The Patient Who Continues to Smoke On-Treatment: An Ethical Dilemma

Ankita Patro1, Christi J. Guerrini, JD, MPH2, Andrew T. Huang, MD1, and Andrew G. Sikora, MD, PhD1

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Hypothetical Case
A 62-year-old man with an extensive smoking history is diagnosed with T4aN2bM0 oral cavity (retromolar trigone) squamous cell carcinoma. After multidisciplinary consultation, he is scheduled for radical resection with free flap reconstruction. He continues to smoke and is strongly advised to quit. When he returns for follow-up prior to his scheduled operation, the patient reluctantly discloses to his care team that he has not quit smoking. The surgeon considers withholding the operation until the patient has been tobacco free for 4 weeks, consistent with evidence showing a significant decrease in complications.1 Prior to operating, the surgeon requires confirmation of the patient’s preoperative abstinence with blood or urine nicotine testing. Would it be ethically defensible to do so?

Point: Delay Surgery
The surgeon’s decision to delay surgery finds support in the ethical principles of nonmaleficence, resource utilization, and physician autonomy (Table 1).

Reducing Postoperative Complications
The Hippocratic Oath includes the principle of nonmaleficence, which imposes an obligation to avoid inflicting harm on others.2 More than 30% of patients with a lung cancer or head and neck cancer diagnosis are reported to be current smokers, and smoking status is associated with serious surgical complications.3 Among patients with a total laryngectomy, smokers are at greater risk for wound complications, including cellulitis, neck abscesses, and incisional dehiscence.4 Smoking is also a risk factor for surgical site infections in patients with head and neck cancer.5 Brady et al6 report increased rates of postoperative pneumonia, sepsis, and medical complications in smokers with more than 50 pack-years. In addition, patients who smoke have more frequent flap necrosis, with 83% of paramedian forehead and nasolabial flap failures occurring in this population.7 These surgical complications can exacerbate harm to patients when they require delaying adjuvant chemotherapy and radiation.

On the other hand, smoking cessation by patients prior to surgery can decrease the risk of postoperative complications. A meta-analysis and systematic review evaluating smoking cessation’s effect on preventing these complications reports a significant risk reduction of 41%. Each week of abstinence increases this effect by an additional 19%.1 Given these clear benefits, head and neck surgeons reduce the chances of surgical harm to their patients and so act consistent with the principle of nonmaleficence when they insist on delaying operative treatment in active smokers.

Allocating Limited Resources
The US health care system is the most expensive in the world at twice the per-capita cost of other developed countries.8 In the face of overwhelming demand and rising costs, there is an ethical imperative for health care providers to be good stewards of limited medical resources.

Yet, patients who smoke have elevated health care costs. In addition to increasing the risk of comorbidities, smoking is an independent predictor of prolonged hospital stays after head and neck cancer surgery.9 Smoking is also significantly associated with returns to the operating room following total laryngectomy.10 The monetary value of additional days in the hospital, minutes in the operating room, and prolonged wound management with flap necrosis is substantial for smokers. These resources, along with surgeon time, are rival goods that become no longer available to the remaining population once consumed. It seems unfair for high-cost
patients—especially those whose high medical costs result from their voluntary behaviors—to use resources that could benefit the larger population. Distribution of these limited resources should involve both “macroallocation” at the societal level to determine the categories of expenditure (eg, health care access, public health efforts) and “microallocation” at the individual level to identify particular recipients of these medical resources.2

While using smoking as a rationale for delay of surgery in otolaryngology might be perceived as discriminatory, alcohol and tobacco use already factor into treatment decisions made by other specialties. Consider orthopedics, where patients are often required to quit nicotine products several weeks prior to their hip and knee replacement operations.11 In the context of organ transplantation, patients must be alcohol free prior to receiving a liver transplant in the United States, and smoking cessation is also a standard component of cardiac transplantation.12,13 Discriminating against smokers in transplant cases may seem especially justifiable given that organs are scarce. Yet, the effect of discrimination is the loss of what is likely the patient’s only transplant opportunity. For head and neck surgeries, on the other hand, discriminating against smokers results in only a temporary postponement of intervention and one that benefits patients. Given the precedence set by other surgical fields, delaying surgery for smokers is ethically sound in otolaryngology.

