponds to the stages of the surgical process, rather than on a day-by-day basis. The format was based on an existing pathway developed and validated by the hospital’s outpatient surgery department for patients having cataract surgery. Headings on the horizontal grid include presurgical, day of surgery, during surgery, after surgery, and at home. Under each heading is a list of key occurrences or interventions expected to take place within each time frame. The vertical axis includes nine elements of patient care, including assessment, diet, tests, treatment/medications, anxiety/safety, consultants, teaching needs, discharge planning, and supportive needs (see Table 1).

Based on recommendations in the literature, pathways were written in lay terminology because adults in the United States, on average, read at the eighth-grade level (Doak et al., 1998). Information is “bulleted” for simplicity and easy reading. The brochure also includes a hospital map, earmarking oncology facilities, and a glossary of terms related to head and neck cancer. To personalize the pathway, the patient’s name is written on the front of the brochure. This also stresses the importance of the information to the patient and helps the patient to take ownership of the process (Doak et al.).

**Pathway Implementation**

Patients receive the pathway at the completion of the preoperative teaching session. The pathway is opened and explained to patients and family members, and areas of particular relevance are pointed out. Patients then are encouraged to take the pathway home, read it carefully, and call with any additional questions or concerns. In some cases, patients have requested additional copies of the pathway to share with family members who were unable to attend the teaching session.

**Outcome Evaluation**

To achieve and maintain validity, patient-education endeavors must include quality improvement measures (Miller & Capps, 1997). To attain that goal, a patient-education satisfaction survey was developed in consultation with an oncology nurse researcher whose input increased the clarity of the terminology and consistency in the desired data. This evaluation tool consists of four statements that patients are asked to rate from “strongly agree” to “strongly disagree” (see Table 2). When possible, patients are asked to complete the survey during their first postoperative visit following hospital discharge. Patients may complete the survey while in the office or return it by mail using a postage-paid envelope that is provided.

To date, 60 pathways have been distributed; 30 to patients having surgery requiring a tracheostomy and 30 to patients having surgery without needing a tracheostomy. Thirty-five patient-education satisfaction surveys have been distributed, and 23 were completed for a 65% rate of return. Several patients have been lost to follow-up, and a few patients declined to complete the survey because they did not remember receiving or reading it.

Although the sample size is small, the majority of patients felt that the pathways were easy to read and comprehend. They agreed that the pathways helped them to better understand the surgery and postoperative care. Overall, pathways did not help patients prepare for and assume self-care activities, but they did appear to help reduce anxiety. No one felt that important information had been omitted, and no negative comments have been received.

Members of the multidisciplinary team were surveyed informally for their verbal reactions to the pathway process. They reported initial skepticism and thought that the pathways were an additional piece of information that would overwhelm patients. However, after witnessing positive patient responses, they now acknowledge the value of the patient pathways. They also noted that the process of pathway development helped everyone to focus on patient needs and fostered a collaborative relationship among the team members.

