

LONG-TERM OUTCOMES OF PROTECTION FOR UPPER URINARY TRACT FUNCTION BY AUGMENTATION ENTEROCYSTOPLASTY IN PATIENTS WITH NEUROGENIC BLADDER

Hypothesis / aims of study

To evaluate the long-term outcomes of protection for upper urinary tract (UUT) function by augmentation enterocystoplasty (AE) using a grading system for upper urinary tract dilation (UUTD) and a descriptive system for all urinary tract dysfunction (AUTD) in patients with neurogenic bladder.

Study design, materials and methods

We retrospectively reviewed 120 cases of AE from our database, which was collected between 2005 and 2013. UUTD system was developed by magnetic resonance urography (MRU), and AUTD system was described by video-urodynamics, MRU, isotope renography, et al. UUT function was evaluated by these systems before operation, and at 6, 12, 24 and 36 months post-operatively. The indication, long-term outcomes and complications were evaluated.

Results

All patients had significant improvement for urodynamic parameters at 6 months post-operatively. Comparing the grades of UUTD and vesicoureteral reflux (VUR) before and after operation, the median grade of 95 UUTD ureters decreased from 3 to 0, and the percentage of 0 grade UUTD increased from 0 to 90.9% at 36 months. The median grade of 96 VUR ureters decreased from 3 to 0, and the percentage of 0 grade VUR increased from 0 to 98.6% at 36 months. The glomerular filtration rate (GRF) of kidneys and serum creatinine level of patients underwent the increasing improvement after surgery. At the follow-up examination 6 months post-operatively, patients were treated with CSIC at a frequency of 4.1 ± 0.9 times per day, with mean drainage volumes of 467.8 ± 91.2 ml. Daily incontinence episodes decreased from 5.8 ± 3.2 to 1.3 ± 1.2 . PPBC scales decreased from 4.1 ± 0.5 to 1.1 ± 0.6 .

Interpretation of results

The present study showed that AE with concomitant URI decreased the MDP, increased the MCC and BC, decreased the VUR and UUTD grades, and prevented deterioration of UUT with satisfactory patient-reported outcomes during a 36-month follow-up, suggesting that AE has the good long-term outcomes in treating patients with NBD. Ninety-five ureters with UUTD, 96 ureters with VUR and 61 patients with chronic renal failure underwent a long-term continued post-operative improvement. The current results indicate that the UUTD and AUTD systems can effectively assess changes in UUTD grades and renal function, and are effective tools for assessing UUT function and evaluating the outcome of AE. The majority of the patients underwent an increasing improvement for the UUT and renal function after AE, only 2 patients did not at the 36-month follow-up visits. During the initial 6-month follow-up, we encountered some ureters with persistent or recurrent VUR after re-implantation of the refluxing ureter. The recurrent VUR was successfully cured by anti-cholinergic therapy with only one VUR noted at the 36-month follow-up.

Concluding message

The current study suggests that the new UUTD and AUTD systems are effective in assessing UUT structure and function and the changes in NBD patients. The follow-up using these systems indicates that AE with URI is effective and safe for the UUT protection in NBD patients. This study demonstrates that the patients with moderate and severe UUT deteriorations and renal function impairment resulting from VUR and UUTD have undergone the increasing improvement with long-term follow up.

References

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Disclosures

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