Respecting Professional Judgment

Doctors have a duty to align modifiable risk factors like smoking to attain optimal success for their patients. Given that smoking status is associated with worse surgical outcomes, head and neck surgeons should have the option to delay operating until smoking cessation is achieved.4-7 Continued smoking during adjuvant radiation therapy is further associated with a decreased therapy response and lower rates of survival.14 Compelling surgeons to operate without taking these risks into account undermines their professional judgment to act in the patient’s best interests and can increase their moral distress if they believe that immediate surgery constitutes unnecessarily suboptimal care.

In an effort to improve patient well-being, otolaryngologists should undertake steps to facilitate preoperative smoking abstinence for at least 4 weeks, the time reported for a significant benefit.1 Confirmation can be achieved with blood or urine nicotine testing. While this policy may appear coercive to some, it is reasonable that preoperative abstinence, which is important to the success of surgery, has been attempted. Regardless of actualized behavior change at the end of 4 weeks, patients should be offered appropriate operative treatment. The care team can use the delay time period to identify those struggling or failing the confirmatory test who would likely benefit from more frequent monitoring and support throughout treatment. Although nonelective, cancer surgery is rarely emergent, and delaying a few weeks to attempt smoking cessation may ultimately enhance patient outcomes.

**Counterpoint: Do Not Delay Surgery**

While there are compelling arguments to delay operating, the principles of beneficence, nonmaleficence, compassion, justice, and patient autonomy support a surgeon’s decision to proceed with surgery regardless of patient smoking status (Table 1).

**Decreasing Disease Burden**

Whereas nonmaleficence involves intentionally refraining from actions that cause harm, beneficence requires taking action to promote well-being.2 Both beneficence and nonmaleficence depend on the clinical context when assessing whether to medically intervene. Given the curative and nonelective nature of cancer surgery, the decision is more clear-cut when surgeons operate and facilitate remission. Moreover, delaying surgery on active smokers may increase the risk of additional complications. Cancer can spread to vital structures in the head and neck that enable breathing, swallowing, and speech. Significant pain can also impair quality of life. If metastasis does occur during the delay period, surgery and a cure may no longer be feasible. Although delaying surgery may reduce the risk of postsurgical complications, it can also reduce the patient’s chances for a favorable oncological outcome. This is

<table>
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<th>Principle or Virtue</th>
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<tr>
<td><strong>Beneficence</strong></td>
<td>—</td>
<td>Patient welfare with timely intervention for nonelective cancer surgery</td>
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<tr>
<td><strong>Nonmaleficence</strong></td>
<td>Increased postoperative complications for smokers</td>
<td>Prevention of undue harm with cancer spreading to important structures</td>
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<tr>
<td><strong>Autonomy</strong></td>
<td>Physician judgment to optimize risk factors and treatment in order to promote patient well-being</td>
<td>Patient right to accept risks and choose health behaviors that are consistent with own happiness</td>
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<tr>
<td><strong>Justice</strong></td>
<td>Unfairness of society paying costs and smokers using limited resources</td>
<td>Discrimination against vulnerable individuals</td>
</tr>
<tr>
<td><strong>Compassion</strong></td>
<td>—</td>
<td>Advocacy for vulnerable and self-harming patients</td>
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**Table 1. Summary of Ethical Arguments.**
inconsistent with the ethical principles of beneficence and nonmaleficence.

