Urological and Surgical Problems in the Transplant Patient

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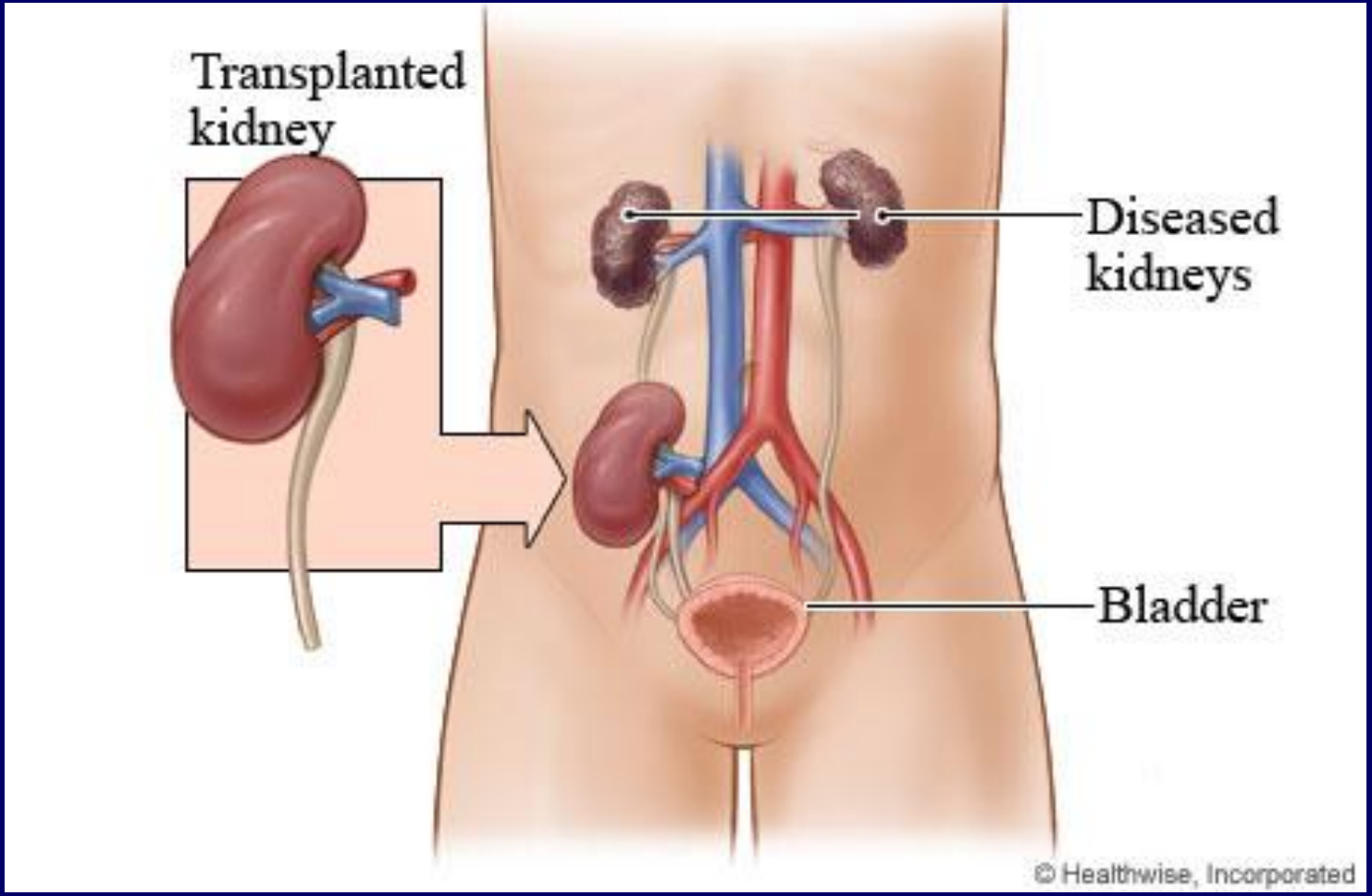
Overview

- Reminder of the surgical procedure
- Case Based Discussions
- Pre-transplant assessment (focused on reducing surgical risks)
- Urological complications
- Vascular complications

Renal Transplant- The Surgery



Case 1

- 64 year old male referred for transplant assessment. Has been on unit HD for 9 years, PD for 2 years prior to that. Anuric. Cardiac assessments satisfactory. Symptoms of left calf pain on exertion, relieved by rest. Very keen on having a transplant.

