

THE USE OF THE MEMOKATH™ STENT IN THE TREATMENT OF DETRUSOR SPHINCTER DYSSYNERGIA IN SPINAL CORD INJURY PATIENTS- A 7 YEARS REVIEW

Aims of Study

To evaluate the efficacy of the Memokath™ stent (Engineers & Doctors A/S Denmark) in the treatment of detrusor sphincter dyssynergia in spinal cord injury patients at our institution over the last 7 years.

Methods

We identified 23 patients who had Memokath™ stent inserted for the treatment of detrusor sphincter dyssynergia, associated with high detrusor pressure and residual volumes. The mean age was 45.5 years.(range 32-65 years) The level of injury is thoracic in 11 patients and cervical in 12 patients.18 patients were reflex voiding with condom drainage system, 2 were performing intermittent catheterization, 1 had suprapubic catheter. 2 patients employed a sacral root stimulator for bladder emptying. Pre-operatively all patients were evaluated for potential complications related to bladder management i.e urinary tract infections, autonomic dysreflexia or stone formation. Patients were objectively assessed with videocystometrogram and a renal ultrasound scan documented the state of the upper tracts.

After a preliminary cystourethroscopy the distance between the bladder neck and the verumontanum was calculated with the aid of two clips on the rigid cystoscope. A stent 10mm longer than the measured length was chosen for deployment. 0° scope was used for the procedure. When the stent was in satisfactory position 100-150 mls. of normal saline at 45° was instilled resulting in the expansion of the stent with the distil end in the proximal urethra. The length of the stents used was 40mm in 3, 50mm in 8, 60mm in 6 and 70mm in 6 patients. The initial 3 stents (40mm) were placed across external sphincter only but subsequently we try to place the stents across both the external sphincter and the bladder neck to avoid bladder neck dyssynergia.

The patients were reviewed a month after the procedure and then as required. On the first follow-up visit an ultrasound scan was performed to assess the position of the stent and to measure residual volumes. Videourodynamics were performed in all cases, the majority having it with in six months of the procedure.

The stent removal if necessary was easily performed with cold saline at 5-10° in a nontraumatic fashion with a biopsy forceps in one piece.

Results

All procedures were completed successfully. No intra or immediate post operative complication i.e bleeding or autonomic dysreflexia were noted.

There was initial reduction in the residual volume of urine (mean decrease from 350 mls. to 100 mls.) with decrease in autonomic dysreflexic like symptoms i.e headaches, sweating and hypertension during voiding in all but 2 patients. Both these patients had their stents removed with in 3 weeks of insertion as they did not like being wet at all time. (Although they were informed of this eventuality) Interestingly both of them had a sacral root stimulator inserted for bladder drainage.

The result of videourodynamics studies with in a year are summarised below. (table 1)

Urodynamic variable	Before Stenting (mean)	After Stenting (mean)
Maximal Detrusor Pressure (cm H2O)	94.0	65.0
Residual Volume (mls.)	350.0	151.0
Voided Volume (mls.)	125.0	155.0

We had six cases of distil stent migration, five of these had previously undergone either external sphincterotomy or failed Wallstent™ placement. They all had repositioning of stent performed but it failed again in four patients.

Currently we have 6/23 patients with stents in situ that are working satisfactorily. All but one have been inserted with in the last 2 years. 2 stents were removed which were working well but one patient wanted to perform intermittent catheterization and the other wished to go on a fertility program. The rest 15/23 had been removed due to migration, encrustation or incomplete emptying resulting in autonomic dysreflexic symptoms. All necessitated removal with in 3 years (11/15 between 2-3 years.) of insertion.

Conclusions

We conclude that Memokath stent are safe, easy and quick to insert with minimal of trauma to the urethra. They are effective in decreasing the detrusor pressure and residual volume at least in the short term. Moreover the ease of their removal in a nontraumatic fashion make them an attractive option when the patient is still contemplating the method of bladder management to employ (1).

However they can lead to autonomic dysreflexic symptoms even when draining satisfactorily and there are problems with encrustation's leading to urinary tract infections, stone formation and incomplete emptying leading to their removal (2). This usually occurs after 2 years have elapsed.

A close follow-up is required to diagnose and treat potential complications.

References

- 1- Shah NC, Foley SJ, Edhem I, Shah PJ. Use of Memokath temporary urethral stent in treatment of detrusor-sphincter dyssynergia. J Endourol. 1997 Dec;11(6):485-8.
- 2- Low AI, McRae PJ. Use of the Memokath for detrusor-sphincter dyssynergia after spinal cord injury--a cautionary tale. Spinal Cord. 1998 Jan;36(1):39-44.