Ureterocystoplasty in a Girl with Bilateral Ureterovesical Junction Obstructions and Small Bladder Capacity: The First Case Report of Thailand

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ABSTRACT

Objective: Ureterocystoplasty is one of the treatment options for small bladder capacity with hydroureter. To the best of our knowledge, there was no report of a patient who underwent this procedure in Thailand.

Case presentation: A 4-year-old girl, who presented with obstructive anuria at birth was diagnosed with bilateral ureteropelvic junction obstruction and small bladder capacity. At the age of 2 years old, she underwent a teapot ureterocystoplasty with left to right transuretero-ureterostomy with right ureteral reimplantation. Postoperative complication was observed. The bladder capacity was evaluated and kidney ultrasonography was done during the follow up. There was no complication during the perioperative period. The bladder capacity was increased from 25 ml to 240 mL in 2 years postoperatively. Both kidneys also showed the decrease in degree of hydronephrosis.

Conclusion: Ureterocystoplasty is a favorable treatment option for the patients with small bladder capacity and marked hydroureter. The procedure itself is not difficult to perform. Moreover, there are no mucous related complications and metabolic disturbances.

Keywords: Ureterocystoplasty; ureter; bladder augmentation (Siriraj Med J 2018;70: 355-356)

INTRODUCTION

Bladder augmentation is a treatment option in management of neuropathic bladder and small bladder capacity from other causes, especially in congenital anomalies, for upper urinary tract preservation. Although many types of tissues can be used for augmentation, enterocystoplasty is still popular despite complications of metabolic disorders[1] and mucus production. Ureteral bladder augmentation is another favorable option due to its advantages of no mucus and metabolic abnormalities.[2]

CASE PRESENTATION

A 4 year old girl was born at a gestational age of 33 weeks from a Caesarean section performed for oligohydramnios and placenta previa totalis. On the first day, she had anuria and ultrasonography revealed bilateral hydroureteronephrosis due to bilateral ureterovesical junction obstruction shown in Fig 1. Percutaneous nephrostomy was performed, sparing both the dilated ureters for further reconstruction. Intraoperatively, extremely small bladder was noticed.

At the age of 2 years, her serum creatinine was 0.6 mg/dl and bladder capacity was 25 ml. MR urography (MRU) was performed to evaluate both ureters for technical selection such as using one or both ureters, using distal ureter or entire ureter. MRU also reported multiple cystic changes of renal parenchyma in both kidneys as shown in Fig 2. Teapot ureterocystoplasty

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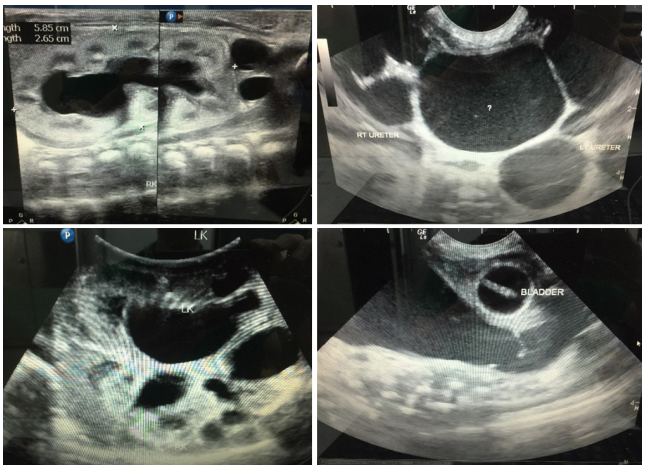

Fig 1. Ultrasonography 1 day after birth revealed bilateral UVJO.

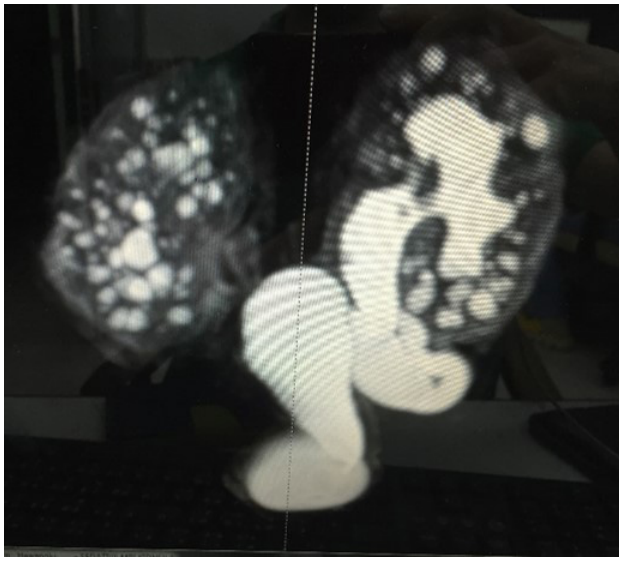

Fig 2. MRU revealed dilated ureters especially distal parts.

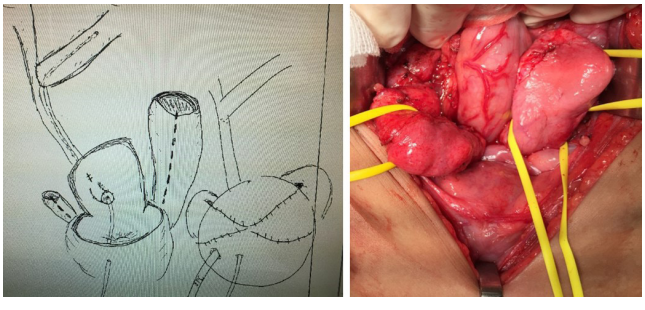

Fig 3. Ureteral bladder augmentation using both dilated distal ureters and transureteroureterostomy

was performed using both the dilated distal ureters as shown in Fig 3. Bladder was opened in coronal plane from the left to the right ureteric orifices and extended to detubularized both distal ureters, then both distal ureters were used as augmented tissue. Proximally, left to right transuretero - ureterostomy was done. Intraoperative bladder capacity after augmentation was increased to 70 ml. The postoperative period was uneventful and the patient was under regular follow up.

At 1 year follow up, she had spontaneous void of about 100 ml and on clean intermittent catheterization, she has residual urine of 140 ml. Her latest serum creatinine is 0.65 mg/dl. Follow-up ultrasonography has revealed decreased bilateral hydronephrosis.

DISCUSSION

Ureter is one of the best augmentation tissues for the bladder because it provides similar urothelial mucosa and muscular layer to bladder. There are no mucus related problems and metabolic complications. Some authors[2] have concluded that ureter can be used to improved storage function to the same extent as ileum. The improved bladder capacity after ureterocystoplasty can be more than two times.[3] There are different amounts of ureteral tissue available in each patient and that might be the only limitation for this procedure in non-dilated or small caliber ureter. The critical points of this procedure are case selection, the techniques that can be devised to obtain maximum amount of ureter and overall renal function.

The degree of dilatation of ureter and its extent should be evaluated preoperatively for reconstructive plan. Some authors[4], argue that there is no significant difference in bladder capacity when one or both ureters are used.

In the present case, we were successful in preserving both her kidneys and distal ends of both ureters were used for augmentation while proximally, left to right transureteroureterostomy was performed. The results were good, with improvement of hydronephrosis bilaterally as well as improvement in bladder capacity.

CONCLUSION

Ureteral bladder augmentation is a good alternative for improving storage function of small and poor compliant bladder compared to enterocystoplasty. For excellent outcome, this operation should be used in specific group of patients.

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