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LONG-TERM OUTCOMES OF PERMANENT NITINOL URETHRAL STENT MEMOTHERM® IMPLANTATION IN NEUROLOGICAL PATIENTS WITH DETRUSOR-STRIATED SPHINCTER DYSSYNERGIA

Hypothesis / aims of study
The permanent nitinol urethral sent Memothem® (Bard Corp., Covington, GA, USA) has been used in the treatment of detrusor striated-sphincter dyssynergia (DSSD) in neurological patients. Our objective was to report the outcomes and complications of the Memotherm® stent implanted in neurological patients with DSSD.

Study design, materials and methods
All consecutive neurological patients who had a DSSD treated by Memotherm® between November 2005 and November 2011 were included in a retrospective monocentric study. The following data were collected: demographics, neurological disease, voiding mode, urodynamic parameters, post-void residual volume, and early and late complications.

Results
Overall, 108 patients were included, median age 50.4 years (IQR 35.1-64.5). Among them, 74 (68.5%) had a spinal cord injury (65 tetraplegic, 9 paraplegic) and 21 (19.4%) multiple sclerosis. The Memotherm® stent was placed under local anesthesia (except for 1 patient). The length of the stents was 30mm (n=3, 2.8%), 40mm (n=7, 6.5%) and 50mm (n=98, 90.7%). The median follow-up was 48.3 months (IQR 19.4-67.8). Early postoperative complications occurred in 6 (5.6%) patients (figure 1). 93.5% of stents had an epithelial coverage > 75% at the end of follow-up. DSSD, post-void residual volume and renal function were significantly improved (figure 1). The revision and explantation rates were 25.0% (n=27/108) and 15.7% (n=17/108) respectively (figure 2). The median time till explantation was 15.0 months (IQR 2.8 -41.8).

Interpretation of results
Several articles have been reported with the results of urethral prostheses in this type of patients, although in most cases patients were not monitored in the long term and the number of subjects was lower [1-3].We found that Memotherm® stent was efficient for treating DSSD in neurological patients The overall late complication rate (explantation and revision) is 40.7% requiring an additional endoscopic procedure. Patients treated with permanent uretral stent require a yearly endoscopic follow-up.

Concluding message
Memotherm® stent is efficient for treating DSSD in neurological patients. Complications exist and required either explantation or revision of the stent. However, the stent has been removed from the market upon the company's decision in some countries, leaving patients without any other prosthetic option except surgical sphincterotomy. The future potential stents may meet at least the same efficacy, with fewer complications.

Table 1. Early postoperative complications and functional outcomes after Memotherm® stent placement

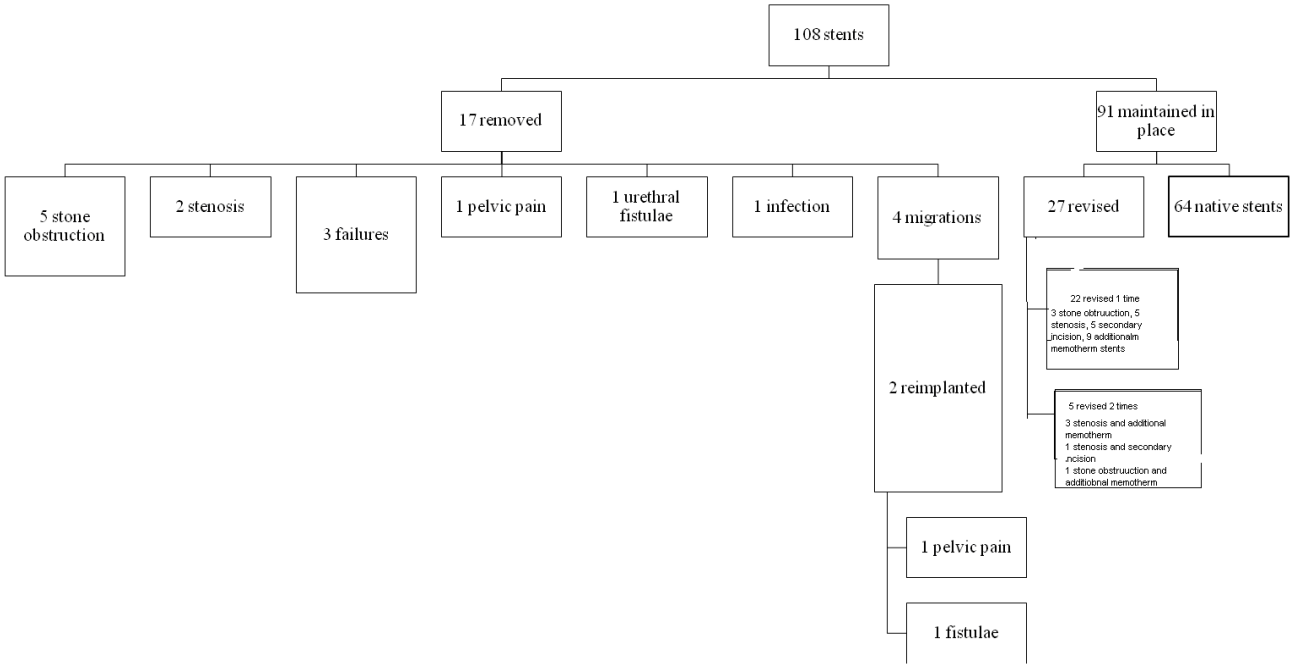
1a. Early postoperative complications

Clavien grade	Description of complication	N=	Management
IIb	Acute urinary retention	4	Supra-pubic catheter placement
	Persistent hematuria	1	Supra-pubic catheter placement
III	Migration of the stent into the bladder	1	Immediate replacement of the stent

1b. Functional outcomes

Parameters	Preoperative	Post operative	P value
Post-void residual urine (median, ml)	350.0 (IQR 75.0-500.0)	97.0 (IQR 50.0-150.0)	<0.05
Detrusor-striated sphincter dyssynergia	N=108/108 (100%)	N=7/108 (6.5%)	0.001
Voiding mode			
- Intermittent catheterization	24/108 (22.2%)	2/108 (1.9%)	0.001
- Indwelling catheter	24/108 (22.2%)	15/108 (13.9%)	ns
- Trigger reflex micturition	57/108 (52.8%)	84/108 (77.8%)	0.001
- Not specified	3/108 (2.8%)	0	0.001
- Ileal conduit	0	7/108 (6.4%)	0.001
Creatinine, micromole/L(median)	88.0 (IQR 74.0-96.0)	72.0 (IQR 70.0-80.0)	<0.05

Figure 2. Outcomes of the 108 Memotherm® stents



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Disclosures

Funding: no disclosures **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** the local ethics committee (Pitié Salpétrière academic Hospital) **Helsinki:** Yes **Informed Consent:** Yes