

## THE USE OF PERMANENT STENTS IN SPINAL CORD INJURY PATIENTS WITH DETRUSOR SPHINCTER DYSSYNERGIA—A 10 YEAR FOLLOW-UP

### Aims of Study

To assess the long-term effectiveness of Wallstent™ (Urolume, Pfizer Inc.) in the treatment of detrusor sphincter dyssynergia (DSD) in quadriplegic patients.

### Methods

12 patients with quadriplegia secondary to spinal trauma underwent external striated sphincter stenting with the Wallstent™ in place of an external sphincter sphinterotomy for detrusor sphincter dyssynergia. The mean age was 42.5 years. (range 31-65 years) The level of injury was C4 in 2 patients, C5 in 4 patients, C6 in 3 patients, C7 in 1 and T6 in 1 patient. All patients were shown to have high pressure hyper-reflexic bladders with incomplete emptying on pre-operative video-urodynamics (VCMG). The stent was 3 cms. in length in 6 patients. In the remaining 3 patients two or more stents were overlapped from bladder to the bulbar urethra to achieve complete incontinence. All underwent regular VCMG's on a yearly basis. One patient died due to a co-morbid condition with a functioning stent and 1 patient has been lost to follow-up a year after stent insertion. The remaining 10 patients have been followed up for a mean of 10 years.

### Results

Improved bladder emptying with reduced voiding pressures was achieved together with a significant reduction in the duration of hyper-reflexic contractions. (table 1)

| Mean Values                             | Before stenting | After stenting (most recent VCMG) |
|---|-----------------|-----------------------------------|
| Detrusor Pressure (cm H <sub>2</sub> O) | 94              | 72                                |
| Duration of contraction (secs.)         | 130             | 40                                |
| Post micturition residue (vol.)         | 268             | 110                               |

It became necessary in 2 patients to remove the stents due to encrustation and stone formation leading to obstruction. Both were removed within a year of insertion. It is to be noted that the removal of stents was quite difficult and it was not possible to remove them in one piece. 1 stent became obstructed due to excessive intraurethral epithelial growth (7 years post insertion.) This patient is being managed with a long-term suprapubic catheter. The stents continue to function adequately in the remaining 7 patients, however 5 of these patients developed bladder neck dyssynergia of varying degree as demonstrated on video-urodynamics. Most of these were successfully treated with bladder neck incision. The majority of the complications occurred in the first 5 years after stenting. We did not encounter any problem with stent migration.

### Conclusions

In conclusion the Wallstent™ provides a safe and effective method of treating high pressure hyper-reflexia and detrusor sphincter dyssynergia in quadriplegic patients. It is an effective alternative to external sphincterotomy. However bladder neck dyssynergia after stent insertion may be a problem. This can be avoided by incising the bladder neck at the original operation or stenting across both the external sphincter and bladder neck (1). However this can interfere with fertility and we therefore prefer to stent across the external sphincter only. More importantly if it becomes imperative to remove the stent, it can be quite a challenge (2). In our experience if the stent functions satisfactorily in the initial 5 years the chances are that it will not cause major problems in the longer term.

### References

- 1- Soni BM, Vaidyanatham S, Krishnan KR: Use of Memokath, a second generation urethral stent for relief of urinary retention in male spinal cord injured patients. *Paraplegia*. 1994 Jul;32(7):480-8.
- 2- McFarlane JP, Foley SJ, Shah PJR: Long term outcome of permanent urethral stents in the treatment of detrusor-sphincter dyssynergia. *British Journal of Urology*. (1996).78,729-732