

Ethical Aspects of Organ Transplantation

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Organ transplantation is one of the most exciting modern medical phenomena. Not a month goes by without news of some new development in this area. As an example of how far we have come, Dr. Starzl – one of the leaders in the field – has removed the liver, spleen, pancreas, small intestine and part of the large intestine with subsequent replacement by transplantation in an extensive operation with impressive results. We have indeed reached a stage where the ability of surgeons and their colleagues is quite remarkable.

However, as in many other disciplines, progress in the area of ethics has not kept up with that of science and medicine, and this discrepancy creates serious problems.

Perhaps we can learn from past mistakes. Let us begin with a historical survey: About 90 years ago Professor Carrel transplanted a heart into a dog, thereby demonstrating the surgical techniques necessary to connect blood vessels. Over a period of several decades other researchers attempted to transplant organs, but they met with no long-term success, principally because of immunological problems.

By the middle of this century several attempts to transplant kidneys had failed, even in cases involving close relatives. A breakthrough occurred during the 1950's when Professor Merrill overcame the immunological rejection by transplanting the kidney of an identical twin, an experiment which earned him the Nobel Prize.

For a number of reasons, the kidney is an excellent organ to transplant. First, since a person has two kidneys, the removal of one does not threaten the life of the donor. Secondly, the kidney is less delicate than the liver and heart; a kidney removed from a dead donor, even according to the conventional definition of death (i.e. the heart is no longer beating), may survive in the recipient. Thus the complicated subject of defining brain-death is avoided.

Over the years experimental transplantation of other organs has increased. In 1967 Christian Barnard transplanted a heart, receiving much more publicity than warranted by the pure medical significance of his accomplishment. Anastomosis of major blood vessels, such as the aorta, is not especially difficult, as had already been demonstrated by Carrel some 60 years earlier. But the idea that a heart could be removed from one person and transplanted into another created a worldwide stir. Dozens of surgeons in various centers began transplanting hearts, once the psychological barriers had been broken.

After the wave of enthusiasm of 1968-1969, when hundreds of hearts were transplanted, most medical centers stopped heart transplants. During this period Rav Moshe Feinstein defined these transplants as "double murder." At the time, he was exposed to heavy criticism: "How primitive! Here we are, progressing in great strides, and along comes this closed-minded individual who calls it 'double murder'!" But in retrospect it may justifiably be claimed that the first wave of heart transplants was a moral and medical failure. At the time there was as yet no consensus on the definition of brain death, on who was authorized to decide, and on how the decision was to be made. Insufficient knowledge in immunology, infectious disease and pathology also affected results adversely.

Of 162 patients who underwent heart transplants between 1968-1970, 144 died within a few months. The results were similar for most of the leading heart surgeons. For example, of 23 patients operated on by Dr. Denton Cooley, not a single one survived long-term. In addition, there were a number of serious moral breaches. The race to carry out heart transplants was worldwide, with almost every country eager to participate in the quest for glory. In Brazil an illiterate Indian arrived at a large hospital suffering from heart failure. He was admitted and underwent a heart transplant, of which he was informed only after regaining consciousness when he found himself face to face with TV cameras and journalists. The man died after three weeks. The statistics in the US for this period also show, for example, that most of the recipients were white, whereas most of the donors were black.

The implantation of the first artificial heart also raised very serious ethical problems. Previous animal experiments had been few in number, and the sheep which survived longest following such an transplant lived for only 44 hours. There was a widely publicized

scandal involving the transplant of an artificial heart by Dr. Cooley. Mr. Michael De Bakey accused Cooley of having transplanted a device which De Bakey claimed had been stolen from him by a technician, who had left De Bakey to work for Cooley.

A few outstanding surgeons saved the situation. Of particular note is Dr. Shumway, who though not particularly acknowledged at first invested much time and effort in basic animal experiments working in close cooperation with immunologists. By dint of careful clinical and basic research over several years he succeeded in making heart transplantation into an almost standard procedure with impressive results. It is thanks to his selflessness, dedication, and exacting research and practice that we have attained our present standards in heart transplants.

In summary we may say of this era in the history of organ transplants that in the exaggerated enthusiasm of the medical world, moral and medical norms were trampled underfoot.

What then are the principal ethical problems? The first is the definition of death. Without getting involved in the debate between the halachic authorities on this subject, I would like to emphasize some important principles:

First, the definition of the moment of death is not a medical one. The decision may be legal, halachic, moral or cultural depending on the particular society; the role of the physician is primarily to establish the facts. The decision whether to define death as occurring when all physiological processes in the body have ceased (which can take a few days), when breathing has stopped, or when the heart stops beating is not a medical one. For example, in Japanese culture the concept of brain-death has been difficult to accept because in that society the heart is of central importance.

The second principle is that we may not kill one person to save another, or even several others. Otherwise each one of us would be in danger daily, because we all possess several healthy organs which could save a number of patients who are waiting for transplants.

