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Clinical Ethics Consultation

The Threshold Moment: Ethical Tensions Surrounding Decision Making on Tracheostomy for Patients in the Intensive Care Unit

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ABSTRACT

With the aging of the general population and the ability of intensivists to support patients using ventilator support, tracheostomy has become a vital tool in the medical management of critically ill patients. While much of the medical literature on tracheostomy has focused on the optimal timing of and indications for performing this procedure, little is written on the ethical tensions that can revolve around decisions by patients, surrogates, and physicians on its use. This article will elucidate the ethical dilemmas that can arise surrounding the use of tracheostomy in critically ill patients and how ethics consultants and committees can approach these cases to allow resolution.

INTRODUCTION

The aging of the general population and the ability of healthcare providers to support pa-

tients through critical illness has raised the demand for intensive care resources. In the United States, it is estimated that, annually, patients receive more than 18 million days of care in the intensive care unit (ICU) setting, accounting for 1 percent of the gross domestic product. This demand is only expected to rise in the next two decades, as the portion of the U.S. population over the age of 65 increases, and disease processes that cause critical illness in this population, such as sepsis, become more prevalent.¹

One of the key modalities for providing critical care is ventilator support. Whether it is provided due to acute illness or is planned postoperatively, ventilator use is viewed as a means to support patients temporarily until the underlying disease process has resolved. However, it is increasingly recognized that patients who require a ventilator acutely may require longer term management to allow recovery. To allow that recovery process, tracheostomies are commonly used. Tracheostomy involves a short surgical procedure that places an artificial airway through the neck into the airway (trachea). A tracheostomy allows patients to be more easily weaned off ventilator support over the medium (six to eight weeks) and long term and to be transferred to rehabilitation facilities for medical management. From the perspective of inten-

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sivists and hospitals, this is a necessity to free up badly needed ICU beds and resources for new acutely ill patients.

For patients and families, however, the perception of a tracheostomy is often quite different. Tracheostomy has a known association with patients' perception of decreased quality of life and self-image.² The transfer of a patient to a rehabilitation facility can be viewed as the first step to longer term dependency on medical care, with a loss of quality of life and personal autonomy. Although this perception may be misguided or based on a poor understanding of prognosis, it is well recognized in the physical medicine and rehabilitation literature that issues of goal setting and patients' expectations are common causes of ethical conflict in long-term care facilities.³ In this context, the desire of critical care physicians to advance a patient's care by performing a tracheostomy and to transfer the patient to a rehabilitation setting can create an impasse, resulting in a request for an ethics consultation.

Conversely, a tracheostomy can be viewed by surrogate decision makers as a simple step to maintain a chronically ill or persistently vegetative patient in the long term. For these family members, a tracheostomy is another tool to preserve the life of a loved one when the value held most dear is the sanctity of life. Physicians who are asked to perform this surgical procedure in these circumstances may view a tracheostomy as a futile intervention that only prolongs the dying process of an end-stage patient, creating the potential for moral distress. This distress derives from the a professional's perception that his or her expertise in performing the procedure is to no beneficial end, creating an impasse that may require an ethics consultation.

When the competing perspectives of the physician, patient, and family clash, a decision of whether to offer or consent to a tracheostomy can be viewed as a *threshold moment*, when the differing ethical perspectives of the patient, family, and healthcare provider may crystallize and come into conflict. This threshold moment arises from the transition of a patient who receives a tracheostomy from an acute to a more

chronic management state. The performance of the procedure, as cited above, can be viewed by a patient or family members as a moment when the loss of personal autonomy and long-term quality of life is at heightened risk, in comparison to standard critical care. Alternatively, offering the procedure can be viewed by physicians or surgeons as a futile gesture that is against their better medical and ethical judgment. Using case examples, this article will elucidate the ethical dilemmas that can surround the use of tracheostomy in critically ill patients and how ethics consultants and committees can approach such cases to allow resolution.

