

What to do with living donor graft lithiasis?

Fossion L.M.C.L., Knipscheer B.C., Dooper Ph.M.M., Debruyne F. UMC St Radboud, Department of Urology Nijmegen, The Netherlands

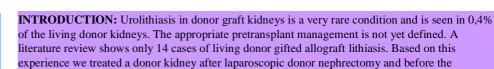
Predisposing conditions / multifactorial aetiology:

- Hereditary tubular resorption disorders(cystine).
- Dietary: purine intake(**ð** uric acid stones).
- Drugs: steroids or antacids, Vit C, sulfonamides, triamterene, indinavir,...
- Immobility and obesity.
- Hyperoxaluria < ileal hyperabsorption(jejunoileal bypass, pancreatitis, enteritis, M. Crohn), hyperoxalose and pyridoxine deficiency.
- Preexisting stones.
- Anatomic abnormalities:
- Ureteral obstruction. UPJ stenosis.
- Sponge kidneys.

•Vesicoureteral reflux.

- Recurrent UTI. Urea splitting organisms increaes the urinary pH.
- Metabolic abnormalities:
- Hypercalcemia < hyperparathyroidism, metastasis, M. Paget, sarcoidosis, renal tubular and chronic acidosis...
- Crystalluria. Uricosuria and gout (**ð** uric acid stones).
- Hypocitraturia & hypophosphataemia.
- Hypovolaemia / dehydration.
- Foreign bodies: ureteral stents. Nephrostomy tubes and nonresorble suture material.





transplantation with an ex-vivo ureterorenoscopy. **PATIENTS AND METHODS:** A 49 year old male presented as a donor. In the preoperative medical history one risk factor for calculus formation was found: obesity with a BMI of 31.1. An abdominal CT was routinely made and showed 2 asymptomatic calculi in the right kidney: one upper pole calculus of 5 mm and another of 6 mm in the lower pole. The metabolic screening showed an increased calcium and urate urinary excretion.

We performed a laparoscopic living donor nephrectomy of the right kidney to preserve the donors best kidney, because it is recommended to preserve the best kidney in the donor in case of abnormalities. During the Bench procedure an ex vivo ureterorenoscopy was performed with a 5 French semi-rigid scope. The access to the renal collecting system was easy and both stones were visualized.

RESULTS: The extraction of 2 stones was successfully and the procedure lasted only 5 minutes. An ex-vivo ureterorenoscopy offers an excellent visibility and the mobility of the ureter ex vivo simplifies this minimal invasive procedure. There were no complications per- and post-operatively. **CONCLUSION:** Preoperative imaging to visualize the vascular anatomy of the donor kidney on computer tomography is also useful in diagnosing urolithiasis. Ex vivo stone extraction during the Bench procedure for kidney transplantation is a successful method to treat urolithiasis in living donor kidney. It can prevent postoperative acute renal failure due to obstructive lithiasis, often presenting without specific symptoms.

It is important to inform the recipient that she should be aware of the possibility of recurrence of lithiasis. These patients should be followed with yearly imaging.





- or stone uiseast
- failure in a renal transplant recipient.
- Hydronephrosis-associated renal deterioration < obstructive uropathy
- Febrile urinary tract infection.
- Unexplained fever.
- Macroscopic hematuria
- Ureteral stricture.
- Asymptomatic stone discovery by abdominal US in 0,37 0,64%.
- Typical renal colic does not occur in NTx recipients because the ureter has been

Publication	Nr of patients	Cadaveric donor kidney	Living donor kidney	Location	Nr of stones	Treatment
Lerut et al, 1979	1	1		-	-	-
Donnelly et al, 1984	1	1		-	-	-
Van Gansbeke <i>et al</i> , 1985	2	2		1 Renal 1 Ureteral	2	-
Bhadauria et al, 1995	2		2		-	2 x ESWL post-Tx
Lu <i>et al</i> , 2002	3	3		1 UPJ stone of 2,5 mm 1 lower caliceal stone of 9 mm 1 obstructing ureteral stone	3	3 x Anterograde PNL post-T
Capocasale et al, 2002	4	3	1	4 Caliceal 3-4 mm 1 Ureteral 15 mm	5	Spontaneous passage Ureterotomy
Gomez et al, 2003	1	1			-	ESWL post-Tx
Qazi <i>et al</i> , 2003	2	2		1 Poximal ureter 5 mm acute postop. Tx failure 1 ureter acute postop. Tx failure	2	URS + Basket Sontaneous passage
Rashid et al, 2004	10		10	Renal pelvis	9	ExURS during Bench
Knipscheer et al, 2004	1		1	2 Caliceal 4-5 mm	2	ExURS during Bench
TOTAL	27	13	14		1	

Nijmegen, The Netherlands