The third principle is that the definition of death of the organ donor and the decisions regarding his treatment must not be affected by the needs of the patient awaiting the transplant. There must be complete separation between the respective medical teams caring for the prospective donor and the prospective recipient in order to assure optimal care for both patients on both the moral

and medical level. For example, there is constant and growing pressure in some medical circles to change the definition of death from cessation of all brain activity to cessation of activity in the cerebral centers only. Thus there would be no need to wait for cessation of breathing before removing organs. The main problem concerns the persistent vegetative state, in which the patient is in a permanent coma but still breathes spontaneously and may continue to live in this state for several years. This situation poses enormous emotional and financial problems. In an "original" solution to this problem one respected philosopher has suggested that we simply change the definition of death and define these people as dead, thus "solving" the problem.

A similar phenomenon has occurred with regard to anencephalic babies who die shortly after birth, often without exhibiting the classic signs of brain-death. In such cases it is difficult to apply a brain-death criterion prior to using their organs for transplantation. But there are some medical centers where their organs are being harvested even before they reach the stage of brain-death.

Not long ago an article emerged from the University of Pittsburgh describing a method to increase the number of organs harvested after death as defined by cessation of heartbeat. The patients in question are critically and terminally ill, when the family and doctors decide that it is no longer worthwhile to prolong their lives the patients are brought into the operating theater, a catheter is inserted into the femoral artery, and – under supervision – it is decided when to disconnect the respirator. Thus the timing of death is controlled and the removal of the organs while they are still fresh is facilitated.

This idea is innovative in that it no longer views the donor as a patient but rather as a resource for transplantable organs. Potentially serious ramifications may emerge in hospitals where there is enormous financial pressure to increase the number of transplants.

There is also a host of problems surrounding the priority list for transplants. In May 1993 there were 31,000 patients in the United States awaiting the transplantation of various organs. Approximately one third of the patients requiring a liver or heart die waiting. In Israel the waiting list comprises several hundred patients.

When the awaited organ arrives, the next question is: to whom should it be given? The answer seems simple: surely the organ

should be given to whoever needs it “the most.” But on further thought the question is exceedingly difficult.

How does one decide who needs the organ “the most?” Do we decide according to the seriousness of the illness? Should we perhaps consider the degree of benefit to be achieved from the transplant? The most seriously ill do not always have the best chance of reaping the most benefit. Should we give the organ to the patient who has waited the longest? Should we take into consideration the candidate’s contribution to society? Is he a great Rabbi, an outstanding scientist, someone with a wife and family? Do we give an organ to someone who continues to smoke or to drink, behavior which is likely to harm the transplanted organ? Do we consider the candidate’s age?

In Europe, there are significant policy differences for kidney transplants with regard to age. In Norway 46% of the recipients are over the age of 55, whereas in Italy the figure is only 6%. Clearly, a variety of difficult moral and halachic questions are involved.

National priorities are receiving increasing attention. In the United States the annual per capita expenditure for health is now over \$3,000; in Israel it is about \$1000. There are countries in Asia and Africa where the average is less than \$100 per person per year. Obviously most developing countries cannot allow themselves the luxury of transplantation. Even in wealthy countries the question remains as to whether and how much money should be earmarked for transplants rather than for alternative medical needs.

For example, at the same time that Israel was approaching transplants with enthusiasm, mandatory payment for immunizations was instituted. This policy will almost inevitably result in a decrease in the immunization rate for children. Is it not preferable to immunize every citizen against Hepatitis B, rather than invest in liver transplants?

Some years ago I was a member of the committee appointed by the Israeli government to decide which hospital in Israel would carry out liver transplants. I participated in nine meetings and visited several hospitals. I learned an important lesson: some medical leaders are willing to distort facts in order to increase the prestige of their hospital as a transplantation center. We worked hard and submitted our findings to the Minister of Health, who read them with great understanding but went ahead and acted to the contrary.

There is another consideration with regard to the site for carrying out transplants. It is known that the chances for successful transplantation improve as the medical center gathers more experience. However, the number of heart or liver transplants in each medical center in Israel is quite low in comparison with European figures. I believe, therefore, that Israel should have restricted the number of centers permitted to carry out each type of transplant, rather than establishing multiple parallel facilities.

Unfortunately there is a great discrepancy between the demand for transplants and the number of donors. Only a small percentage of potential donors actually donate organs.

Leaving aside the question of liver and heart transplants for the major segments of the haredi community which forbids them since they do not accept the criterion of brain death, let us examine kidney and cornea transplants in the secular or national-religious communities (which do accept the brain-death criterion). Even here only a small percentage of potential organs are transplanted. This is a serious problem, both medically and morally. The secular press often accuses the orthodox establishment of holding up progress in transplants, but this is not so. Not long ago an article appeared in which the founder of an organization which promotes donations of kidneys for transplantation was interviewed. He reported that religious people actually donate more kidneys than do their secular counterparts.

I feel that many more organs could be made available in Israel if the State and Israeli society would regard transplantation as a priority. There are legal and ethical ways of increasing the percentage of patients who could receive transplants which halachic authorities approve and sometimes even mandate. I hope that we shall soon reach a stage where every possible organ will be used to save lives at least in those cases that are neither halachically nor ethically controversial.

Finally, I hope that we shall merit the true transplantation promised to us by the prophet Ezekiel: "And I shall give you a new heart, and a new spirit shall I put within you. And I shall remove the heart of stone from your flesh, and will give you a heart of flesh."

If the Holy One, Blessed be He, carries out the transplantations I am sure that they will all succeed.

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