CURRENT MEDICAL INDICATIONS AND EVIDENCE FOR TRACHEOSTOMY USE

Prior to exploring the ethical tensions that can arise in decision making regarding the use of tracheostomy, it is necessary to delineate the current state of medical evidence in support of its use. In the pulmonary and critical care literature, the commonly discussed indications for tracheostomy are avoidance of airway damage, ease of ventilator weaning, patient comfort, and anticipated medium- or long-term need for ventilator support.⁴ Prolonged translaryngeal intubation can place patients at risk for airway stenosis, which is avoided by direct airway placement via tracheostomy into the trachea. Tracheostomy also reduces the physiological "dead space" of an artificial airway that may allow easier weaning of a patient from a ventilator. An analogy is that an endotracheal tube is equivalent to breathing through a straw, and the resultant difficulty in respiration requires an easier means to connect a ventilator that does not tax the energy of an already debilitated patient. Tracheostomy allows easier suctioning of patients, and, with modification, vocalization by individuals who are ventilator dependent, as the device is placed below the larynx.⁵

There is evidence to support early tracheostomy placement in patients with traumatic brain injury, stroke, and after cardiac surgery, reducing the number of days on a ventilator and the incidence of ventilator-associated complications such as pneumonia.⁶ However, no study

has clearly shown a mortality benefit or reduction in hospital or ICU stay from immediate tracheostomy. As a result, it is generally recommended that a judgment be made that a patient will require longer than 10 days of ventilator management before a tracheostomy is performed.⁷ On this basis, most rehabilitation facilities require that a tracheostomy be performed prior to the transfer of patients for medium- or long-term ventilator management.

Tracheostomy can also be used to maintain patients whose disease process will leave them chronically dependent on a ventilator. However, unlike the literature on the use of gastrostomies in patients who are chronically debilitated or in a persistent vegetative state,⁸ there is little discussion on whether the use of tracheostomy as a means to maintain a terminally ill patient who lacks decision-making capacity is medically or ethically appropriate. One article on this topic focused exclusively on the use of tracheostomy in patients when a decision had already been made to withdraw ventilator support. This article framed the use of a tracheostomy as a palliative care measure to allow suctioning of the patient and to reassure the family regarding the patient's comfort without the use of a ventilator.⁹ For patients who are conscious but debilitated, such as in the case of a patient with amyotrophic lateral sclerosis (Lou Gehrig's disease), it is common to explore the benefits and consequences of long-term maintenance by tracheostomy and ventilator early in the disease process with the patient, with his or her wishes generally being accepted. In contrast, the use of tracheostomy with ventilator support in patients who lack decision-making capacity, who are progressively ill with a degenerative or terminal condition, is largely unexplored in the current medical literature.

Overall, the evidence supporting the current medical indications and use of tracheostomy is based on expert consensus rather than on empirical study. It is standard to perform the procedure after approximately 10 days of ventilator support, with the expectation that such support will be required for a medium or longer period of rehabilitation (six to eight weeks or beyond). In the case of a terminally ill patient

who lacks decision-making capacity and requires ventilator care to sustain life, as in the case of neurodegenerative disorders, there is little evidence beyond anecdotal case discussions to guide medical practitioners in the use of tracheostomy.

CASE DISCUSSIONS OF ETHICAL TENSIONS SURROUNDING THE USE OF TRACHEOSTOMY

Given the increased use of tracheostomy in the ICU and rehabilitation settings, it is reasonable to expect that the dilemmas surrounding decision making in this context will arise to a greater degree. Legally, tracheostomy is a surgical procedure, and therefore requires informed consent from a patient or surrogate decision maker to be performed in this context. While the above medical evidence might suggest that tracheostomy should not be viewed as an escalation of critical care interventions, but rather as a continuation of ventilator support by another means, there is no common statutory basis for presumed consent for this intervention.¹⁰ As a result, ethics consultants and committees can be expected to be called to mediate between patients, families, and physicians when their ethical and medical perspectives on the performance of a tracheostomy conflict. Three cases will be presented that exemplify the ethical tensions surrounding tracheostomy in the critical care setting.

In these three cases, it will be clear that decision making on tracheostomy in the ICU represents a threshold moment that can crystallize the ethical tensions that may arise in this health-care setting. There are important areas that should be given consideration by ethics consultants and committees when they consider cases that involve decision making on the subject of tracheostomy.

