Ethical Aspects of Organ Transplantation

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Organ transplantation is one of the most exciting issues facing modern medicine. 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 liver, spleen, pancreas, small intestine and part of the large intestine for transplantation in an impressive operation. We have indeed reached a stage where the ability of surgeons and their assistants is quite impressive.

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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 Karl transplanted a heart into a dog, thereby demonstrating the surgical techniques necessary to connect blood vessels. Over a period of several years other researchers attempted to transplant organs, but met with no long-term success, principally because of immunological problems.

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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 immunology problem by transplanting the kidney of an identical twin. This experiment earned him the Nobel Prize.

For a number of reasons, the kidney is an excellent organ to transplant. First, a person has two kidneys, and the removal of one of them does not present a threat to the life of the donor. Second, the kidney is less delicate than the liver and heart, and a kidney removed from a dead donor, even according to the conventional definition of death (i.e. the heart is no longer beating), may still be used. Thus the complicated subject of defining brain-death is avoided.

Over the years experimental transplantation of other organs has increased. In 1967 Christiaan Barnard transplanted a heart receiving much more publicity than warranted by the medical significance of his accomplishment. Connection of major blood vessels, such as the main arteries, is not especially difficult, as had already been demonstrated by Karl 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 doctors in various centers began transplanting hearts.

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 זיל 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'!" With hindsight, however, it may justifiably be claimed that the first wave of heart transplants was a moral and medical disgrace. At the time there was no consensus on the definition of brain death, who was authorized to decide, and how the decision was to be made. Insufficient knowledge in immunology, infection and pathology also affected results.

Out of 162 patients who underwent heart transplants between 1968-1970, 144 died within a few months. The results were similar for all the leading heart surgeons. For example, out of 23 patients operated on by

Dricoli, not a singe one survived in the long-term. In addition, there were a number of moral atrocities. 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 cardiac arrest. He was admitted and underwent a heart transplant, of which he was informed 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 U.S.A. for this period also show, for example, that most of the recipients were white, whereas most of the donors were black. 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. Collie. Diviek accused Collie of having transplanted a stolen device. He claimed that his technician, who had deserted him to work for Collie, had stolen it from him.

A few great surgeons have saved the situation. Of particular note is Shumway, who though not especially honored in his day invested much time and effort in animal experiments working in close cooperation with immunologists and slowly made the heart transplant into an almost standard operation 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 rules were trampled underfoot.

the definition of the moment of death is not a medical one

What then are the principal moral problems? The first is the definition of brain death. Without getting involved in the debate between the halachic authorities on this subject, I would like to mention some important points which are generally accepted.

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

The second point is that we don't kill one person to save another, or even several others. Otherwise each one of us would be in danger daily, because each of us possesses a number of healthy organs which could save a number of patients who are waiting for transplants.

The third point of general agreement is that the definition of death of the organ donor and decisions regarding his treatment cannot be affected by the needs of the patient awaiting the transplant. There must be complete separation between the respective medical teams to assure optimal care for both the patients on both the moral and social level. For example, there is constant and growing pressure in medical circles to change the definition of death from cessation of all mental activity to cessation of activity in the upper centers alone, i.e. the cerebrum. There are many who claim that there is 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 brain-death. In such cases it is difficult to apply a brain-death criterion in using their organs for transplantation. But there are some medical centers where their organs are already being transplanted even before they reach the stage of brain-death.

Not long ago an article emerged from the University of Petersburg describing a method to increase the number of organs harvested after death as defined as cessation of heartbeat. The patients in question are critically and terminally ill, and when the family and doctors decide that it is no longer worthwhile to prolong their lives they bring the patient into the operating theater, insert a syringe into the femoral artery, and - under supervision - decide when to disconnect the respirator, thus deciding the moment of death and facilitating the removal of the organs while they are still fresh.

This idea is innovative in that it views the donor not as a patient but rather as a resource for transplantable organs. This has serious ramifications 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 a couple of hundred patients.

When the awaited organ arrives, the next question is: to whom it should be given? The answer seems simple: surely the organ should be given to whoever needs it the most. But on second thought the question is exceedingly difficult. How does one decide who needs the organ the most? Do we measure the seriousness of the illness? Should we perhaps consider the probability of the patient reaping some benefit 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?

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In Europe, there are significant differences of policies 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 today expenditure for health is approximately $3,000 per person per year; in Israel it is less than $1000. There are countries in Asia where the average is less than $100 per person per year. Obviously most African countries cannot allow themselves the luxury of transplantation. Even in wealthy countries the question remains as to whether money should be earmarked for transplants or for alternative aims.

For example, at the same time that Israel was approaching transplants with enthusiasm, mandatory payment for inoculations was instituted. This of course resulted in a drop in the inoculation rate for children. Is it not perhaps more worthwhile to inoculate every citizen against Hepatitis B, rather than investing 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 important people are prepared to distort fact in order to bring honor to their hospital as a transplantation center. We worked hard and submitted our findings to the Minister of Health, who accepted them with great understanding but went ahead and acted to the contrary.

Here 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 chosen one medical center for each type of transplant, rather than establishing parallel facilities in several hospitals.

We are familiar with the great discrepancy between the demand for transplants and the number of existing donors. Only a small percentage of potential donors actually donate organs.

Leaving aside the question of liver and heart transplants for the ultra-orthodox community which forbids them since they do not accept the criterion of brain death, let us look at 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 possible organs are transplanted. In my opinion 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 locates organs for transplanting was interviewed. He reported that religious people actually donate more organs than secular people do. The problem is not essentially religious.

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 moral 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 transplantation I am sure that they will all succeed.