**Figure 1. Resources for Pathway Development**

### Table 1. Head and Neck Patient Pathway: Surgery Without a Tracheostomy*

<table>
<thead>
<tr>
<th></th>
<th>Presurgical</th>
<th>Day of Surgery</th>
<th>During Surgery</th>
<th>After Surgery</th>
<th>At Home</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assessment</strong></td>
<td>A nurse will call to confirm your surgery.</td>
<td>Come to the operating room on the 4th floor of the main hospital building.</td>
<td>An anesthesiologist and/or nurse anesthetist will monitor your vital signs throughout the procedure.</td>
<td>A nurse will monitor your vital signs and comfort level.</td>
<td>A member of the Head and Neck Team will call you 3–5 days following discharge to check on your progress.</td>
</tr>
<tr>
<td></td>
<td>A complete history and physical must be done by your physician or a nurse practitioner before you have surgery.</td>
<td>You will be given an identification bracelet.</td>
<td>Post Anesthesia Care:</td>
<td>Your incision will be monitored and cleaned several times a day.</td>
<td>Schedule follow-up appointments as instructed.</td>
</tr>
<tr>
<td></td>
<td>If you become ill before your surgery, call your physician to decide if your surgery should be re-scheduled.</td>
<td>Your vital signs will be taken and recorded.</td>
<td>After surgery, you will be transferred to the Recovery Room.</td>
<td>It is normal for your face and neck to be swollen. Swelling may be present for a while.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>An operating room nurse and an anesthesiologist or nurse anesthetist will talk to you.</td>
<td>You may be transferred to the Surgical Intensive Care Unit for monitoring.</td>
<td>Neck surgery may result in limited motion of your arm and shoulder.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Your vial signs, comfort level, and incision will be monitored.</td>
<td>Jaw surgery may result in difficulty opening your mouth.</td>
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<tr>
<td><strong>Diet</strong></td>
<td>Please do not eat or drink anything, chew gum, or eat mints after midnight the night before your surgery.</td>
<td>Please continue to not eat, drink, smoke, and chew gum.</td>
<td>Diet will be prescribed by your physician.</td>
<td>Your diet will change as your swallowing improves.</td>
<td></td>
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<tr>
<td></td>
<td>Do not smoke or drink alcohol 5 days before surgery.</td>
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<tr>
<td><strong>Tests</strong></td>
<td>During your pre-admission testing:</td>
<td>You may have more blood tests done before surgery.</td>
<td>All tissue removed will be sent to pathology (the lab) for examination by a physician (pathologist).</td>
<td>Blood work will be done as needed.</td>
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<tr>
<td></td>
<td>Blood will be drawn.</td>
<td></td>
<td></td>
<td>A swallowing x-ray may be ordered.</td>
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<tr>
<td></td>
<td>You will be asked for a urine specimen.</td>
<td></td>
<td></td>
<td>Other tests may be ordered as needed.</td>
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<td></td>
<td>An electrocardiogram (EKG) and/or a chest x-ray may be performed</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Treatments/medications</strong></td>
<td>Avoid taking aspirin, Bufferin® [Bristol-Myers Squibb, Princeton, NJ], ibuprofen, or Alka Seltzer® [Bayer Corporation, West Haven, CT] for 7–14 days before surgery.</td>
<td>Take medication with a sip of water only if instructed by your physician.</td>
<td>Intravenous fluids and antibiotics will be given during and after surgery.</td>
<td>IV fluids and antibiotics will be continued as needed.</td>
<td></td>
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<tr>
<td></td>
<td>Bring a list of all prescription and nonprescription medications and supplements (vitamins and herbal preparations) you are currently taking.</td>
<td>An intravenous line (IV) will be started.</td>
<td>Ointment will be placed in your eyes.</td>
<td>You may have drains in your neck connected to suction.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Your physician will inform you of the need to take routine medications prior to surgery.</td>
<td></td>
<td>A catheter may be placed in your bladder.</td>
<td>Antibiotics will be ordered.</td>
<td></td>
</tr>
<tr>
<td><strong>Activity/safety</strong></td>
<td>Leave all valuables at home.</td>
<td>You will be dressed in a hospital gown.</td>
<td>Safety straps will be in place.</td>
<td>You may receive special mouth care.</td>
<td>Follow your instructions for wound, incision, and drain care.</td>
</tr>
<tr>
<td></td>
<td>Wear comfortable loose fitting clothes.</td>
<td>You will be safely transported to the operating room.</td>
<td>Special air stockings will be wrapped around your legs to prevent blood clots.</td>
<td>Pain medication will be given as needed.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Safety straps will be in place.</td>
<td>The head of your bed will be raised to reduce swelling.</td>
<td></td>
<td>Follow your physician’s instructions regarding restricted activity.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Special air stockings will be wrapped around your legs to prevent blood clots.</td>
<td>You will be out of bed with assistance as tolerated.</td>
<td>Gradually increase your activity.</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>You will be encouraged to be as</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*This document is intended as a guideline. Each patient is an individual and responses may vary. If you have any questions, please talk to your doctor.

(Continued on next page)
**Table 1. Head and Neck Patient Pathway: Surgery Without a Tracheostomy**

### Presurgical

- Your physician will review your test results and may request further consultation to ensure you are in the best possible condition for the surgery.
- You may be asked to obtain medical clearance from your internist or cardiologist.
- You may be referred to a radiation oncologist.
- You may be referred to a maxillo-facial prosthodontist (dental specialist).
- You will be scheduled for teaching with the nurse, social worker, and speech-language pathologist from the Head and Neck Team. The needs and questions you and your family may have will be answered at this time.
- Hospital maps are available for your convenience.
- Plans for your discharge will be an ongoing process during your hospitalization.
- Your expected length of stay is determined by your procedure and recovery.