The Medical Versus the Personal

Medically, the performance of a tracheostomy is a relatively minor procedure, literally the exchanging of one means of connection to a ventilator or airway protection for another. The tracheostomy, if anything, is lower profile,

likely more comfortable to a patient, and may, in some cases, allow a quicker removal of a patient from ventilator support. However, on a personal level, tracheostomy may be seen as a step that crosses a line from an acute intervention to one in which a patient may perceive himself or herself as a semipermanent resident of the healthcare system, dependent on artificial support for survival. This fear of a loss of personal autonomy stands in contrast to the prototypical physician's view that a tracheostomy is a medical intervention that should be judged on its physiologic benefit to a patient or the lack thereof. For ethics consultants and committees, there is a need to bridge these differing perspectives to allow resolution of the impasses that may arise from the ethical viewpoints of the patient and the physician.

Tracheostomy as a Tool to Resolve Ethical Impasses

Tracheostomy is not merely a prism through which the ethical values of a patient and physician can come into conflict. The decision to perform a tracheostomy can allow patients and physicians to come to a consensus on how far the healthcare system should go to rehabilitate an individual who might have a prolonged course of recovery. A tracheostomy can be a valid ethical option for allowing a trial of therapy to better establish whether a patient would recover from a profound pulmonary insult and to reconcile the ethical positions of a patient's surrogate decision maker and a physician. For ethics consultants and committees, a detailed understanding of the medical facts of a case may allow the proposed use of a tracheostomy as a vehicle to resolve ethical conflict.

The Escalation or Paralysis of Care

One of the more common resolutions in clinical ethics consultation is a decision to neither withdraw nor escalate care. Tracheostomy does not neatly fall into either category. It can serve a palliative, curative, or stabilization purpose. However, the necessity for informed consent to perform this surgical procedure means that the presenting physician and the patient or surrogate need to share an understanding of

the purpose of placing the tracheostomy. Without this unity, treatment of the patient is paralyzed. There may be a role, from the perspective of preventive ethics, to establish early in the communication with a patient or surrogate decision maker that a tracheostomy may be required, and how that should be viewed by both sides of the doctor-patient relationship. Ethics consultants and committees have an important role in elucidating the various roles of tracheostomy in aiding surgeons, intensivists, patients, and healthcare organizations in communications that may prevent a decision to perform the procedure from becoming an impediment to a patient's care.

Case Example: The Conscious Patient with Involved Family Members

An 84-year-old African American male presented to this center for resection of a nonmetastatic lung tumor. Pre-operatively, the surgeon felt that the patient would likely have a cure from the procedure and should not require prolonged ventilator support. Over a 10-day period, however, attempts to remove the patient from ventilator support failed. He was extubated twice, but both times required re-intubation for respiratory distress. The patient was alert and able to communicate via written notes, and it was the opinion of his attending physician that the patient had intact decision-making capacity to consent or refuse further critical care interventions. The attending physician felt that the patient would benefit from medium-term rehabilitation to wean him off the ventilator, and that it was premature to presume that the patient would have long-term dependence on ventilator support or require permanent residence in a nursing home. The patient did not have other signs of organ failure and had been quite functional at home prior to diagnosis and surgery.

The patient, when presented the option of tracheostomy with transfer to a rehabilitation facility for care, was wary and deferred to his daughter. The daughter stated that her father had repeatedly stated that he never wanted to be in a "nursing home" and feared above all else dependency on the healthcare system for

his care. Her discussion with her father and his physicians led to a request for ethics consultation to aid in establishing how the values of the patient could be reconciled with his medical situation.

In considering this case, all three areas of focus for ethics consultation with regard to decision making around tracheostomy are relevant. The source of ethical conflict in this case had its roots in the patient's pre-operative perception on what it would mean to have complications that required intermediate or long-term rehabilitation in an inpatient setting. For the surgeon, tracheostomy would be simply a continuation of a slightly altered postoperative recovery course that was likely to be successful with more time. For the patient and his daughter, there was no pre-operative expectation that further interventions might be required to facilitate his recovery. To the patient and his daughter, placement of a tracheostomy was not a continuation of recovery, but a further step in the loss of personal autonomy and subsequent increased dependency on medical care through inpatient rehabilitation.

