TRANSPLANTATION—3

KIDNEY TRANSPLANTATION

(a) The donor

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The relative merits of living and cadaveric donations of kidneys are considered in this week's transplantation article.

KIDNEY transplantation has emerged from being an experimental procedure to one where it is fast becoming a commonplace therapeutic procedure. Already the results are sufficiently good both in survival and in the quality of life of the recipient, and they offer a better chance of success than many operations which are daily performed for malignant disease in other organs.

A considerable experience in kidney transplantation has been built up during the past 17 years. As a result, certain guidelines of selection and management can be laid down not only for the kidney, but also for other realms of organ transplantation.

The Living Donor

The best results so far in kidney transplantation have come from living donors. This is best seen where it has been possible to use a kidney from an identical twin, when one of the twins has renal failure. Under these conditions, the recipient does not need to be treated for rejection. As the tissues of the kidney are identical for both of the identical twins, the recipient will treat the new kidney as one of its own and will not reject it.

Whatever motivates a relative to donate a kidney, the prospective donor must be brought into the hospital for evaluation. Not only is this necessary for physiological and anatomical assessment, but also for psychological reasons. It is quite possible for a relative to be nominated by the family as the most suitable person to give a kidney, and this may actually be subtle method of implying that he or she is the person the family would least miss if anything went wrong. Such an unwilling donor must be protected from his relatives and provided by the hospital with an escape from this dilemma.

The ethical problems of living donors will be discussed in a separate article, but suffice it to say at this point that there is no indication for using an unrelated living donor for transplantation unless the kidney is being removed for other reasons. The result from unrelated living donors are much the same as from cadaveric donors, while the so-called 'free kidney' which is still usable is becoming a rarity.

Assessment of the donor must be done in the light that kidney transplantation is no longer a last-ditch stand, but a successful life-saving procedure. For transplants from related living donors the one-year unrelated living donors, it is about 60%. Both of these figures have dropped 20% by two years after transplantation. This is the sort of success rate which the donor is being asked to participate in but it is no good saving one life if in doing so the donor’s is spoiled.

Prospective donors who have a pathological emotional compulsion to donate a kidney should not be accepted, nor those with an insecure background or a past history of psychological illness. An attempt should also be made to exclude donors who cannot calmly accept the fact that their donation may be in vain and the operation a failure.

Having surmounted these preliminaries, the prospective donor must be further screened.

Clinical Aspects

It is desirable to have prospective donor who is in good general physical condition. It is usually undesirable to consider a hypertensive patient (the kidney may be damaged already) or someone with chronic urinary infection. Further information on these points can be obtained by urine analysis, blood urea and creatinine evaluation.

On the basis of not taking undue risks with the donor, it would be unwise to accept someone who was grossly overweight or had a history of vascular disease such as thrombophlebitis or coronary artery disease.

From the recipient’s point of view, it would be unwise to use a kidney from a donor with malignant disease as the transplant situation is one where malignant cells can be transplanted with the kidney and can flourish.

Compatiblity

As in blood transfusion, it is vital to match the donor and recipient for blood group compatibility. If this is not done the kidney transplant will usually be speedily rejected. The following are results of certain blood group matches and mismatches:

<table>
<thead>
<tr>
<th>DONOR</th>
<th>RECIPIENT</th>
<th>RESULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group O</td>
<td>Groups A, B, or O</td>
<td>Safe</td>
</tr>
<tr>
<td>Rh type</td>
<td>Rh type</td>
<td></td>
</tr>
<tr>
<td>A positive</td>
<td>A positive</td>
<td>Relatively safe</td>
</tr>
<tr>
<td>Group A</td>
<td>Groups A, O</td>
<td>Dangerous</td>
</tr>
<tr>
<td>Group B</td>
<td>Groups B, O</td>
<td>Dangerous</td>
</tr>
</tbody>
</table>

Further testing can be done to see if the donor’s lymphocytes are compatible with the recipient’s. This

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