

Commentary

Pro/con ethics debate: is nonheart-beating organ donation ethically acceptable?

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Abstract

This pro/con debate explores the ethical issues surrounding nonheart-beating organ donation (NHBD), a source of considerable controversy. It is estimated that NHBD can increase the number of organs available for transplant by 25% at a time of great need. However, should NHBD be ethically acceptable? In support of NHBD, it may be acceptable practice if there is a separation of the rationale to withdraw life support/to withhold cardiopulmonary resuscitation from the decision to recover organs, if no conflicts of interest exist, if a waiting time precluding spontaneous return of circulation is included, and if NHBD conforms to a standardized protocol. Against NHBD, there are questions regarding the ambiguity and cultural perspectives of death, regarding whether a separation of rationale between withdrawal and donation is sufficient to preclude conflicts of interest, and regarding whether variable protocols arise that subordinate the patient to the goal of donation. Such concerns suggest NHBD may damage the trust in patient-physician relationships and may adversely affect organ donation rates.

Keywords bioethics, critical care, death, nonheart-beating organ donation, organ donation

Introduction

Laura Hawryluck

NHBD is currently a source of considerable ethical controversy. Two organ recovery procedures are described [1]: 'uncontrolled' NHBD, in which organs are recovered from a cardiac arrest patient who fails attempts at resuscitation; and 'controlled' NHBD, in which organs are recovered after life support is withdrawn (as portrayed in the following case). Standardized protocols for NHBD have been developed and are being put into practice in parts of the United States and parts of Europe [1].

While the details of these protocols vary, they all typically include a waiting time after asystole occurs, commonly ranging from 2 to 5 min [1,2]. This waiting time is meant to preclude any possibility of spontaneous return of circulation and to allow death to be pronounced with confidence [1,2]. After death is pronounced, organs must be procured as

rapidly as possible to reduce the deleterious effect of warm ischemia, which begins as soon as the heart stops beating [3]. This need for speed gives rise to an even more heightened sense of urgency than seen in organ donation from brain-dead patients.

It is estimated that NHBD can result in a 25% increase in the number of organs available for transplant [4]. This is a considerable increase at the present time, where the need for organs far surpasses availability and many people die while on the waiting lists. However, even though decreasing the shortage of organs is an obvious benefit, does this mean we should embrace NHBD with open arms? What are the ethical issues that we need to consider? Finally, should NHBD be ethically acceptable?

The scenario

Mr Robert Henry is a 45-year-old corporate executive who, while preparing to go to work, complains of a severe headache and collapses in front of his wife. As he is brought into the emergency room, he is seizing. He is quickly given intravenous midazolam and phenytoin, and he is intubated. A computerized tomography scan reveals a devastating subarachnoid hemorrhage. Neurosurgery is consulted, but in their opinion the patient will never regain consciousness and neither an angiogram nor an operating room will be of benefit. Mr Henry has a living will stipulating that he is not to be kept alive on life support in the event of severe brain injury. After extensive discussions with the intensivist and the neurosurgeon, his wife and family agree to withdraw him from life support. At this time, Mr Henry is not brain dead.

The hospital has a NHBD protocol that mandates that the intensivist should contact the organ procurement organization (OPO) whenever life support is withdrawn. Mr Henry meets their criteria for NHBD, and the OPO approaches his wife and family about donation. The wife consents to NHBD after further discussions with the OPO

and the intensivist, even though Mr Henry had never discussed his thoughts on the issue, since donation would mean some 'good' could come from this devastating event.

Premortem central venous cannulation is required in NHBD to infuse organ preserving solution and heparin (unless contraindicated). Separate consents for NHBD, cannulation and heparinization must be obtained from the family. Heparin is contraindicated in this case since it would worsen the subarachnoid hemorrhage.

The central line is inserted. Mr Henry is taken to the operating room with his family in attendance. He is extubated, and narcotics and benzodiazepines are given to palliate his dyspnea and his discomfort. Death is pronounced and, after a period of 5 min of asystole, of an absence of a pulse and blood pressure via the arterial catheter or noninvasive blood pressure monitor and of an absence of respirations, the preserving solution is infused via the central line. His wife and family leave the operating room and his organs are harvested.

