Ethics of organ transplantation

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Dhanwantari narrates: "During the great war of the gods, Rudra severed the head of Yadnya. The gods then approached the famous celestial twin surgeons, Aswinikumaras. They successfully united Yadnya's head to his trunk restoring him to life"

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"Susan," Stark said suddenly turning around to face her, "You must realise that medicine is on the brink of probably the biggest breakthrough in all of it's long history. The discovery of anesthesia, antibiotics...any of those epochal achievements will pale before the next giant step. We are about to crack the mystery of the immunological mechanisms. Soon we will be able to transplant all human organs at will. But such breakthroughs do not come easy, not without hard work and sacrifice. Not without a price. We need people like myself, indeed like Leonardo Da Vinci, willing to step beyond restrictive laws in order to ensure progress. What if Leonardo Da Vinci had not dug up his bodies for dissection? What if Copernicus had knuckled under the laws and dogma of the church? Where would we be today?

"Our legal system is not geared to handle our need. My god, they cannot make a decision to terminate a patient even after it is certain that the brain has turned to lifeless Jell-O. How can society proceed under a public policy handicap of that proportion?"

Coma by Robin Cook

Truth is stranger than fiction. Over the past few months our newspapers have been flooded with details of what may now be called 'the kidney transplant scam' in various major cities. Even though the existence of such organised activity was common knowledge, the sheer magnitude and brazen involvement of top doctors and hospitals has shocked the average citizen and medical professional. This, along with the recent notification of the Organ Transplant Bill 1994, has brought the ethics of transplantation to center stage. With cadaveric transplantation programs about to take off in many large hospitals, it is opportune to debate relevant ethical issues

History

Descriptions of organ transplantation are available in ancient Indian and Chinese medical texts. The technical basis for modern organ transplantation was laid by the French surgeon Alexis Carrel in a series of animal experiments conducted from 1902 onwards. The human kidney was first successfully transplanted in Boston in 1946. Transplantation of the liver followed in 1963 and that of the heart in 1967. Many other organs including the lung, pancreas and intestines are now transplanted successfully and such operations are recognised as established therapy by the WHO.'

The kidneys are paired organs. One kidney can, thus, be removed for transplantation from a living person. Organs like the heart and liver can only be removed from dead individuals. Transplants in the Western world were originally performed using organs from individuals in whom all bodily functions had come to a standstill and often failed as such organs are viable for a very short period after cessation of heart beat;

In the past two decades, the concept of 'brain death' (a state where the brain is irreversibly damaged but the heart is beating) has been accepted in the Western world. Whilst the criterion of death of the entire brain is used in the USA, British law only requires proof of death of the brainstem.

Brain dead individuals ('heart beating donors') are looked after in intensive care units (ICU) on artificial respiration. Their organs can be removed by deliberate, careful surgery. Almost all transplants in developed countries now use organs from brain-dead persons.

By 1990, 47 countries had accepted 'brain death' as a legal concepy[2] and 39 countries had enacted specific laws on organ transplantation[3]. The medical criteria for determining 'brain death' were first published by the Harvard Medical School in 1968.[4] In 1976, the Royal Colleges of the U.K. published a comprehensive code for the determination of 'brain death'.[5] Britain passed the Human Organ Transplant Act in 1989. This act, which forms the basis for the recently notified act in India, prohibited commercial dealings in human organs, restricted transplants between living persons who were not genetically related and required certain information to be supplied by transplant surgeons to statutory bodies.

The manner of obtaining consent for removal of organs from brain dead individuals has varied greatly.[3] Two principal forms of consent have been sought. 'Presumed consent' grants authority to doctors to remove organs from brain dead individuals in the absence of objection, from the deceased in his or her lifetime or from surviving family members. 'Informed consent' is based on the express desire by the deceased in his or her lifetime to donate organs or agreement by legally responsible family members to do so after 'brain death'. To obtain informed consent, the doctor must motivate the family to donate organs after 'brain death' has been

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declared. Even in the West, doctors have been reluctant to do so. In 1982, only 2500 of 20000 potential donors in the USA actually gave consent.[6] The discrepancy between 'demand' and 'supply' of organs continues to grow. In 1994, around 3000 patients waiting for an organ died in the USA.[7]

Once consent for removal of organs has been obtained, intimation is given by the concerned medical personnel to networks/organisations which coordinate transplant programs at various centers.

With organs always being in short supply, there is a scope for money, influence, race, religion and nationality creeping into the distribution system.

The choice of a recipient involves other ethical dilemmas. Should the organ be transplanted into the sickest patient since he needs it most, although he has the poorest chance of survival; or should it be transplanted into a relatively healthy patient, in whom the chances of success are better? Should patients with diseases brought on by addiction (liver disease from alcoholism) be debarred since it is likely that the patient may relapse into addiction? Given the shortage of organs, should the medical profession sit in moral judgment on diseases that are preventable or should it be guided only by the medical merit of the case?

