

## **Donor Nephrectomy for Living-related Renal Transplant** **活體腎移植之捐贈腎切除手術**

### **Introduction**

Of the various options for patients with end stage renal disease, kidney transplantation is the treatment of choice for a suitable patient. Compared to deceased donor transplantation, living donor kidney transplantation provides a reduced risk of delayed graft function, improved long-term function, lower rates of rejection, and increased flexibility in preparing recipients for transplantation.

A donor nephrectomy is a surgical procedure to remove one of the two healthy kidneys from a live donor for transplant into a person who has end-stage renal disease. The kidneys are two bean-shaped organs located on each side of the abdominal cavity. Their main function is to filter and remove excess waste products and fluid from the blood by producing urine. Leaving one healthy kidney to the donor is adequate for full, healthy life. The donor may be either related to the potential recipient or unrelated (e.g. wife).

### **The procedure**

Donor nephrectomy is an operation can be done via either a laparoscopic or an open surgical approach under general anesthesia. An open approach to donor nephrectomy is commonly performed through a flank incision, while laparoscopic approach is performed through multiple small wounds over the abdomen with the laparoscopic instruments through the abdominal ports. The choice of approach will be based on the anatomical factors of the kidney for the best interest of the donor.

During the operation, the kidney is isolated from surrounding structures. The renal artery and vein are dissected and divided. The ureter is preserved with generous periureteric fatty tissue. The kidney is removed with its surrounding fat and attached vessels and ureter. Once confirmed hemostasis achieved. The wound is then closed with stitches and staples. A wound drain may be inserted to drain any wound ooze. This is usually stitched in place and stays in for few days.

A urinary catheter, which drains urine from the bladder, is also put in to monitor the urine output from the remaining kidney. The catheter usually stays in for 1-2 days, or

until the donor is up and about.

The harvested kidney is perfused with cold preservation fluid, bench-prepared and stored in cold till transplantation to the recipient.

## **Risks and Complications**

Mortality (<0.1%), major morbidity (0.2%), minor morbidity (~8%)

### Peri-operative

1. Anaesthetic complications
2. Significant bleeding requiring blood transfusion and haematoma formation
3. Injury to adjacent organs including major blood vessel, gastrointestinal tract, pancreas, liver and spleen, requiring intervention including operation
4. Entry into the lung cavity requiring insertion of a temporary drainage tube

### Post-operative

1. Systemic life threatening complication including myocardial infarction, cerebral vascular accident, deep vein thrombosis and pulmonary embolism
2. Secondary haemorrhage
3. Wound infection, pneumonia, urinary tract infection
4. Urinary fistula, pancreatic fistula
5. Intestinal obstruction or paralytic ileus
6. Bulging of the wound due to damage to the nerves serving the abdominal wall muscles.
7. Renal function impairment
8. Hypertension, proteinuria, diabetes mellitus
9. Pregnancy-related complications such as gestational diabetes mellitus, gestational hypertension, pre-eclampsia

This list is not exhaustive and rare complications cannot be listed.

## **Preparation before the procedure**

You will be asked not to eat or drink for 6 hours before surgery and, immediately before the operation. You may be given a pre-medication by the anaesthetist which

will make you dry-mouthed and pleasantly sleepy. Preparation such as antibiotic prophylaxis or cross match will be prescribed.

### **Care after the procedure**

Postoperative care such as need for fasting, monitoring, analgesics and sedation, catheterization, drainage, antibiotics cover, blood transfusion and fluid replacement will be prescribed. There may be slight bleeding at wound. In general, you can drink on first day and eat on second day after surgery. Usually by the second or third day after surgery, the drains and tubes have been removed. You may need to stay in hospital for 4 to 7 days after surgery. All the sutures and wound staples usually stay in for 7 to 10 days. Patient will be given instruction for removal of skin sutures if required.

### **Follow up**

You will be discharged when considered appropriate. You should follow instruction for follow up given upon your discharge. Full recovery from surgery usually takes around 6 weeks. Keep active, gentle exercise such as walking is recommended. You will be able to eat and drink normally at home. No heavy lifting, straining, gardening for up to six weeks or until advised by your doctor.

You will have a follow-up appointment arranged for you upon discharge. If serious events develop after discharge, you should seek medical advice at the nearest Accident and Emergency Department. For examples:

- Signs of infection, such as increase in redness, or heat around the wound
- Excessive bleeding
- Severe pain

### **Remarks**

There may be possible untoward events occurred during recipient operations and the renal transplantation may not go as planned. The kidney removed may not be transplanted to the intended recipient and resulted in an “Orphaned Kidney”. The “Orphaned Kidney” will be transplanted to the patients on the deceased waiting list

according to the prevailing HA allocation mechanism. The kidney will not be auto-transplanted back to the donor.

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your doctor.