



Ethical dilemmas related to living donor liver transplantation in Asia

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Abstract

Living donor liver transplantation (LDLT) has evolved rapidly in Asia with good outcomes for both donor and recipient. Nonetheless, LDLT remains a highly demanding technique and complex surgery. The potential risks to the donors provide the basis for many of the ethical dilemmas associated with LDLT. The transplant team must have a good knowledge of the principles of bioethics in order to handle these matters. To look after the need, donor's safety and the chance for good recipient outcomes, the principles of respect for the donor's autonomy, beneficence, and non-maleficence should be practiced. In accordance with the concept of equipoise, the risk to the donor must balance the benefit to the recipient. The transplant center should have adequate experience and proven expertise in LDLT. There are concerns regarding the validity of informed consent given by the donor. While donations to non-relative patients may, at first sight, indicate radical altruism, it is important to apply careful scrutiny. Though organ trading is strictly prohibited by the law, there seems to be an inherent risk with directed donations to strangers. Transplant tourism has flourished in some countries in spite of the existence of strict laws. There are reservations regarding transplantation done by foreign visiting teams. Donor websites facilitating patients and donors and Facebook pages bear no responsibility for the outcomes of their matches and cannot ensure sufficient and accurate information about donation, transplantation, and post-operation life. Telemedicine and virtual consultations appeared to work better when the clinician and the patient know and trust each other.

Keywords Asia · Ethics · Living donor liver transplantation

Introduction

Living donor liver transplantation (LDLT) has evolved rapidly from an experimental procedure to a standard therapy with good outcomes for both donor and recipient [1]. This has happened due to advances in surgical and immunosuppression techniques. Living donation is more accepted in Asia than in the Western World. Nonetheless, LDLT remains a highly demanding technique and complex surgery. Due to the relative shortage of deceased donor organs, and high waiting list mortality, LDLT is an important option to fully meet the needs of patients requiring liver transplantation [2, 3]. The potential risks to the living donors provide the basis for many of the ethical dilemmas associated with LDLT in Asia. The objective of minimizing potential risk to the donor can be summarized as “*primum non nocere*” (first, do no harm) or non-

maleficence and “*primum succurrere*” (first, do help) or beneficence. The risk to the donor must balance the benefit to the recipient. Donation by living persons may be categorized as (a) directed donation to a loved one or friend, (b) non-directed donation to the general pool for recipients at the top of the waiting list, and (c) directed donation to a stranger with which donor has no prior emotional connection [4, 5].

Potential donors

In most Asian countries, living donation is regulated by law to include only relatives, spouses, or in-laws. In Western countries, close friends may also be solicited as donors. The Transplantation of Human Organs law in many countries specifies that living donors not less than 18 years of age may, during their lifetime, voluntarily donate any organ or tissue of their body, for therapeutic purposes, to any other living person genetically and legally related, such as a close blood relative or spouse. Here, “close blood relative” usually means a parent, child, sibling, cousin, or uncle [5, 6]. Also of note is “voluntary,” which means that the decision to donate

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must be genuinely motivated, and made without duress or coercion. The Evaluation Committee must be satisfied that no reward has been or will be given to the donor and an independent assessor should interview both the recipient and the donor separately and submit the report [5]. In case a donor meeting the above criteria is not available, the Evaluation Committee may modify the selection criteria to include non-close blood relatives. So, unrelated directed donations are permitted in some countries like Korea unless there is a suspicion of organ sale [7].

Potential risks to the donor and informed consent

With LDLT, left lateral segment donation poses less risk than right lobe donation. Consequently, donating to small children, which involves the former, is less risky than donating to adults, in which a donor gives 55 to 60% of the liver to a patient with the advanced liver disease. There is a high risk of morbidity and mortality for donors in the adult to adult LDLT [8].

LDLT apparently challenges the ethical principle of non-maleficence by subjecting healthy individuals to medical, psychosocial, and unknown risks [9]. These operations raise several ethical dilemmas. To what extent should a healthy person be exposed to potential harm for the benefit of another, if at all? Is there such a thing as informed consent, given that a layman may not be able to fully grasp detailed information about adverse events and complications? Can consent ever be unconnected from external pressures, i.e., is it ever voluntary? Should there be incentives, possibly financial, to compensate or attract donors? Lastly, are adequate protections in place to prevent exploitation of the vulnerable, such as the poor or imprisoned?

While seeking solutions to these complex problems, we must balance several variables; the importance of informed, autonomous decisions, the concept of equipoise (the risk to the donor must permit benefit to the recipient), cultural differences between nations that shape varying attitudes towards donation, and the quality of healthcare available. There clearly exists a risk for the donor and when there is an unacceptably low recipient benefit, for example in the case of multifocal hepatocellular carcinoma, it is not ethically justifiable [10].