Pro: NHBD is ethically acceptable

Leslie Whetstone

The scenario describes the controversial organ recovery procedure known as 'controlled' NHBD. Those who criticize this procedure practice level, ethically convincing arguments against it that demand serious consideration by clinicians. Critics have argued that NHBD may be a violation of the 'dead donor' rule, which stipulates that persons may not be killed for their organs or by the removal of their organs [2]. They have suggested that it may directly or indirectly endorse a species of self-indulgent utilitarianism [5]. And, perhaps most importantly, critics have argued that NHBD may undermine societal trust in the justness of the medical establishment's decision-making process, thereby jeopardizing future organ donation [6].

Superficially, these may be valid concerns. If, however, NHBD is scrupulously managed so that it conforms to an appropriate and standardized protocol, a number of ethicists believe it can be legitimately applied. Mr Henry's case is an example of how, with the application of such an appropriate protocol, NHBD can be an ethically acceptable practice holding much promise for the future.

In the USA, The Uniform Determination of Death Act specifies that death may be declared after appropriate diagnostic tests establish either "irreversible cessation of circulatory and respiratory functions" or "irreversible cessation of all functions of the entire brain, including the brain stem" [7]. Although the majority of organ donors are classified as 'heart beating' (brain dead) by the second

criterion, donors classified as 'nonheart beating' fall under the first criterion. Naturally, there is a sense of urgency in NHBD that is not present in the case of heart-beating donors. The haste required to recover viable organs begs the question of whether the patient is truly 'dead' yet. Can it be said that circulation and respiratory function have been irreversibly lost in these patients?

To obey the dead donor rule, NHBD protocols typically include a waiting time after the declaration of death to begin organ recovery. There was a 5-min wait protocol in Mr Henry's case, following which the absence of circulatory or respiratory function assures death.

Although there has not been a sufficient number of studies to declare diagnostic certainty, there are no empirical data in the literature suggesting that autoresuscitation has ever been observed unexpectedly after 1 min of pulselessness [8]. Therefore, as a practical matter, waiting 5 min virtually eliminates the possibility of unexpected autoresuscitation, especially within this population of patients who have been selected for severe organ system dysfunction [2]. It is important to remember that this population of potential donors have been aggressively evaluated for any survival potential and failed long before they were assigned to potential donor status [8]. These are not fresh, cold water drowning victims or patients that have taken an overdose of barbiturates who can give the superficial appearance of death but who are in fact resuscitable.

In the USA, people have the right to refuse any and all treatment, and they do not forfeit that right if they become incapacitated [9]. In addition, incapacitated patients may elect to forgo life-sustaining treatments through a designated surrogate decision-maker. Under current ethical and legal rationale, therefore, resuscitative measures may not be initiated if they have been proscribed by a patient or by a surrogate [10]. The patient's autonomous decision to forgo further treatment trumps the issue of cardiopulmonary resuscitation to assure completeness during the NHBD protocol, and in so doing renders moot the theoretical possibility that cardiopulmonary resuscitation may be able to resume viability. Furthermore, although total brain failure is not the criterion used to declare death in NHBD, data support the fact that neurologic function rapidly ceases within seconds of circulatory collapse, rendering this criterion clinically moot as well [8].

The nuts and bolts of NHBD protocols vary widely throughout American medical centers. This variability is ethically dubious and should be standardized to assure uniformity. Toward this end, in the USA, the Institute of Medicine published a report in 1997 offering recommendations and practical guidelines regarding NHBD [1]. The Institute of Medicine recommends seven key points for model NHBD protocols, including that the protocols be locally drafted and approved, that they have safeguards

against conflicts of interest, and that they contain a waiting period of 5 min after death before organ recovery, as verified by electrocardiographic and arterial pressure monitoring.

Mr Henry's case aligns with these Institute of Medicine recommendations. The decision to withdraw life-sustaining treatment was made independently of the decision to donate organs, assuaging fears that potential organ donors might receive less than aggressive care. The physician who certified death was not part of the OPO, eliminating some potential conflicts of interest. The elapsed time frame of 5 min was recorded through accurate monitoring modalities, testifying that the dead donor rule was not circumvented or violated. This scenario raises some concerns for purists but, when adequately explored, it is clear that this protocol is in accordance with accepted canons of clinical medicine.

