

Ureteral Stenosis after Renal Transplantation in a patient with Enlargement Enterocystoplasty and Mitrofanoff for a Neurologic Bladder

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ABSTRACT

Ureteral strictures are common complications after renal transplantation. We report a case of ureteral stenosis in a patient who has been transplanted for 8 years with an enlargement enterocystoplasty and mitrofanoff for a neurological bladder under intermittent self-catheterization .

KEYWORDS: Ureteral stenosis, enterocystoplasty, transplantation, neurologic, bladder.

1. INTRODUCTION

Renal transplantation is nowadays considered as the treatment of choice for end-stage renal disease despite its medical and surgical complications. Ureteral stenosis, the incidence of which is between 2.6 and 15% depending on the series (1), is the most frequent of these urological complications. They are of more or less late and painless revelation and are diagnosed in front of an elevation of the creatinine associated with a pyelo-caliceal dilatation. The treatment of these stenoses has changed considerably with the progress of endo-urology and most patients are treated by endo-urological procedures as an initial approach (2)

Observation

This is the case of a young 24 year old patient who has received a renal transplant with uretero-ureteral anastomosis for 8 years from a related living donor who is her mother. She has been followed since birth for a neurological bladder revealed by repeated urinary tract infections and had an enlargement enterocystoplasty and a continuous urinary diversion type mitrofanoff 2 months before the renal transplant. She was admitted to the nephrology department for an infectious syndrome with a urinary origin treated with antibiotics and then she presented an acute obstructive renal failure with a creatinine of 31 mg/l vs 14 mg/l during a check-up done 2 months before for chronic diarrhea. Ultrasound showed a pyelo-calicular dilatation of the graft (figure 1) completed by an MRI showing a pyelo-calicular dilatation on probable stenosis of the anastomosis (figure 2).

The patient was initially endoscoped through the mitrofanoff (due to the unavailability of the operative report to know the status of the bladder neck) using the Hermann ureteroscope after dilation of the mitrofanoff with stylets. The two ureteral meats were seen and a hydrophilic guide was placed in the ureteral meatus to check the freedom of the bladder neck followed by cystoscopy and fitting of a single right ureteral catheter then fitting of a double J catheter (figure 3). The evolution was marked by a normalization of the renal function with a diuresis of 4 liters in the first days.

Discussion

Impaired renal function was historically the leading cause of death in patients with neurobladder. Although the management of these patients has been considerably improved by advances in functional rehabilitation and neuro-urology, renal failure remains a significant cause of morbidity in this population (3). An enlargement enterocystoplasty can be considered to protect the upper urinary tract and improve micturition comfort (4). Our patient benefited from a bladder enlargement and a mitrofanoff 2 months before the renal transplantation in order to allow her urinary continence while preserving the graft.

Ureteral stenosis is one of the most common and important urologic complications after KT, widely reported in the literature (5). Obstruction can be early but is rare, favored by anastomotic edema, torsion of the transplant ureter, technical error with an overly tight anastomosis, clotting of the excretory tract, or extrinsic compression by an abscess, a lymphocele, or a hematoma. Late ureteral stenosis is more frequent, affecting 2 to 7.5% of transplants, is of ischemic origin in the vast majority of cases and occurs in 70% of cases during the first 3 months.