- What questions would you ask in the history?
- What would you want to know from a clinical examination?
- Any additional tests?

Pre-transplant urological assessment

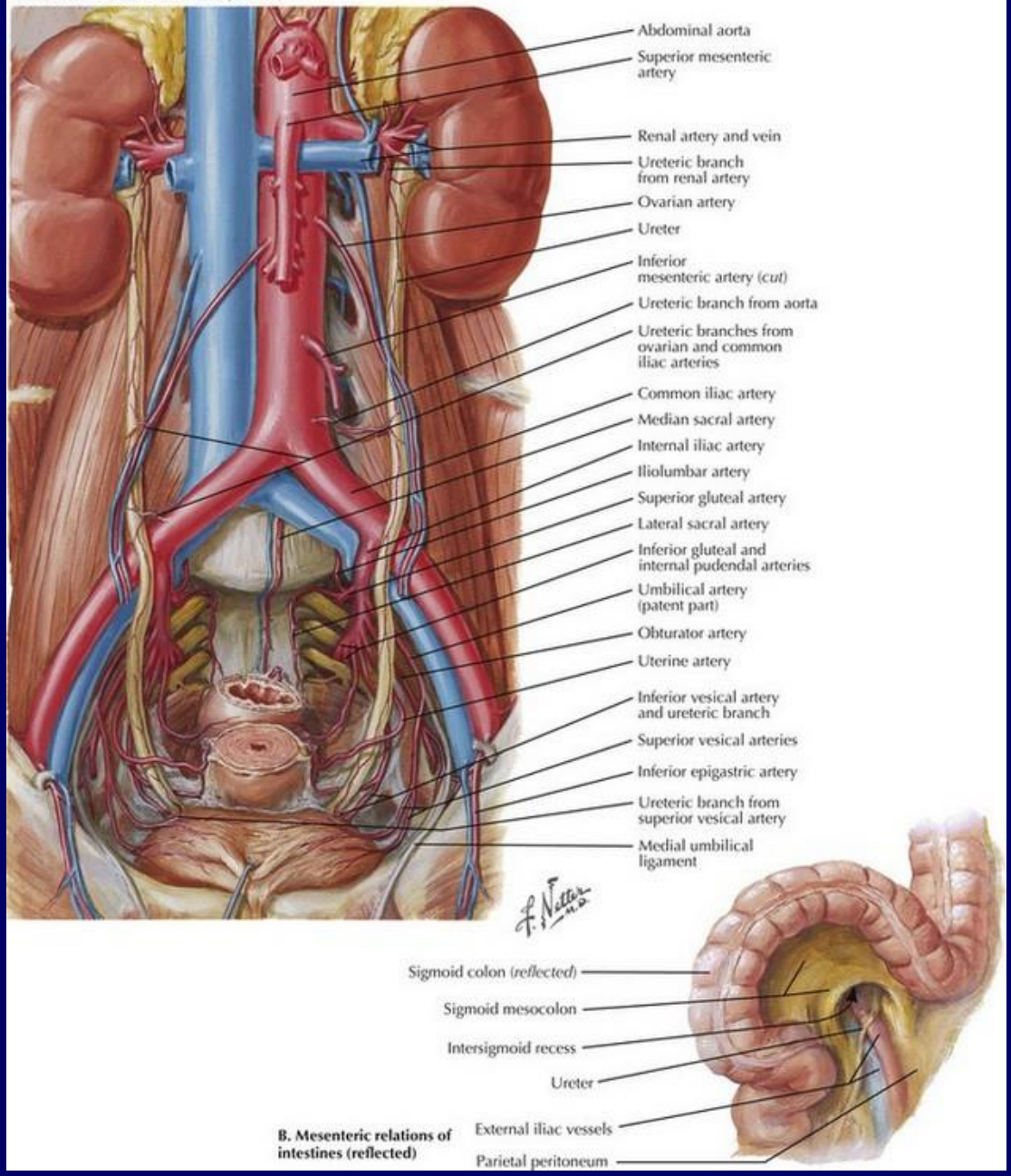
- i) the lower urinary tract should be sterile, continent, compliant and able to store an adequate amount of urine
- ii) exclude bladder outlet obstruction: normal flow of urine and constant method of bladder emptying (*via* own micturition or clean intermittent self-catheterization or urinary diversion)
- iii) exclude urinary tract malignancies
- iv) is native nephrectomy required?

