Robotic radical prostatectomy following renal transplant

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Introduction & Objectives: Although renal transplant is uncommon, prostate cancer is very common. The majority of renal transplant recipients are now older than 45 years and due to improvements in operative technique and immunosuppression their lifespans are likely to continue to improve.

Treating prostate cancer in recipients of a renal transplant is a clinical and technical challenge. The difficulty encountered in surgical management can be difficult to predict pre-operatively and protection of the graft must be considered the top priority. Radiotherapy has concerns about complications to the transplant ureters and is generally not used in these patients.

In the attached video, a left sided and a right sided case will be presented and operative techniques discussed.

The most important consideration when performing prostatectomy following renal transplant is protection of the graft. A patient with localised prostate cancer, i.e. a candidate for radical prostatectomy, has a 100% disease specific survival at 10 years, in contrast, a patient starting dialysis at age 60 has a life expectancy of 4 years. Thus the prospect of graft injury holds significantly larger danger to the patient than untreated prostate cancer and treatment planning should proceed accordingly.

Prior to the procedure, the position of the ureter relative to the prostate and the position of the kidney relative to the pelvic inlet are the most important considerations. Great care should be taken if the transplant ureter is likely to be encountered, pre-operative stenting should be performed at a minimum. Similarly, if the positioning of the kidney precludes pelvic access consideration should be given to performing the procedure via an alternative approach rather than transperitoneal. Small changes in positioning of the kidney or ureter when mobilised can affect patency and flow - it should be avoided if possible.

Also relevant intraoperatively is the possibility of inadvertent injury to the transplant while it is not in view. This is a consideration for both robotic instruments and the assistant. Surgeons should repeatedly check the angles of approach for the robotic instruments at each stage of the procedure and instrument changes should happen under vision, out of the pelvis. This is also true for the assistant, clips and other instruments should only be inserted under vision.

Other issues include the need to minimise intraabdominal pressure, as excessive pneumoperitoneum can injure the transplant kidney, the vital importance of negative margins due to the lack of the option for adjuvant radiotherapy and the fact that node dissection if attempted is likely to be incredibly challenging. The final issue is that of wound and anastomosis healing. Consideration should be given to performing cystograms on patients who are unable to reduce their immunosuppression and their wound healing is affected.