A potential donor may be reluctant and may face immense pressure to donate. However, equally important are situations where people feel compelled to donate regardless of the consequences to themselves. One may argue to set aside medical paternalism on behalf of the principle of donor autonomy. However, with this approach, the ethical rule of non-maleficence is overcome [11]. Effective practice of taking a comprehensive informed consent provides an opportunity for

the potential donor to ask questions about the risks and benefits of living donation and to opt out voluntarily [12].

Donations to non-relatives

While donations to non-relative patients may, at first sight, indicate radical altruism, it is important to apply careful scrutiny [13]. Can we turn down autonomous wishes to donate anonymously? [14]. Underlying motivations for donations to non-relatives may be religious, arise from a psychological condition such as depression or low self-esteem, or involve aspirations to media attention or a relationship with the patient. Many healthcare professionals disapprove altruistic stranger donations, considering them to entail an unacceptable degree of risk-taking as LDLT is associated with a low but finite and well-documented risk of donor morbidity and mortality [15, 16].

Donation to non-relatives may also involve a commodification of organs and tissues, which presents its own problems [17, 18]. The deontological view goes that organs are a “gift of life” and that donations must be willful and sanctified, not a product of market forces. If one is in favor of an organ exchange based on some form of compensation, then one will have to face with the possibilities of commercial involvement, public advertising of available organs (which is currently discouraged, but not illegal), and negotiating over “the best bargain.”

In case a framework for donation to strangers is given the green light, there is still the problem of whether legal donations should be directed or non-directed, i.e., sent to a pool for a waiting list. If donors have a natural right to their body and life, being able to choose the recipient of their organs may be the reasonable expectation. In such a situation, the transplant authority must prevent well-intentioned donors from falling victim to sensationalistic accounts and greedy behavior. At the same time, it is important that this authority is not abused by guiding non-directed donors to specific institutions, races, or groups.

Buying and selling of organs

In many low-income countries, a black market organ trade is facilitated by organized crime, organ shortages, and severe poverty. Patients turning to such a market are at risk of fraud, unsafe surgery, increased morbidity, and poor post-operation care [19, 20]. Donors too may face coercion, violence, and be offered little compensation. Some believe that a regulated market provides an ethical vehicle for shortening waiting lists and decreasing illegal organ sales. In Iran, for instance, compensated and regulated unrelated living donor transplantation is in place [21]. There is, however, contradictory evidence

about efficacy, accountability, and safety of such operations. Due to definite risks associated with donation, the kind of financial protection an altruistic donor may have against the systematic and institutional exploitation is debatable [22].

Without a firm, unambiguous stance on organ trade, the government risks recipients exploiting loopholes or turning to the black market for their organs. In Taiwan, for instance, a relatively broad criterion is applied for the status of a spouse. There, a spouse is defined as a person who has given birth to at least one child or has a two-year marriage with the recipient [23]. This requirement may be open to possible abuse, a “business marriage” with a potential future donor. Besides the issues of coercion and compensation, a plan to legalize organ trade would still have to consider the moral question about the price of living human tissue.

Surgical expertise and resources

The high risks, taken by the living donors undergoing a hemihepatectomy, demand the transplant programs having adequate experience and proven surgical expertise in adult LDLT [24]. In accordance with the concept of equipoise, the risk to the donor must balance the benefit to the recipient. The transplant unit must hold adequate resources and some model should exist to assist the needy patients who are denied as they cannot pay the high cost of a liver transplant.

Transplant tourism

Transplant tourism is now operational in two ways: patients visiting another country to get the transplant or a foreign team visiting a country to perform transplants in local patients. Transplant tourism flourished in some regions like South Asia and Taiwan, in spite of the existence of strict laws [20, 25]. Foreigners bring their donors, and donors and recipients are sent back home after surgery for further care by their primary physicians. Not all the donors are relatives in such cases and they carry fake documents showing a relationship with the patients. In some cases, the donors may be from the host country. The overseas visitors have a poorer outcome which may be due to older patients operated, more comorbidities and beyond the criteria laid to undergo surgery, and lack of continuity of care [26].

Some centers in Asia carry out LDLT with foreign assistance. These visits may involve medico-legal or ethical concerns. Foreign teams have limited time, members, and resources. When they depart, healthcare centers face the problem of looking after post-operation patients with limited expertise on hand. If a patient develops a complication, for example, a biliary anastomotic leak or hepatic artery thrombosis or acute rejection, who is there to carry out surgical procedures

or organize further organ donation? Who is legally responsible in case of litigation? So there are reservations regarding medico-legal or ethical aspects of these visits.