To resolve this case, it was necessary to facilitate an understanding among the surgeon, patient, and family on how a decision about tracheostomy was a threshold moment requiring empathy on both sides. Accepting that the patient viewed tracheostomy as an escalation of care, from a sense of loss of personal autonomy, allowed the surgeon to communicate more clearly that there was no requirement to go further than a tracheostomy in the rehabilitation process. The surgeon, patient, and family agreed that if the patient suffered more complications in his recovery, no further aggressive intervention (cardiopulmonary resuscitation, dialysis) would be pursued. They agreed that the rehabilitation process would be revisited after six to eight weeks, with a strong presumption that if the patient was not improving, the tracheostomy would be decannulated. The patient and family learned there was limited but real evidence that a tracheostomy might allow more aggressive rehabilitation and rapid removal of ventilator support, providing guidance on how the procedure was medically beneficent, and

not performed solely to maintain the *status quo*.

Similarly, it was useful for the patient to learn that the tracheostomy might allow better communication, since he had intact decision-making capacity, and, with training, a tracheostomy would allow easier vocal interaction. It was a relief to the daughter to know that a tracheostomy would allow her father to more clearly communicate for himself what he would want in his medical care, as it removed personal stress in having to serve as a substitute decision maker. Her father could communicate before a tracheostomy, but to a limited extent, and so he had deferred decisions on the next step in his care to her. The resolution of performing the tracheostomy, but limiting further escalation of care, did not require either side to compromise their perception of the situation. Rather, knowledge of the evidence for tracheostomy, and the limitations of that evidence, allowed the ethics committee to facilitate an outcome that respected the medical and personal values of the parties to the consultation.

Case Example: The Unconscious Post-Operative Patient

A 75-year-old Caucasian male patient presented to this institution for surgical resection of an esophageal cancer. He had been diagnosed with this condition four months prior to his presentation to the surgeon and undergone neoadjuvant chemotherapy as a means to determine his responsiveness to treatment. He had shown enough of a response to chemotherapy, based on clinical and radiographic evaluation, that he was a candidate for definitive surgical resection. The characteristics of his tumor response suggested that his five-year survival might approach 40 percent. After a long discussion with the surgeon regarding the extensive nature of the resection operation, the patient consented to the procedure in the presence of his son, who held his healthcare power of attorney.

In the intervening three weeks between the appointment when informed consent was given and the date of surgery, however, the patient refused to eat and told his son that if he were to develop complications postoperatively, he did not want to undergo a prolonged rehabilitation

process. Unfortunately, this was not conveyed to the cardiothoracic and general surgeons scheduled to perform his resection operation.

The patient underwent his operation, and, by all indications, including final pathology evaluation of the tumor resected, it was a success with no residual malignancy. Postoperatively, the patient could not be removed from the ventilator and then developed a significant lung injury that was thought to be due to acute respiratory distress syndrome. He required escalating ventilator support and maneuvers to maintain oxygenation and ventilation, including prone positioning. But over a 10-day period he showed improvement in his pulmonary health, although not enough to be extubated.

On the second postoperative day, the son began to request that the patient be allowed to die under palliative care, based on his understanding of his father's wishes. The thoracic surgeon had multiple discussions with the son and other family members, who initially agreed to a short period to determine whether the patient would require medium- or long-term ventilator support. After a week, the consensus from the family was that the trial had been long enough and that the patient would not want more extensive critical care efforts to maintain his life.

The thoracic surgeon expressed her position that the patient was still in the immediate postoperative period, and that it was therefore premature to conclude that the patient's wishes would be to forego life-sustaining treatment. Had she known about the patient's actions and statements after the consent process but before surgery, she said, she would have revisited the consent process and likely would have recommended against surgery. She noted that the patient had elected for a curative procedure, and that his recovery process, while more prolonged than anticipated, was progressing. With further rehabilitation, the patient might be able to be extubated or conscious enough to express what he would want under the circumstances. At this point, an ethics consultation was requested.

