

LONG-TERM RESULTS OF AUGMENTATION ENTEROCYSTOPLASTY IN PATIENTS WITH A LOW COMPLIANT BLADDER

Hypothesis / aims of study

To assess clinical and video-urodynamic (VUD) outcomes of augmentation enterocystoplasty in patients with a noncompliant bladder who failed to respond to conservative treatment.

Study design, materials and methods

Between January 2008 and July 2011, a total of 39 patients, at a mean age of 36.3 years (range 5 to 68), 26 males and 13 females respectively, with a hypocompliant, neurogenic voiding dysfunction associated with or without vesicoureteral reflux (VUR) confirmed by video-urodynamic testing preoperatively. They all had never undergone bladder augmentation with a generous detubularized segment of bowel (sigmoid or ileum) at our institution. No effort had been made to correct existing reflux, incontinence or hydronephrosis in these patients. Of the 22 patients, 15 males (2 paraplegics) and 7 females respectively, at an average age of 30.1 years (range 12 to 58) were reviewed retrospectively in this study. Others because of various objective reasons failed to follow-up. 10 of 22 were detected VUR before surgery, including low grade reflux (grades I to III) in 2 ureters (2 patients) and high grade reflux (grades IV to V) in 10 (8). Clinical outcomes regarding sonography of the upper and lower urinary tract, evaluation of renal function, urine examination, incontinence, medications, catheterization schedule, subsequent interventions, bowel function and patient satisfaction were addressed via a standardized questionnaire administered by us. Video-urodynamic evaluation was performed to assess the long-term durability of bladder augmentation and the status of VUR.

Results

Mean follow-up was 21.2 months (range 6 to 46). The VUDs manifested a significant improvement of bladder capacity, diminution of intravesical pressure and resolution of VUR after augmentation enterocystoplasty. Mean total bladder capacity increased from 161.1 ± 101.9 to 457.5 ± 37.3 ml ($p < 0.001$) and mean maximal end filling pressure decreased from 61.4 ± 28.2 to 14.5 ± 4.3 cm H₂O ($p < 0.001$). Of the 10 ureters with high grade reflux, reflux resolved in 8, downgraded in 1 and persisted in 1. Of the 2 ureters with low grade reflux, reflux completely disappeared. All but 3 patient (13.6%) in our series had complete continence, 2 had mild and 1 had moderate incontinence. 20 were managed with clean intermittent catheterization (CIC), with a mean interval of 3-5 hours between catheterizations. Two vigorous male patients micturated with abdominal straining after surgery. Only 1 patient (4.5%) needed a low dose of pharmacotherapy (Solifenacin) postoperatively to maintain continence. Two urinary tract infections developed in these patients. All patients reported no significant change in bowel function and nearly expressed extreme satisfaction with urological management. In addition, 13 patients (59.1%) reported being less constipated after augmentation sigmoidcystoplasty.

Interpretation of results

Augmentation enterocystoplasty is an appropriate intervention for patients with refractory noncompliant neurogenic voiding dysfunction to conservative medical therapies. As video-urodynamic (VUD) studies are used to assess the long-term durability of bladder augmentation direct-viewingly to provide low pressure, high capacity urinary storage and condition of VUR, they also might be used to evaluate and follow the effect of treatment subsequently. Indeed, most reported therapies are based on both symptomatic and urodynamic follow-up. From the results of our research, VUD is the gold standard for evaluating the efficacy and accuracy prospectively for long-term follow-up of patients with a low compliant neurogenic bladder.

Concluding message

Bladder augmentation is a kind of well-established alternative for patients with high pressure neurogenic bladder who failed to medical treatment. Our data confirm that video-urodynamic benefits are maintained with long-term follow up. In addition, our experience indicates that antireflux procedures are not routinely needed in patients with a noncompliant, high pressure bladder who undergo augmentation cystoplasty.

References

1. Long-term urodynamics followup of bladder augmentation for neurogenic bladder
2. Long-term results of augmentation cystoplasty in spinal cord injury patients
3. Clinical usefulness of urodynamic assessment for maintenance of bladder function in patients with spinal cord injury

Disclosures

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