A conduit to store urine at low pressure and empty completely at intervals

Pre-transplant vascular assessment

- i) is there a suitable artery and vein close enough to the urinary conduit?
- ii) is there space to place a kidney next to the suitable vessels?
- iii) is the distal vascular tree at risk if a kidney is placed proximally?

A. Arteries of ureters and urinary bladder



B. Mesenteric relations of intestines (reflected)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Case 2

- 25 year old female, IgA nephropathy, no other comorbidities, BMI 21. Just received a DBD donor kidney transplant (29 year old male, good renal function). Perfused well in theatre, urine passed on the table.
- In recovery, good blood pressure, CVP +12, painfree. Minimal urine output.

- What would you do?

Early Surgical Complications of renal transplantation

- Peri-operative
  - vascular mainly
- Early postoperative
  - vascular (thrombosis or bleeding)
  - collections
  - wound problems
  - urinary complications

Case 3

- 62 year old female day 5 post DBD donor transplant. Had been on HD 9 years prior to the transplant. Immediate graft function and recovering well. Creat falling nicely until today when it has stabilised. Drain and catheter still in-situ but no other lines etc. Feeling well.

- What extra information would you like?
- What are the possible explanations?
- What would you do?

Cochrane Library

Cochrane Database of Systematic Reviews

Routine intraoperative ureteric stenting for kidney transplant recipients (Review)

Wilson CH, Rix DA, Manas DM

Main results

Seven RCTs (1154 patients) of low or moderate quality were identified. The incidence of MUCs was significantly reduced (RR 0.24, 95% CI 0.07 to 0.77, P = 0.02, NNT 13) by universal prophylactic stenting. This was dependent on whether the same surgeon performed, or was in attendance, during the operations. Two patients lost their grafts to infective urinary tract complications in the stented group. UTIs, in general, were more common in stented patients (RR 1.49, 95% CI 1.04 to 2.15) unless the patients were prescribed cotrimoxazole 480 mg/d: in which case the incidence was equivalent (RR 0.97, 95% CI 0.71 to 1.33). Stents appeared generally well tolerated, although studies using longer stents (≥ 20 cm) for longer periods (> 6 weeks) had more problems with encrustation and migration.

Authors' conclusions

Routine prophylactic stenting reduces the incidence of MUCs. Studies comparing selective stenting and universal prophylactic stenting, whilst difficult to design and analyse, would address the unresolved quality of life and economic issues.

Case 4

- 59 year old male received a DCD donor transplant just over 6 weeks ago. Transplant procedure was uncomplicated but the recovery was complicated by delayed graft function (10 days). Graft function finally settled with a GFR of around 40.

- Seen in the outpatient clinic. Notes have gone missing but he is feeling well. However GFR has suddenly fallen to <20.

- What additional information would you like?
- What is the most likely diagnosis?
- How would you confirm the diagnosis?

Medium term surgical complications of renal transplantation

- Vascular
  - Renal Artery Stenosis
- Urological
  - Ureteric stenosis

Ureteric obstruction

Causes of obstruction in renal transplant patients

Risk factors	Intrinsic obstruction	Extrinsic compression	Others
>65 years old	Oedema	Lymphocele	Ischaemia
More than two transplant arteries	Clot	Abscess	Kinking
Increased cold ischaemia time	Tumour	Haematoma	Previously unrecognized PUJ obstruction
Stentless anastomotic transplant	Calculi		Misplacement of ureteric anastomosis

PUJ, pelviureteric junction.