This case highlights the importance of clear communication and the establishment of realistic expectations in the informed consent pro-

cess. As the surgeon noted, she had explained how extensive the surgery would be. The patient and his son, however, either did not perceive that recovery might include the possibility of prolonged ventilator support, or presumed that, if complications did arise, the surgeon would agree to initiate palliative care measures. These issues are not unique to cases when a tracheostomy might be required. As seen in this case, tracheostomy, as an invasive procedure and as a means to facilitate medium- or long-term inpatient rehabilitation, is a threshold moment in which the expectations and perceptions of surgical and critical care come to the forefront. In such cases, when a prolonged recovery course may be more likely, the informed consent process should include some of the potential complications and where they might lead. This should be done delicately, so as not to engender unnecessary fear in the patient, nor be falsely reassuring. It is appropriate for surgeons and ethics committees to devise templates for communicating these risks in the informed consent process for high-risk procedures. Examples might include prolonged surgeries in the elderly, surgeries with a high likelihood of significant blood loss, and surgeries in patients with significant underlying medical, especially pulmonary, conditions.

To resolve this case, one pathway suggested by the ethics service was to view a tracheostomy as simultaneously a trial of therapy and a palliative care measure. As noted above, there is some evidence that tracheostomy can accelerate pulmonary rehabilitation in a ventilated patient, and a presumption that it is more comfortable than endotracheal intubation. In this context, it was communicated that it might be appropriate to perform a tracheostomy and set a limited period of aggressive attempts at ventilator weaning over a seven to 10 day period of time. The son, who was the patient's health-care power of attorney, did not feel this would reflect the patient's wishes in this circumstance. The thoracic surgeon was offered the opportunity to transfer the patient to another physician's care so as not to compromise her professional ethical values, but she chose to comply with the wishes of the patient's son. The pa-

tient was extubated and died surrounded by his family two days later.

Case Example: The Ventilator-Dependent End-Stage Patient

A 50-year-old African American male patient with Creutzfeldt-Jakob disease (a rapidly progressing degenerative brain disorder) was hospitalized in the ICU with respiratory failure. He had shown a marked deterioration in his level of consciousness over a six-month period and had been admitted twice in the past two months because his family had not been able to care for him at home. During this hospitalization, he had been intubated due to an aspiration event with respiratory failure. He had improved and was breathing comfortably during trials of minimal ventilator support. While he technically was a candidate for extubation, it was widely anticipated that his continued neurologic deterioration would result in the risk of aspiration and a potential need for ventilator support again. The assessment of the neurology service was that the patient had an end-stage illness, but that he might survive six months to a year with aggressive care, including airway protection via tracheostomy and nutritional support via gastrostomy. During the remainder of his life, he would be completely dependent on artificial medical technologies after having deteriorated to a persistent vegetative state.

When this information was presented to the patient's wife, she stated that the patient had never discussed with her what his wishes would be under these circumstances. She did say that the patient knew he was dying and valued the time he had left, but he would not want to suffer pain or discomfort. In this context, she expressed a desire to not escalate care, but also to maintain the patient by the ventilator and with a gastrostomy tube for the time he had left. She did agree that the patient should have do-not-resuscitate status if he were to deteriorate under these conditions. The intensivists did present the wife with the medical evidence that, in the patient's condition, he would not communicate or otherwise interact meaningfully with his environment. She understood this, but

felt the patient would view the continuance of his life and the comfort that his survival would provide his family members as the values he held most dear.

In this context, a surgical consult was requested for the placement of a tracheostomy and gastrostomy to facilitate the patient's transfer out of the ICU to a skilled nursing facility for ongoing care. During this consultation, the attending surgeon expressed ethical reservations about performing these procedures. She stated that, given the marked deterioration of the patient and the desire of his wife to not escalate care, it was inappropriate to offer a tracheostomy and gastrostomy. She believed these procedures would be an escalation of care and that, instead, the patient should be extubated and allowed to survive (or not) without artificial technological support. In her view, even if the tracheostomy and gastrostomy were simply new conduits for providing existing life-sustaining treatment, they represented a shift from acute to more long-term support that violated the patient's wife's stated wish to avoid treatment escalation.