Figure 1:ultrasound showing kidney dilation

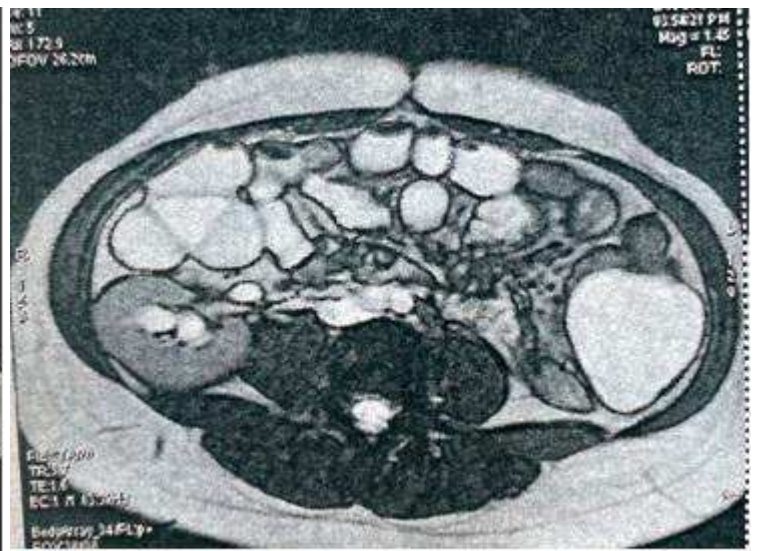


Figure 2: MRI showing ureteral and renal dilatation



Figure 3:no-preparation urinary tract after cathérisation

This risk of stenosis increases with time, from 2% in the first year to 9% at 10 years(6).After uretero-ureteral anastomosis, as in the case of our patient, the stenosis can be anastomotic, on a sub-pyelic ureteral siphon or on the recipient's native ureter. The sub-pyelic siphon is the conjunction of an excess of length of the ureter associated with a ptosis of the transplant in relation to its initial per-operative position(7).

During an immediate uretero-ureteral anastomosis, the technique must be rigorous and must be aimed at implanting the native ureter as high as possible on the transplant, at best on the pyelo (true pyeloureteral anastomosis).Uretero-ureteral anastomosis is easier to perform and can reduce the incidence of urine leakage after renal transplantation. It is a good first option with a higher success with a significant decrease in the number of postoperative urinary tract infections, an easier possibility of resolving ureteral stenosis by endourology without risk of bladder ureteral reflux. However, in the event of stenosis, it deprives the patient of a back-up solution because the native ureter is already used at the time of the graft (8) .

There are two distinct presentations: an acute form at the time of removal of the ureteral catheter, which involves acute renal failure, dilatation of the pyelocalic cavities and sometimes oliguria; and a progressive form, occurring months or even years after transplantation, which manifests itself by a more or less significant dilatation of the pyelocalic cavities associated with a progressive deterioration of the renal function (9).

Ultrasound of the transplant is always performed. The search for an obstruction on ultrasound can be potentiated by the injection of furosemide. The ultrasound will also look for the presence of a lymphocele or a compressive collection. Injected CT is rarely performed in the context of increased creatinemia because of the increased risk of renal toxicity and its lesser interest: its resolution is often insufficient to localize the site of the stricture and its extent. Uro-MRI and MAG III scintigraphy can be used in case of diagnostic doubt, but are not readily available in emergency (10).

In the case of proven stenosis, for which the clinician is convinced that it is responsible for a deterioration in function (dilatation does not always rhyme with obstruction), the choice between the various open surgical techniques and endoscopic or percutaneous techniques (endoscopic incision with electric current, balloon dilatation, shaping with a double J catheter) depended on the characteristics of the stenosis (location, length, time of onset in relation to the transplantation, completeness or not and therefore possibility of early positioning of a double J catheter) As a general rule, endo-urological treatment should be performed as a first line treatment in the presence of a distal stenosis, particularly located at the uretero-vesical implantation, early (< 3 months) and short (< 2 cm). In other situations or in case of failure of endoscopic or percutaneous techniques, an open surgical correction must be performed (11).

Our patient had a stenosis of less than one centimeter and was treated with a double J catheter.

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Citation: M. Graioud , A. Moataz , M. Dakir , A. Debbagh , R. Aboutaieb , “Ureteral Stenosis after Renal Transplantation in a patient with Enlargement Enterocystoplasty and Mitrofanoff for a Neurologic Bladder”. *American Research Journal of Urology*, Volume 5, Issue No. 1, 2021, pp. 1-3.

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