Case report

Commentary: Retransplantation in a patient with cystic fibrosis

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Try the following nightmare. You are a policeman on the Titanic whose job is to decide who gets a place on the lifeboats—there is only room for one in three. "First come, first served" won't work as the crowd is swirling around you shouting, threatening, disorderly. How do you choose? Youth before age?—the young have many more years to gain. The fittest first?—better equipped to survive. Those who have been in a shipwreck before?—you know they can handle it. The rich and famous? Your own family and friends? The people with the loudest voice? The crowd is becoming menacing. Coolly you reach into your pocket and pull out a slim volume "*Lifeboats—an evidenced based approach*". You start to read "do more good than harm . . ., fairness and equity . . ., the greatest good for the greatest number . . .". You turn the page—the rest of the book is blank. You wake to find you are a simple chest physician with a patient who needs a lung transplant. Not enough donor organs, not enough evidence, not enough consensus. Should decisions be made by individual doctors on behalf of individual patients or is there now enough experience and agreement for guidelines and prospective research? The case report described by McCloskey *et al*[1] brings up a number of medical, ethical and economic issues where the evidence is lacking but decisions still need to be made.

Ideally we would like to know when a lung transplant will succeed and when it will fail, and to use this information to inform our decisions. Somewhat surprisingly, the disease causing the lung failure seems to make little difference to outcome and survival is similar for pulmonary hypertension, cystic fibrosis, emphysema, and fibrosing alveolitis. Similarly, we would like to know which preoperative states predict a bad outcome. At present we know that cachexia, diabetes, carriage of MRSA, and intubation with ventilation are all compatible with a good outcome and so are not absolute contraindications. However, there have been too few in each of these categories to know the true impact on long term survival. Conversely, most transplant centres have turned down patients carrying *M tuberculosis* or *Aspergillus* and so these risks can only be guessed at. The patient in this case report received advice from three different centres at a time when experience was evolving and different centres came to different decisions. By now most centres use fairly similar selection criteria but differences still exist and these can be exploited by a persistent patient. Such "centre hopping" is undesirable for a number of reasons. Firstly, it leads to confusion and cynicism together with the accusation that specialists do not know what they are doing; secondly, everybody wastes a lot of time; thirdly, and most important, it cannot be the fairest way of allocating donor organs. If all transplant centres agreed on their criteria and maintained an evolving consensus this could be avoided, but it might have the disadvantage of stifling diversity and limiting experience gained from trial and error.

The patient's family in this case report are likely to argue that a uniform approach in 1992 would have prevented their son from getting a transplant and so have denied him five full years—and therein lies the ethical dilemma. Should transplant decisions be made for the good of the individual or for the good of the wider community with lung failure? As doctors we usually act as advocates for an individual. If "my" patient gets a transplant and "yours" does not, I have done the best I can for "mine". Too bad about "yours". Now let us consider the donor's point of view. Would the donor prefer "my" patient or "yours". Probably he would simply want to be sure that someone benefited and that this benefit lasted as long as possible with the least additional distress. For example, a prolonged postoperative stay in the intensive care unit with subsequent death would be the worst outcome with a waste of donor organs and an increase in total suffering. The transplant unit and the NHS would probably share this point of view since it combines the greatest good for the greatest number with the best effect on staff morale and the best use of money. However, ensuring best long term medical, ethical and economic outcome is difficult to achieve. What do we do when the person on the transplant list is articulate, influential, or simply shouts very loudly? The case report argues for individual autonomy and supports the individual against a paternalistic and patronising medical machine. This is an attractive argument but ignores completely the rights of quieter individuals on the waiting list. Furthermore, the decision to do a second transplant can be questioned both on the grounds of equity and on the possibility of poorer outcome after failure of the first.

In my view the overriding priorities should be to ensure the best possible use of scarce donor organs and to ensure the fairest system of distribution by treating all potential recipients as entirely equal. The first requires ever improving predictions of long term outcome. Current evidence is poor and incomplete but, by pooling

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knowledge, sharing consensus guidelines, and testing areas of uncertainty by prospective trials, these can all get better. The second priority of fairness is harder to achieve. Persistence, debating skills, and sheer bloody mindedness can be powerful in influencing doctors' decisions, not least by wearing them down and occupying time. The doctors involved in the care of the reported case probably had a very difficult time in meeting the family's arguments and coming to a correct decision. Some consensus guidelines would have helped them to get it right and would have left less room for negotiation. Nevertheless, most doctors are human and resent having these key decisions made by a rule book. Transplant surgeons are more human than the rest of us and may find it even more difficult, particularly if the rule book constrains not only their clinical judgement but also their drive to innovate and explore the unknown. Has the time now come to write the rules?

1 McCloskey M, Maxwell AP, Hall V, *et al*. Retransplantation in a patient with cystic fibrosis. *Thorax* 1998;**53**:1000–1.

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Retransplantation in a patient with cystic fibrosis

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Abstract

A patient with cystic fibrosis is described who requested a third lung transplant. The medical and ethical issues involved are discussed.

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The first successful transplants for cystic fibrosis in the United Kingdom were performed in 1985.[1 2] Since then lung transplantation has become an accepted treatment for patients with end stage cystic fibrosis, the number of new transplants being around 40 each year. The role of repeat transplantation, however, is unclear. We describe a patient with cystic fibrosis, who had had a successful heart-lung transplant procedure followed by a second lung transplant, who presented with a request for a third lung transplant. Some of the medical and ethical issues involved are discussed.