In any event, the evidence that smokers face increased postoperative complications is not unassailable. The study designs within otolaryngology are primarily retrospective and occur at single institutions and thus do not support generalized conclusions. Direct data comparisons are also difficult given that definitions for categorizing "smokers," "former smokers," and "nonsmokers" can vary widely across studies. More broadly, while evidence indicates that complications can be devastating in the immediate postoperative period, most are acceptable in the context of an oncologic success.

**Demonstrating Compassion**

The ethical practice of medicine includes respect for the virtue of compassion. It is appropriate—and indeed laudable—to show compassion to patients who are addicted to self-harming behaviors. Smokers with cancer are particularly vulnerable; even after receiving initial treatment, patients who continue smoking have a substantially increased risk of developing new head and neck primary malignancies. In addition, smoking is more prevalent among some socioeconomic populations that might be considered especially deserving of compassion. For example, among veterans—a subgroup of patients with head and neck cancer who face poor clinical outcomes—chronic pain, disability, and posttraumatic stress disorder are associated with higher rates of smoking. Many smokers would like to quit but find it impossible to do so. Indeed, in 2015, 68% of adult smokers in the United States wanted to stop smoking, but only 7% were successful. Patients who are African American, aged 65 years or older, less educated, suffering from serious psychological conditions, and of lower socioeconomic status have decreased cessation likelihood. Given these disparities in smoking prevalence and quitting, compassion toward the vulnerable smoking patient seems especially justified and supports immediate surgery.

**Minimizing Inequity in Health Burdens and Health Care Provision**

Specifically targeting smokers for delayed surgery may be incompatible with the just and fair distribution of benefits and burdens of the health system. Smoking increases the risk of medical conditions, including cardiovascular disease, chronic obstructive pulmonary disease, and cancers in several systems; thus, smokers already have a disproportionate share of health burdens. Delaying surgery exacerbates this disease burden as the head and neck cancer grows. Patients are unfairly punished beyond the burdens that they already receive from smoking.

Moreover, many patients engage, to various degrees, in behaviors that are also linked with poor health. If head and neck providers delay surgery for smoking, there is an argument that they would be ethically obligated to do the same for patients who, for example, overeat or are physically inactive. The decision to delay surgery for certain patients could also be a slippery slope toward deciding to withhold some treatments from smokers altogether.

**Respecting Patient Choices**

Autonomy encompasses self-rule that is free from controlling interferences, and to respect patients’ autonomy is to acknowledge their right to make choices consistent with their personal values and beliefs. As medicine moves away from paternalism, physicians and patients are embracing active dialogues to attain shared decision making. A patient with head and neck cancer can thus opt to continue smoking after being fully informed of its risks, including the resulting postoperative complications. Patients ultimately reserve the right to choose behaviors that are not in their own best medical interests. Some patients may not want to stop smoking because they derive happiness from it, and they should be allowed to make that choice free of worry that they will be punished for it. By respecting each patient’s unique inputs for happiness and offering an informed option to undergo surgery immediately, otolaryngologists can practice value-based medicine and promote patient autonomy and dignity.

Nevertheless, surgeons can take steps to help patients who want to quit smoking but are having trouble doing so. The National Comprehensive Cancer Network Guidelines advocate a combination of behavioral therapy and pharmacotherapy as being the most effective for quitting. Ultimately, offering multidisciplinary interventions to facilitate smoking cessation supports patient autonomy by encouraging achievement of personal health goals.

**Author Contributions**

Ankita Patro, conception of manuscript and manuscript design, initial drafting and subsequent revision of manuscript, approval of final version of manuscript, accountable for all aspects of the work; Christi J. Guerrini, conception of manuscript and manuscript design, critical revision of manuscript, approval of final version of manuscript, accountable for all aspects of the work; Andrew T. Huang, manuscript design, critical revision of manuscript, approval of final version of manuscript, accountable for all aspects of the work; Andrew G. Sikora, manuscript design, critical revision of manuscript, approval of final version of manuscript, accountable for all aspects of the work.

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**References**