Governments, medical bodies and other professional organisations in the west have responded decisively to ethical and legal problems related to transplants and have regularly issued guidelines. The Council of the Transplantation Society, an international body of transplant specialists, has regularly published clear guidelines for its members and warns them about expulsion if these are violated?

The Indian scene

The practice of medicine is largely unregulated here. Medical councils and organisations have played a passive role on ethical issues. They have failed to make their stand public or take action even in obvious malpractice. Although the press has been publishing explicit details on rackets in kidney transplantation in various cities no medical body has thought it fit to even conduct an investigation into them.

State medical councils have suo *motu* powers of investigation. These have never been invoked. The councils have also turned a blind eye to complaints lodged with them. Dr. C.Nanjappa, president of the Karnataka Medical Council, admitted that complaints against the accused in the Bangalore scam had been received in ***1993.*** All that the council had done was to 'note' that the behaviour of the doctors who appeared before them was 'suspicious' [9]. With a population that is largely illiterate and gullible, such attitudes by disciplinary agencies have nurtured a fertile ground for racketeering.

Transplantation in India has to date been confined to skin, bone, bone marrow, cornea and kidney. Government institutions have used kidneys only from near relatives of the patient (live, related donors). Such kidneys are less likely to be rejected by the recipient's body. In the private sector, however, both related and unrelated donors have been used, the latter offering the organ on payment. Touts and middle men have used coercion and deceit to obtain kidneys.

Till the passage of the recent bill, there was no comprehensive law regulating the removal of human organs. Three states - Goa, Himachal Pradesh and Maharashtra - resolved that matters concerning transplantation of human organs should be regulated by Parliamentary law.

The Transplantation of Human Organs Bill 1994 was passed by parliament in June 1994 and will immediately become applicable in these three states and all Union territories. It will come into force in other states as and when they adopt the act. The bill redefines death to include the concept of 'brain stem death' making retrieval of organs possible after proper consent. The Act permits transplantation of various cadaveric organs including the kidneys. The bill makes commercial trading in organs an offense. The Act makes it mandatory for all institutions conducting transplants to register with the authority appointed by the government. All persons associated in any way with hospitals conducting transplants without such registration are liable for punishment.

The Act could form the basis for withdrawing support to brain dead patients although this has not been stated explicitly in the bill. This will help optimal utilisation of scarce hospital resources. The family of the deceased will be spared prolonged agony and expense.

Likely problems

The diagnosis of brain death is made in ICUs where facilities exist for sustaining the other organ systems of a brain dead patient. Such ICUs are few and are commonly located in big metropolitan hospitals. They are overburdened, understaffed and lack a central command structure. Brain dead patients have traditionally been given low priority in ICUs and treated with benign neglect.

When such patients become donors, they require the same attention as that given to any critically ill patient. This demands a major attitudinal change and could be resented by an already overburdened staff. When other, salvageable, patients often lack the required medical attention, is it ethical to lavish such care on the dead?

The act of obtaining consent could run into trouble. The treating doctor (who is not a part of the transplant team) has to be motivated enough to seek such consent. Patients may lack relatives or may not have them in

attendance when the diagnosis of brain death is made. Although the bill provides for removal of organs from bodies not claimed over forty-eight hours after death, such removal could lead to problems if the relatives are eventually traced and object to the act. Decisions on organ donation often do not rest with a single relative and the entire family may need persuasion with loss of crucial time. Surgeons involved in a transplant program in Delhi note that doctors must be willing to spend a lot of time and effort with relatives."

With professional, inter-departmental and inter-hospital rivalries galore, team work could take a back seat. In a country where monetary and political considerations are acquiring an ominous hold on the behaviour of the medical profession, the scope for unethical acts in the transplant process is fearsome. In a private sector, where market values and profit making have reached grotesque levels, there could be havoc in a field where cash benefits can be astronomical. An immense task faces the monitoring agencies.

'Rewarded gifting '- the unrelated kidney donor

The great Indian kidney bazaar is an eloquent comment not only on the ethic of the medical profession but also on the social inequality and deprivation in our society.

The current bill clearly makes this form of organ procurement a punishable. offense. It remains important to consider the arguments of advocates of rewarded gifting since it is likely that they will continue to make efforts to revive this practice. "Kidney donation is a good act. It is a gift of life. The financial incentive to promote such an act is moral and justified"." "It is better to buy than to let die."[12] Proponents also claim results for this form of transplant comparable to those in living, related donors. Since we are a 'free' society and since we have now accepted 'market principles' in all aspects of life, what is wrong in a person selling a kidney for a price?

Transplant physicians from Oman described the fate of 130 patients who obtained live-unrelated kidney transplants in Bombay between 1984 and 1988.[13] There was a high post-operative mortality, several infections (including conversion to HIV positivity in four) and inadequate provision of information to the patient about treatment. In many instances, the names of doctors and hospitals in Bombay where the transplants were performed were not given to the patient. The governments in India and Oman chose to ignore this detailed report in a leading journal. No investigation followed.

It is now obvious that many such donors have been taken for a ride by middle men. The proposition that organs are donated by 'free will' has been demolished. It is often forgotten that the operation for removal of the kidney from a paid donor is fraught with danger. The person selling his kidney, like the person selling blood, will hide information on transmissible infections like AIDS.