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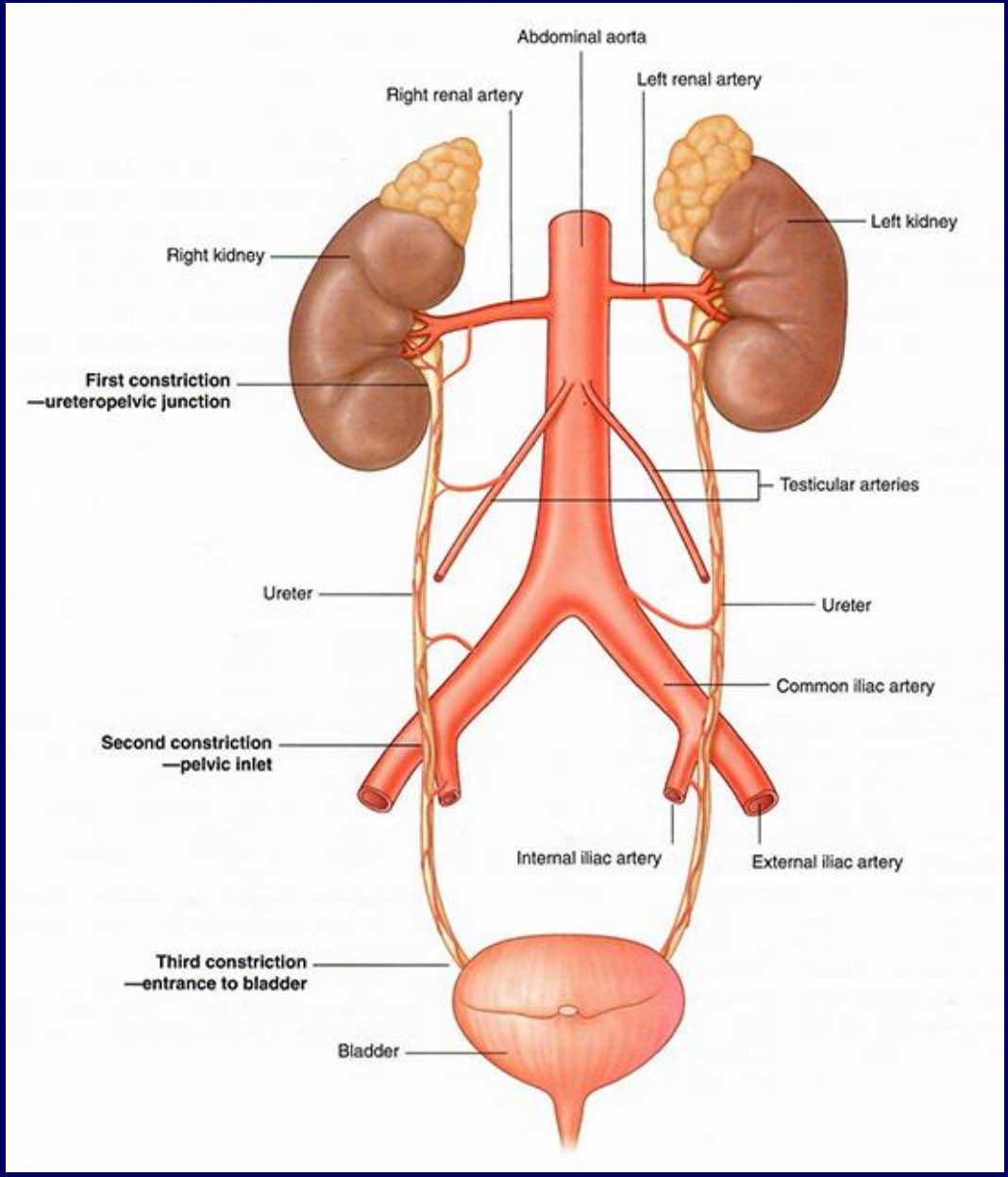
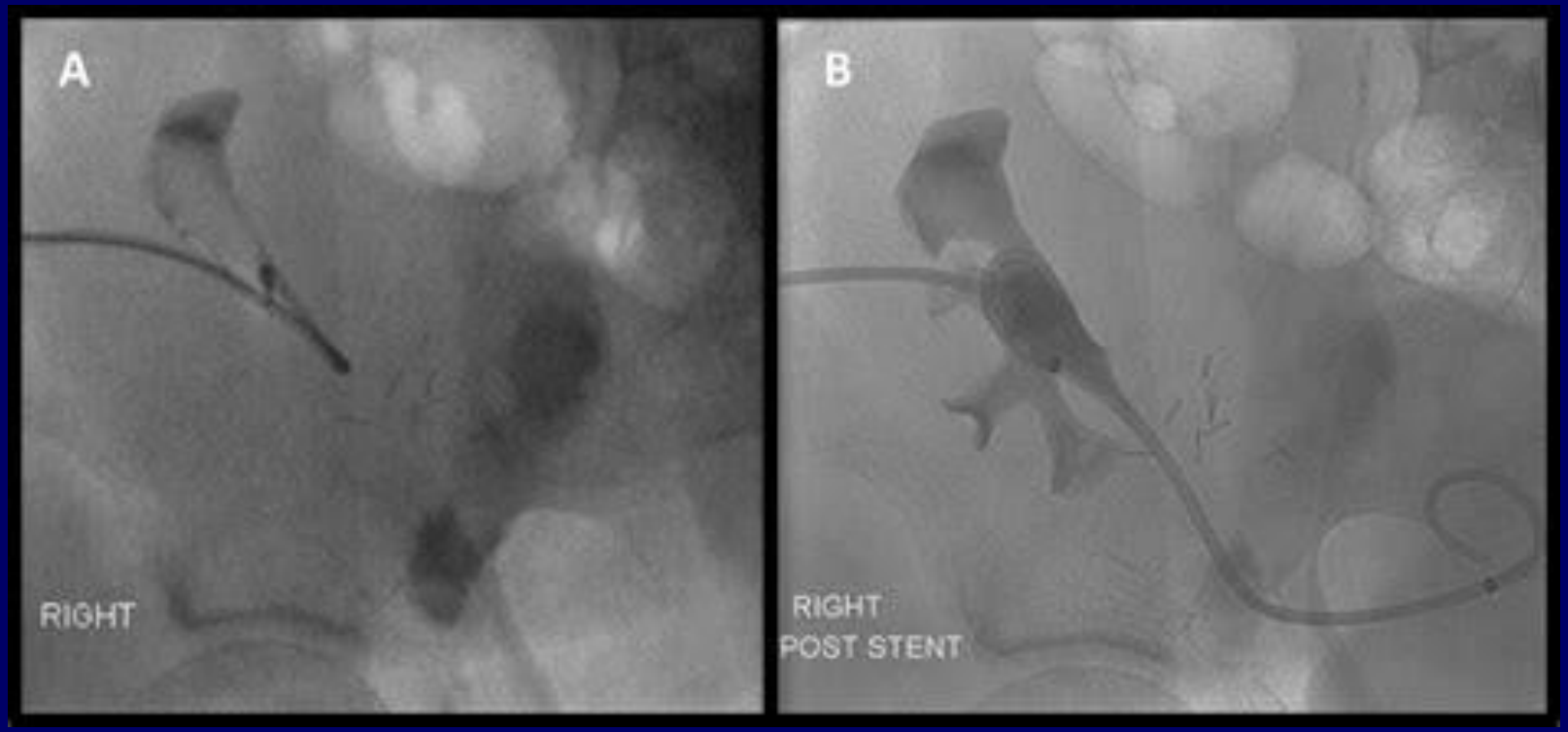