### Day of Surgery

- A registered nurse will be present and attending to your needs throughout and following the procedure. Any questions you have will be answered prior to the surgery.
- You will be in surgery for several hours. Your family will be told when your surgery is over.
- Post Anesthesia Care: You will remain in the Recovery Room until you are ready to be transferred to the head and neck surgery unit.
- Your family will be visited in the waiting area by members of the Head and Neck Team. Your doctor will keep your family informed about the progress of surgery.

### After Surgery

- Physical and occupational therapy may be ordered to assist with your activity.
- A dietitian will evaluate your nutritional needs.
- A speech-language pathologist may evaluate your swallowing and communication needs.
- A nutritionist will evaluate your nutrition needs. Other consultants are available as needed.
- You will be instructed in the care of your wounds, drains, and any other equipment needed.
- You may receive dietary/swallowing instructions. You will receive a "Discharge Instruction" sheet.
- If needed, the social worker will arrange for a visiting nurse and equipment needs at home. The social worker will assist you and your family with emotional, social, and spiritual needs.
- The hospital chaplain is available as needed.

### At Home

- It is important to balance activity with periods of rest. Schedule appointments with consultants as directed by your doctor.
- Notify the doctor of the following:
  - Increased redness or swelling around your wound/incision, or drainage from your wound/incision
  - Fever of 101
  - Unrelieved pain
  - Difficulty swallowing
  - Weight loss
  - Difficulty breathing
  - Nausea from smoking and drinking alcohol.
- Avoid smoking and drinking alcohol.
- Once you arrive at home, you may feel free to call 410-828-2157 where a nurse will be able to answer your questions.

Table 2. Head and Neck Patient Pathways: Patient-Education Satisfaction Survey

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The pathway was easy to read and understand.</td>
<td>17</td>
<td>6</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>The pathway helped me to understand my surgery and postoperative care.</td>
<td>15</td>
<td>8</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>The information helped me to better care for myself.</td>
<td>11</td>
<td>9</td>
<td>3</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>The information helped me to feel less anxious.</td>
<td>14</td>
<td>7</td>
<td>2</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

N = 23

Patient pathways have a number of advantages. Pathways do not replace preoperative teaching but rather reinforce, support, and enhance information. This prepares patients for the surgical experience as well as for discharge. Patients understand that they may go home with a feeding tube, drains, or a tracheostomy. Patients and family members often arrive for the teaching appointment armed with a tape recorder or pad and pencil for taking notes. The written pathway reduces the amount of note taking and allows the participants to focus on the discussion.

Pathways do not cover every detail of the head and neck surgical experience in terms of the various surgical and reconstructive approaches that may be utilized. Some information in the pathway may not apply to each patient; therefore, teaching must be individualized according to the prescribed treatment plan. Although no patient complaints have been received, the staff has recognized that the print size is small for those who may be visually impaired. Also, because patients receive a great deal of information prior to surgery, the pathway may be lost or forgotten. Lastly, although difficult to verify, some patients may choose to ignore the pathway as a coping mechanism related to denial.

Because patient pathways have been well received by both patients and staff at GBMC, they will continue to be used. The outcome evaluation process also will continue to study a larger sample size. With future printings, enlarging the print size will be considered. Finally, because of the positive response from patients and staff, the Head and Neck Team is planning to develop a pathway for patients having a total laryngectomy.

Conclusion

Society has become information-focused, and the average consumer wants and seeks information. Informed patients are better able to cope with their circumstances. Information also increases communication between providers and patients, a crucial element as patients move along the treatment continuum. Patients with head and neck cancer are faced with complex decisions and have complex needs. Patient pathways for head and neck surgery support the need for knowledge and help to decrease patient and family anxiety. Most importantly, pathways provide an essential map to help patients navigate the road to rehabilitation and survivorship.

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Author Contact: Linda K. Clarke, MS, RN, CORLN, can be reached at lclarke@gbmc.org.

References