Case report

The patient was a man born in 1974. The diagnosis of cystic fibrosis was made at three months of age by sweat iontophoresis and by the age of 10 years he had had 14 admissions to hospital. In 1988, when he was 14, his body mass index (BMI) was markedly reduced at 14.1 kg/m^2, forced expiratory volume in one second (FEV_1) was 0.7 l (26% predicted), and forced vital capacity (FVC) was 1.25 l (42.5% predicted). At this stage his family asked that he be referred for assessment for heart and lung transplantation. He was not accepted for the procedure because he was prepubertal, had previous positive sputum cultures of aspergillus, and his body weight was less than 75% predicted. He and his family insisted he be referred to another unit where he was accepted and received a heart-lung transplant in February 1989. His immunosuppressive regime was cyclosporin 15 mg/kg daily and azathioprine 2 mg/kg daily.

He remained very well over the next two years and in June 1990 his FEV_1 was 3.3 l (95% predicted), FVC 4.2 l (97% predicted), and BMI 18.0 kg/m^2.

In 1991 he developed a wheeze and his pulmonary function began to deteriorate; a diagnosis of bronchiolitis obliterans was made. He was commenced on 15–40 mg prednisolone daily in addition to his cyclosporin and azathioprine, with no appreciable benefit. Creatinine clearance in 1992 was 38 ml/min. In July 1993 his FEV_1 was 0.6 l (15.7% predicted) and FVC 2.4 l (50% predicted).

At this stage the patient and his family were anxious for him to be considered for a further transplant. The unit where the first transplant was performed felt that it was inappropriate to perform another graft procedure. At the patient's request he was referred to a third unit where he received a single lung transplant in April 1994 at the age of 20. His immunosuppressive regime was cyclosporin 15 mg/kg daily, azathioprine 3 mg/kg daily, and prednisolone 4 mg daily. In July 1994 his FEV_1 was 1.83 l (55.7% predicted) and FVC was 1.9 l (44.8% predicted).

He remained well, leading an independent life and maintaining his own business, until January 1995 when he developed progressive deterioration in pulmonary function. His FEV_1 was 0.9 l (22% predicted) and FVC was 2.3 l (49% predicted). Cyclosporin was changed to tacrolimus 5 mg twice daily. In March 1996 he asked to be referred for a further transplant, his creatinine clearance at this stage was 24 ml/min. This was discussed with the unit where he had his single lung transplant and a further assessment arranged. In June 1996 the patient was admitted with advanced uraemia (creatinine clearance 6 ml/min, urea 31.8 mmol/l, serum creatinine 634 μmol/l, urinary protein excretion 7 g/24 h). A biopsy specimen was not taken but possible aetiologies of his renal failure included amyloidosis and cyclosporin nephrotoxicity. He commenced thrice weekly haemodialysis. Assessment for pulmonary and

renal transplant was now considered inappropriate by the referring physician and the transplant team. After commencement of dialysis his quality of life improved but in September 1996 he died suddenly while returning from a weekend break with his family.

Discussion

The demand for lung transplantation increased by 188% from 1986 to 1992; in the United States 300 people were on the waiting list in 1988 and in 1992 this number was 1000 and continues to rise, but over the same time period donor supply has remained stable.[3 4] The ethical dilemmas associated with organ transplantation have increased as the disparity between supply and demand has increased. In this case one person's determination to exert his own autonomy overturned the medical profession's paternalistic decisions on two occasions with the result that he extended his short life by six years. This supports the argument that well informed patients can, despite age and illness, make appropriate decisions about their management. Rapid technological developments in medical practice accompanied by media interest in clinical issues has resulted in a greater willingness to challenge physician decisions. Patients are no longer supplicants in the doctor-patient relationship but are often now perceived as clients or consumers.

Examining the ethical issues in this case from a utilitarian view point, it can be argued that the health service provides a service to all people and it cannot be assumed that this patient was more worthy of transplantation because of his very young age and lifestyle.

Criteria for referral for transplantation and placement on a transplantation list must be impartial, well described, and strictly adhered to on a universal basis, as it is unacceptable to think that prioritising patients could depend on the lifestyle of the patient and the lobbying skills of their relatives. In the case described here, medical staff made an informed decision on each occasion based on currently available evidence which they believed to be in the best interests of all concerned. This approach of rigid, strictly adhered to guidelines may appear stark and impersonal.[5] The physician must remain the patient's advocate, even in the current climate of budgeting constraints. An effective advocate should see a patient as an individual, deserving of the best and most appropriate standards of care. It is difficult to quantify the magnitude of a physician's role in modern ethical decision making. Outside the traditional doctor-patient relationship there are many other groups and individuals influencing the decision making process. These include relatives, legal representatives, nurses, social workers, and other professionals allied to medicine. Decisions are taken with reference to current law, social etiquette, religious beliefs, and professional codes.

Applying the principles of evidence based medicine, this patient should not have been referred by the physician in charge for a third transplant assessment as he already had signs of severe renal impairment and studies have shown that these patients do badly after transplantation. A joint decision for referral was made by the family, patient and physician, with all those involved fully aware of the risks involved. It would have been morally wrong not to respect the personal autonomy of the patient and an infringement of his human rights.

When he was finally refused assessment for renal and lung transplantation he and his family accepted the decision calmly and with dignity. He accepted the medical opinion that transplantation was not feasible as he had an informed and honest relationship with the team and respected their decision.

This case illustrates that, in the final analysis, as well as having a set of guidelines we must treat patients as individuals, continue to be their advocate and, by keeping them well informed, have faith in their goodwill and common sense to help in the decision making process and accept decisions that may not be to their advantage.

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