**Introduction:**

**Radical nephrectomy** is a surgical procedure to remove the entire kidney. This is usually performed for kidney cancer, although may be performed for diseased kidneys. **Partial nephrectomy** involves removal of a tumor from the kidney without removing the entire kidney.

Laparoscopic kidney surgery involves the insertion of a long thin camera into the abdomen. The surgery is performed through several incisions using long instruments. One of the incisions will be large enough to remove the specimen (the kidney or the kidney tumour), while the other incisions will be 1cm or smaller. We perform laparoscopic kidney surgery whenever safe and feasible as it is associated with a shorter hospital stay and less pain compared to open surgery. Patients can usually go home after 1-2 nights in the hospital after laparoscopic surgery.

Open kidney surgery is performed when necessary, depending on the size and location of the tumour. Length of hospital stay is usually 3-4 nights and many patients will have an epidural placed prior to surgery and left in for a couple of days after to prevent pain. Some patients booked for laparoscopic surgery will need to be “converted” to open surgery, depending on intra-operative findings.

After kidney surgery, patients will have a catheter in the bladder which is usually removed before leaving the hospital. Some patients will also have an abdominal drain to monitor for accumulation of fluids (urine or blood) in the abdomen.

**Side effects and potential risks:**

Patients typically have a decline in overall kidney function after surgery, but it is rare that this will impact the patient in any meaningful way. The development of kidney failure, or the need for dialysis, is very rare, unless the patient already has kidney disease. Conditions which can cause ongoing decline in kidney function include high blood pressure and diabetes, particularly if these conditions are poorly controlled. Patients should see their family physician periodically. A diet high in fruits and vegetables and low in salt is recommended after nephrectomy. Smokers are encouraged to try to quit.

Major bleeding is rare during kidney surgery, although this risk increases for very large or aggressive kidney cancers.

A rare complication which is unique to partial nephrectomy (rather than radical nephrectomy) is leakage of urine from the kidney into the abdomen. This is usually managed by an abdominal drain and/or placement of a ureteric stent (a long thin tube which extends from the kidney to the bladder). Partial nephrectomy can also result in a delayed bleed from the kidney, or a "pseudoaneurysm" which can result in the need for additional procedures, including kidney removal.

**Discharge instructions:**

You will be given a prescription for a painkiller. Most patients will require painkillers for 1 or 2 days at home following laparoscopic kidney surgery, or 3-4 days following open kidney surgery. You should avoid heavy lifting and strenuous activity for 6 weeks following surgery. You can drive as soon as you are no longer requiring prescription painkillers. You can shower at home immediately after surgery but should avoid baths, hot tubs, and swimming pools for 4 weeks. If you were instructed to hold blood thinners for the procedure, you can resume these once your urine has been clear for 2 consecutive days.