Abdominal aorta
Right renal artery
Left renal artery
Left kidney
Right kidney
First constriction
—ureteropelvic junction
Testicular arteries
Ureter
Ureter
Common iliac artery
Second constriction
—pelvic inlet
Internal iliac artery
External iliac artery
Third constriction
—entrance to bladder
Bladder

Management of ureteric obstruction

- Confirm diagnosis
- Relieve obstruction
- Identify the level of obstruction
- Consider if the obstruction can be removed (surgically or radiologically)

Management of ureteric obstruction



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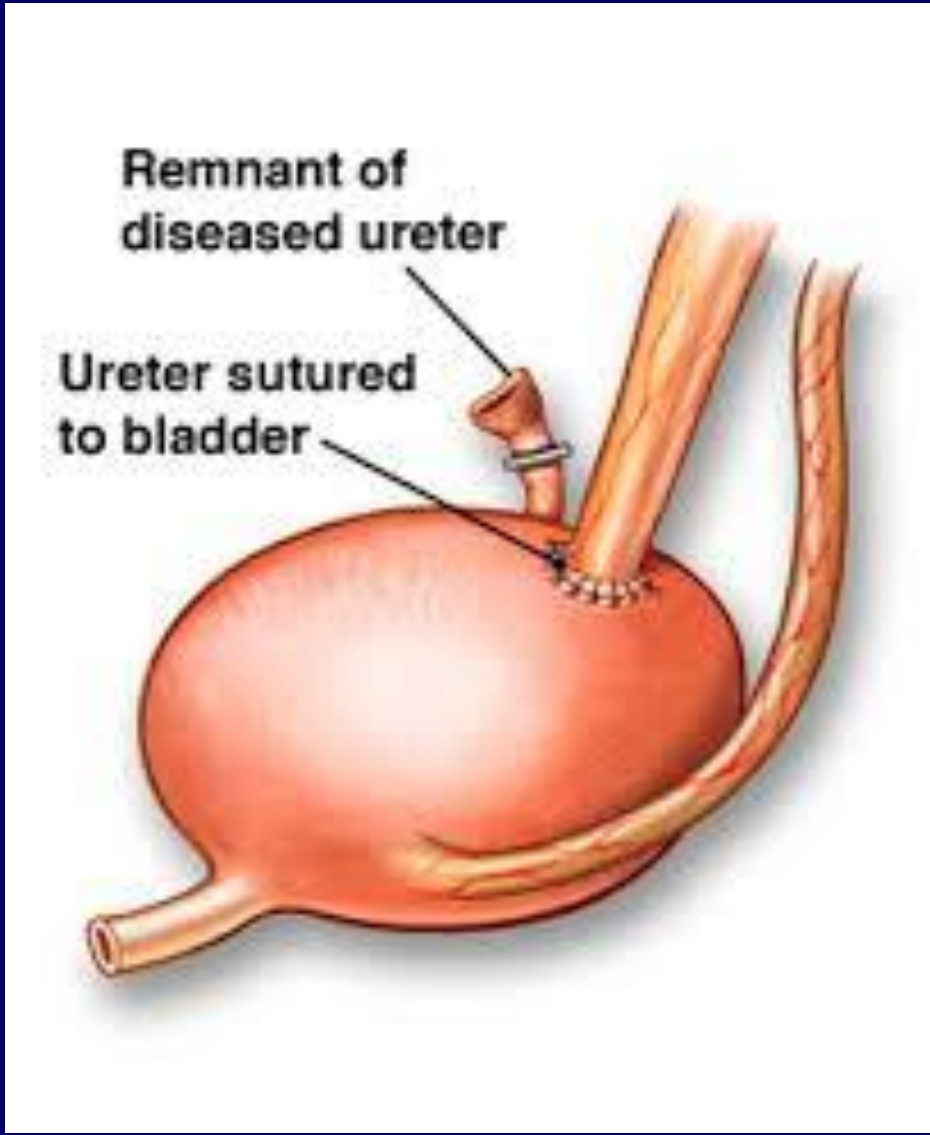