On a practical level, the surgeon expressed a concern that to perform the tracheostomy and gastrostomy would place herself and her surgical team at risk, as the exact mechanism of transmission of Creutzfeldt-Jakob disease is unclear. She noted that there were reports of potential infection of healthcare providers in the care of patients with this condition.¹¹ Standard decontamination protocols of operative instruments were ineffective,¹² and the performance of the tracheostomy and gastrostomy would require the shuttering and cleaning of the relevant operative suite for a day. Finally, she questioned whether performance of the procedures would allow the patient to be transferred out of the hospital. While the patient might leave the ICU, the likelihood that he could be placed in a skilled nursing facility was unlikely, as he lacked a payer for the high level of care he would need to survive. As a result, the performance of these procedures, in the opinion of the surgeon, was ethically fraught. Instead, a more appropriate ethical option would be to more forcefully express to the wife the termi-

nal nature of the patient's condition and advocate for palliative care without surgical intervention.

A palliative care consult was requested to allow the wife to hear the full range of treatment options in the context of how she understood the patient's wishes. She refused to accept palliative care, and again requested that the tracheostomy and gastrostomy be placed. At this point, to assist with the resolution of this clinical and ethical impasse, an ethics consult was requested.

In contrast to the other two cases, the ethical objection to performing the tracheostomy was expressed by the surgeon, not the patient or surrogate. The surgeon's objection was based on her medical and subsequent ethical judgment regarding the condition of the patient, and the potential risk posed to her team in the context of the lack of perceived benefit to the patient. The patient's wife, however, took a less medical view of the situation. Rather, her judgment was based on her perception of her husband's personal values in his dying process. As noted above, the decision regarding the use of a tracheostomy is the threshold moment when conflicting views of further medical care (the medical versus the personal, whether tracheostomy is an escalation of care or not) can come to the fore. The question for the ethics consultants was whether there was a way to reconcile the conflicting value hierarchies. If there was not, the logical next question was whether the patient's view, as expressed by his wife, should take precedence over the physician's view, or whether the healthcare organization had an obligation to find an alternative provider to facilitate the maintenance of the patient in this progressive debilitated state. It is beyond the purview of this article to define organizational ethical policy. This case does exemplify, however, how decision making on tracheostomy can create conflict between providers and patients/surrogates that deserves consideration by ethics committees in defining how their organization will respond.

In this case, a second surgical opinion was obtained, which concurred with the first opinion, that it was medically and ethically inap-

propriate to perform a tracheostomy. However, the second surgeon did not concur that refusal should be based on the communicable disease risk, given the common circumstance of physicians and surgeons caring for patients with infectious conditions. In discussion with the patient's wife and after presenting the concerns of the physicians involved, it was agreed that the patient would be extubated. To maintain the patient on a ventilator, whether by tracheostomy or endotracheal tube, would not be to his benefit, since he was stable for removal of this support. Continuation of the ventilator might subject the patient to iatrogenic complications such as pneumonia. It was also agreed that aggressive pulmonary suctioning and non-invasive support would be used to avoid aspiration as much as possible, and that the patient would not be re-intubated based on his expected clinical course. Assuming that he survived extubation, the surgeons agreed to revisit with the family other forms of support, such as a gastrostomy.

This resolution was accepted reluctantly by all of the parties involved. It was viewed as a compromise by the surgeons, who did not believe that a desire for comfort measures should include artificial life-prolonging measures of any kind, tracheostomy or gastrostomy. Similarly, the wife felt that the surgeons and facility were forcing her towards a particular course of action, but she agreed that it was not beneficial to transfer her husband elsewhere to have a tracheostomy and gastrostomy performed. This case suggests that healthcare organizations should have plans in place regarding the resolution of such impasses, when ethical obligations may move beyond that of the individual practitioner, a prime example of preventive ethics.

CONCLUSION

With the aging of the population and the increased use of intensive care resources, the utilization of tracheostomy will become more common in clinical practice. This article indicates how a decision to perform this procedure can raise profound ethical tensions that have

the potential to paralyze the care of a patient. Ethics consultants and committees have an obligation to examine how such threshold moments can be met in a way that balances the values of healthcare organizations, physicians, family members, and patients.

MASKING OF THE CASES

Identifying details of patients and their cases in this article have been altered or fictionalized to protect the privacy of the individuals involved.

NOTES

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