Social media

Social media websites such as Facebook have assisted with matching strangers for living donor transplants [27]. There are also websites strictly for this purpose, though it remains illegal to pay a donor for an organ. Just as dating services cannot be held responsible for bad dates, these websites bear no responsibility for the outcomes of their matches. They also cannot ensure sufficient and accurate information about donation, transplantation, and post-operation life unless they are affiliated with a reputable healthcare center.

It would not be surprising if websites facilitating black market trade begin to surface, as the anonymity of the internet and the relative ease of website creation can provide sufficient cover for criminal activities. An internet-based organ trade would be difficult to regulate and would risk the harmful exploitation of vulnerable individuals.

Media-directed altruistic donations are ethically problematic. Seeking the help of social, print, or tele-media to find a person who will be willing to donate a part of the liver also raises ethical concerns as not everyone has access to the media or able to run successful media campaigns and how to prevent coercion and inducement by brokers (family or institution) [28].

Skype clinics

Skype and other online video-chat services are being used for pre-transplant evaluation and post-transplant follow-up [29]. Videoconferences eliminate travel time, costs, and improve patient compliance. Despite the convenience offered by the virtual clinics, they have their limitations. To what extent should online users rely on virtual consults? How accurate is that information? What sort of quality control is present? What are the responsibilities of online health providers and users? Can a physician give good advice to a patient online if that patient is not under his or her clinical care? Can video-chat from the convenience of home guarantee sufficient privacy and confidentiality? Virtual consultations appear to work better when the clinician and the patient know and trust each other [30].

“Do no harm” becomes even more important if the patient-doctor communication turns into exclusively virtual. What redress might users have if they are injured or their condition worsens as a result of availing online advice? Should virtual medics be held to the same level of accountability as their real-

world counterparts? Where should medical defense unions and their policies come in?

Prisoner donors

The use of organs from prisoners, whether willful, forced, compensated or from those facing the death penalty, raises a number of concerns [31, 32]. As with other patients, living donation puts prisoners at risk for complications and possible death. Weak state-run apparatus could leave room for abuse. For instance, wardens may coerce prisoners to “donate” organs for reduced sentences, and make life harder for those who do not. Jurors may impose harsher sentences to reduce organ shortages.

Comorbidity and disease severity

Patients with comorbidities or social insecurity may be placed at the bottom of a waiting list for surgery. Such high-risk patients may be suffering from alcohol-related liver disease [33], convicted criminals, suicidal, HIV-positive, or those that require re-transplants. Whether a patient who is not eligible for deceased donor liver transplantation should be eligible for LDLT [34]? One may argue that he would get the benefit when no other alternate options to sustain life were available and at the same time, he will not be a burden on the long waiting list for the deceased donations. In all the above scenarios, the transplant evaluation team must be thoughtful in their use of resources, recipient’s and donor’s rights, timing of transplantation, and be cognizant of other patients waiting for LDLT.

Case studies

Altruism

Mr. AM is a 45-year-old sole earner in his family of seven, needing urgent liver transplantation due to decompensated cirrhosis. He has four children (5–16 years of age), with the eldest son. His wife is 40 years old with a non-matching blood group. His mother (age 65 years) is healthy. There is no other “close” or “non-close” blood relative for donation. However, one of Mr. A’s childhood friends, Mr. YS, is fully willing to donate.

- Should Mr. YS be accepted as a donor, based on the principle of altruism?
- Would you consider his 16-year-old son for donation? [35]

- Would you consider his 65-year-old mother for liver donation?

Legal donor

Mr. ZA, a 55-year-old powerful landlord, was suffering from alcoholic cirrhosis and was advised for a liver transplant. He offered farmers working in his farms as donors, but the transplant center told him that only related persons can donate. He made a deal with one of his farmers and married his daughter and asked the transplant center to register her as his donor.

- Do you see any problem with this “deal”?

Referral commission

Dr. BM is a busy gastroenterologist. He was contacted by a successful liver transplant facility abroad asking him to refer affording patients for liver transplantation. In return, he was promised to have his “Referral Fee” for each case. He was told that there would not be any extra burden on the patient. He saw it a “win-win situation” and started referring the patients.

- Is taking a referral commission morally right, particularly in this situation?

Skype clinic

Mr. Y was very happy after a successful living donor liver transplant in the neighboring country. He was assured that the transplant team will follow him on Skype in consultation with his physician in his home country. He started developing jaundice 4 months post-transplant. After a thorough workup and ruling out any infection, acute rejection was suspected by the experts abroad on Skype and his immunosuppression was boosted up. However, he did not respond and was seen by a consultant hepatologist in the home country who diagnosed it as a biliary stricture at the anastomotic site. The patient improved after stenting the stricture.

- What should be the role of Skype clinics in the liver transplant setting?

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethics statement This article does not contain any studies with human participants or animals performed by any of the authors. The case studies in this article are hypothetical based on the experience of the authors.

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