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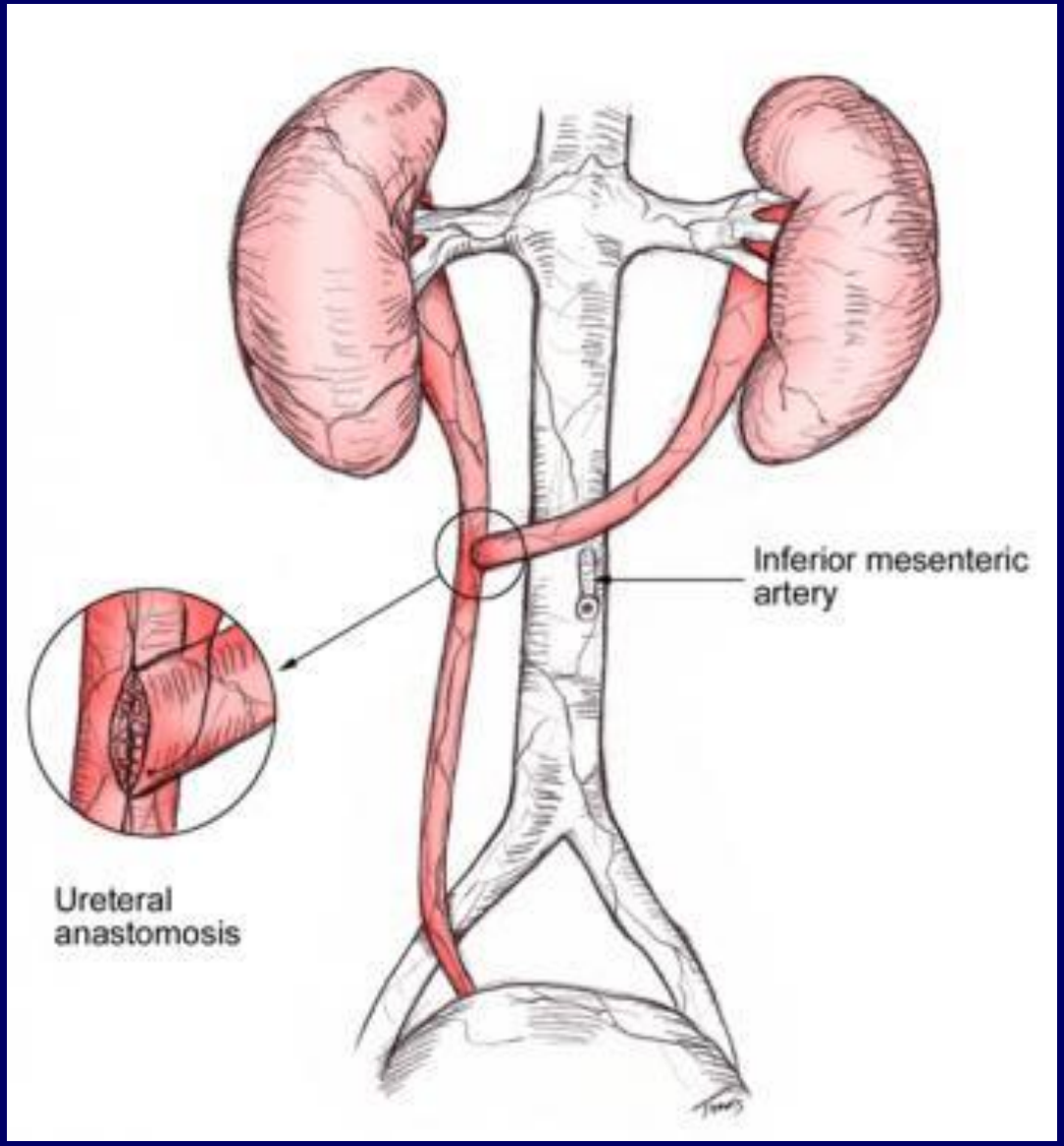

Summary

- Surgical complications after renal transplantation are not uncommon
- Type and urgency of management depend on chronological proximity to original transplant
- Broadly urological or vascular
- Treatment options tend to be surgical or radiological

Any Questions?

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