What, then, about the patient who desperately requires a kidney but does not. have a close relative to donate it? Can there not be a role for buying the organ from a donor, with no middle men and proper maintenance of standards in the procedure? It is hoped that with the development of cadaveric transplantation the dependence on live donors will become unnecessary over time. The bill does allow for donation from a non-related person as long as the intentions of such a donation are scrutinised by an official committee.

The cost of transplantation - can we afford it?

Transplantation of any organ is expensive. Although issues of cost versus benefit fall in the realm of health policy and social ethics it is important for us to address these as well.

A liver transplant would cost about fifty thousand rupees in a public hospital. Transplantation will also make additional demands on the already strained resources in wards, operation theaters, blood banks and intensive care units. The costs in the private sector could run into hundreds of thousand rupees. The patient will also have to bear a life long recurring cost of five thousand rupees per month for immunosuppressive drugs. Many have argued that transplantation is too costly a venture for a country like India where the already scarce health resources are desperately required for primary care, immunisation and child health.

Such theoretical counterposition of funds for specialised and advanced medicine against those for primary care is uncalled for. The overall health allocation in our budget is one of the lowest in developing countries. There is scope for an increase in health funding. Resources for advanced medicine need not be provided at the cost of primary care if the state ensures a proper balance. Thousands with endstage disease can be provided a new lease of life through cadaveric transplant programs.

Hitherto, only the very rich benefited from transplantation of organs by travelling abroad and spending large sums. We should make organ transplants affordable by the average citizen in our public institutions.

Transplantation and religious beliefs

Transplantation of organs from one human being to another have thrown up complex religious and moral questions. If a heart is removed from a cadaver, does it mean that the latter is now devoid of a 'soul'? Will removal of organs in any way affect the process of 'rebirth' or resurrection?

In the Western world the dominant Christian religion no longer occupies an official, regulative position in day-to-day life but in many other countries religious sanction is required for acts dealing with death. Roman

Catholics and Protestants support organ donation, believing that God's power to resurrect the body will not be thwarted by prior disposal of its parts.[14] Christianity supports the act of giving. Judaism prohibits deriving benefit from mutilating or delaying the burial of a corpse but this prohibition can be overridden to save a life. The Islamic Qrganisation of Medical Sciences recognises brain death[2] and cadaveric organ transplants are carried out in many Islamic countries.

Shintoism opposes the concept of brain death. Transplantation of cadaveric organs is therefore not carried out in Japan.

Hinduism does not have a formal structure of guidelines or edicts with respect to such issues. Hindu and Vedic scholars accept the concept of brain death.[2] The concept of giving or *daan* is ingrained in Hindu thought. There has been no religious objection to the act of organ donation in India. Social service organisations report hundreds of inquiries from Indians desiring to donate body or organs after death. The Tata Institute of Social Sciences in Bombay found the majority of respondents in a survey in favour of organ transplantation, irrespective of religious and economic status. There is, thus, no serious opposition in this country to cadaveric transplants.

Ethical issues in the future

Liver transplants from live, related donors

It is now possible to transplant a part of an organ like the liver. Most such operations are from mother to child. Some aspects of such transplants worry ethicists. The major surgical operation on the donor carries a real, though small, risk of death. Since consent is obtained from a mother for helping her ailing child, is it truly voluntary?

Xenotransplantation and genetic engineering

Driven by the frustration of lack of organs available for transplantation, western surgeons have resorted to the use of organs from other species (xenotransplanatation). Efforts by Reemtsma, an American surgeon, in 1963 to transplant chimpanzee kidneys into six human patients met with poor results. In a much publicised case in 1984, Baby Fae, a 15-day-old infant received a baboon's heart at the Loma Linda University in California. Kidneys, livers and hearts have been transplanted from baboon to man. Besides raising issues on animal rights, the 'experimental' nature of such procedures has been criticised. Fears have been voiced of transmission of unknown infections from animals to man triggering human epidemics.

Attempts are being made to alter the immune potential of animals (such as pigs) by genetic engineering. Organs from such 'transgenic' pigs can then be transplanted since they will not be rejected by the human body. Such 'designer' animals could form an unlimited source of organs for an individual since they can be bred at will. Like the dinosaurs of Jurassic Park, however, those created by such genetic tampering may lead to disastrous long term consequences.

Conclusions

No other field of medicine has raised so many ethical, moral, legal and social issues as has organ transplantation. Many more areas for ethical debate are likely to emerge.

At present the very term transplant is likely to conjure up an image of shady and dangerous dealings in India. If we wish to improve upon the current situation, the first step is total transparency on the part of the medical profession and open, public, debate on this and related issues. Medical professionals must set ethical guidelines and take action against violators. Representatives of the common people must be included on the committees that will oversee these operations.

We must restore organ transplantation to where it really belongs - not as an example of all that is unethical and commercial but as a modern medical advance permitting one human being to make the gift of life to another.

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