

Oral presentation

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Auto-augmentation: ought it to be done?

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Background

Neuropathic bladder secondary to spina bifida may result in serious kidney damage and socially-disabling urinary incontinence. Failure to respond to clean intermittent catheterisation and anti-cholinergic medication may necessitate bladder augmentation, a major operation with significant risks, including the possibility of malignant transformation of the augment.

The development of auto-augmentation (detrusorotomy or detrusorectomy) as an alternative procedure, where the hypertrophic detrusor muscle is split and separated from the intact mucosa of the bladder, promised avoidance of many of the consequences of traditional augmentation. However, the literature remains unclear as to whether auto-augmentation is effective in such patients, or a sub-group thereof, or has a role in delaying the need for a more complicated procedure until later in life, when the potential for stunting of growth may be less important.

Materials and methods

The records of all children undergoing auto-augmentation from 1996 to 2006 in a regional specialist paediatric surgical unit were analysed. Comparisons were made between the pre- and post-operative status for the following end-points: continence, nephropathy, and video-urodynamic parameters (bladder capacity, maximal detrusor pressure [MDP], and vesico-ureteric reflux [VUR]).

Results

Comparative data were available for six girls and five boys aged between 5 and 14 (mean = 10.3) years at the time of detrusorotomy, in two cases accompanied by colposuspension.

Follow-up period was between 1.3 and 6.8 (mean = 3.5) years post-operatively. Spina bifida was the underlying condition in all but one of the children, all of whom had small, poorly compliant bladders with upper tract deterioration and/or failed maximal medical therapy.

Five of the 11 patients had an increase in bladder capacity (mean increase = 40%), as a function of the predicted capacity for age. Three had an improvement in MDP (13 – 69% reduction). Two of the three patients with pre-operative VUR had resolution following surgery. None of the four patients with no pre-operative VUR developed it post-operatively. Four were unable to be assessed due to incomplete urodynamic data.

There was no deterioration on DMSA or renal ultrasound scan in 10 patients. One patient suffered progressive renal scarring between the two DMSA scans, but there were 20 months between the pre-operative DMSA and surgery, during which time this scarring may have occurred. Five patients had a subjective improvement in continence. To our knowledge, no patient has had further surgery to date.

Conclusion

Our study suggests that auto-augmentation was beneficial in terms of improved urodynamic parameters in five out of eleven children, in the medium term at least, and does not cause deterioration in VUR. However, pre- and intra-operative predictors of success remain elusive. We suggest the continued inclusion of auto-augmentation in the surgical armamentarium for neuropathic bladder, but continued follow-up is required post-operatively