We know that, following circulatory respiratory failure, the human organism as an integrated unit suffers rapid fragmentation and expires quickly. The precise moment of death eludes detection by current medical and philosophical analyses. When properly managed, NHBD is not quiescent acceptance of Machiavellian ends justifying means simply because the proportional good exceeds risk. If we desire to realize the benefits of organ transplantation, we must necessarily accept our limitations while using our best clinical and moral judgments to guide this altruistic practice.

Con: NHBD is not ethically acceptable

Kerry Bowman

New criteria of death have been evolving in industrialized, Western nations over the past 30 years. NHBD is an extension of this process and may soon be fully integrated into clinical practice to increase kidney and liver donation given the increasing number of patients waiting for an organ transplant. The case of Mr Henry highlights many of the social and ethical questions associated with this emerging practice.

Mr Henry left no explicit wishes for organ donation (NHBD) or premortem cannulation. Although substitute decision-making is considered legally and ethically acceptable, these are profound, far-reaching choices given that Mr Henry's preferences are unknown. Premortem cannulation is of no benefit to Mr Henry and may be painful.

It is a common recommendation for such decisions to be made on a case-by-case basis, balancing clinical and ethical factors. I find this too vague and equivocal. Is it justified to administer a procedure to a prospective donor, such as Mr Henry, that has no value for his treatment or comfort, and in some cases (probably not this one) may hasten that person's death? Premortem cannulation is carried out to ensure the organs are treated to keep them optimally viable for transplantation. Caring for Mr Henry becomes subordinate to this goal.

Many health care workers agree that NHBD can be ethically justified if there is a separation of the rationale to withdraw care from the indication to recover organs [11]. The key is to ensure that NHBD organ donation is not allowed to cloud the decision to withdraw treatment or to cloud the actual events around the death of a patient. It is not always enough to simply ask attending physicians to make end-of-life decisions before contacting organ-harvesting teams. The demands for organs and the expectation to identify potential sources can be strong and they may well affect the decision to withdraw care. In the case of Mr Henry (and many NHBDs, I would argue), the process and perhaps even the timing of death is indeed shaped by the process of NHBD, even in the absence of a patient-advanced directive, as we see with Mr Henry.

Perhaps the greatest ethical question with NHBD is what is the period of suspension between life and death? Many people and cultures do not accept the concept of brain death [12,13], and in Western cultures the duration of the absence of circulation before the person is dead is not well defined. Anxieties about the ambiguity between life and death have deep cultural roots in many societies, appearing in mythology and in folk stories, and they surface in documents from medieval times. Studies have shown that many

Japanese believe that there is a liminal, a dangerous time of transition, between the time when biological death occurs and the time when the transformation necessary to become an ancestor occurs [14]. In many nonWestern cultures, death is viewed as a social event rather than a scientific phenomenon [15]. It is not surprising that such questions evoke strong reactions in people. Recognizing these deep-rooted concerns is critical to developing policies that are respectful to the diverse, pluralistic societies we value and live within.

Even within the culture of Western health care, death means different things to different people and different institutions. The debate and variation over how many minutes 'define' death before NHBD can be performed clearly indicates that we are drawing the lines in different places. Can this variation be justified to the public? The present lack of uniformity in protocols means that, at least in theory, there could be two similar patients whose hearts have stopped. In one case doctors might perform cardiopulmonary resuscitation, and in the other they might proceed with recovering organs.

As these matters now stand, an impression can easily arise that a patient on whom NHBD is performed is not really dead or that the patient has been prematurely withdrawn from ventilators so that organs can be extracted. Even if such a

suspicion is slight, this is a significant cause for concern. NHBD may both damage the fragile trust between patients and doctors and damage the public's trust in organ donation, which is already poor [16].

It is imperative as health care workers to remember that, although death may seem self-evident from a medical/clinical perspective, we work for the public, and to remember that the views of the broader population are of critical importance. We know from the social sciences that space between life and death is historically and culturally constructed, fluid and open to dispute [17]. Death can never be understood merely as a biological event; cultural, legal, and political dimensions are inevitably implicated in its definition.

The public is already ambivalent about the circumstances of organ procurement [16], and evidence exists that the public has even greater discomfort with NHBD [18]. From what is known of the present case, I am not convinced that we can truly assure the family and friends of patients such as Mr Henry that his death has not been influenced by the decision to harvest his organs. Can we honestly tell the public that the various considerations that were weighed in his last days were not merely utilitarian? I believe cases such as that of Mr Henry, and NHBD in general, require greater public discourse and social and ethical exploration.

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