

HIGH LEVATOR MYORRAPHY TO CORRECT SUPERIOR VAGINAL SEGMENT PROLAPSE: A NEW PROPOSAL WITH A LONG-TERM FOLLOW-UP

Hypothesis / aims of study

The vaginal apex is a key factor in pelvic organ support and surgical correction of anterior and posterior vaginal wall defects is at risk if the apex is not adequately suspended. The aim of the study is to evaluate the outcome of the High Levator Myorrhaphy (HLM) procedure for the suspension of the vaginal vault, in terms of both anatomical correction and functional results, in particular the impact of this surgery on sexuality and on ano-rectal function.

Study design, materials and methods

Between June 1994 to July 2004, 316 female patients with Pelvic Organ Prolapse (POP) grade ≥ 2 were enrolled. The pre-operative work up included: history, clinical examination with vaginal profile using the Baden and Walker Halfway System, Q-Tip test for urethral hypermobility, conventional urodynamic studies and completion of questionnaires (King's Health Questionnaire[1], Wexner score[2] for anal incontinence and constipation, and a Sexuality score.

All the patients underwent the HLM procedure to suspend the posterior fornix or vaginal vault, with or without concomitant surgical procedures to correct other prolapsed vaginal segments and/or stress urinary incontinence (SUI). All the patients were evaluated 3 and 6 months after surgery. The results were analyzed using three statistical tests: T-test, McNemar Chi squared test and Wilcoxon test.

Results

The mean age was 62 years (range 39-82, SD 8.80), parity was 2 (range 0-10, SD 1.03); 266 patients (84.1%) were post-menopausal, 33 patients complained of a recurrent prolapse. Follow up ranged from 12 to 102 months (mean 78 months). Pre and post-op symptoms are reported in Table 1. In Table 2 the pre and post-op vaginal Profiles are reported.

Table 1 – Pre and post-op symptoms

	Pre-op # (%)	Post-op	P*
Increased Day time frequency	147 (46.52%)	71 (22.47%)	0.0005
Urgency	171 (54.11%)	111 (35.13%)	0.206
Urge Urinary Incontinence	139 (43.99%)	96 (30.38%)	0.0003
Nocturia	139 (43.99%)	109 (34.49%)	0.0002
Hesitancy	118 (37.34%)	16 (5.06%)	0.0001
Slow stream	119 (37.66%)	80 (25.32%)	0.0001
Felling of Incomplete emptying	136 (43.04%)	48 (15.19%)	0.0001
Perineal pain	18 (5.70%)	6 (1.90%)	0.0005
Pelvic pain	62 (20.57%)	24 (7.59%)	0.0003
Dyspareunia	65 (20.57%)	56 (17.72%)	0.004
Constipation	93 (29.43%)	59 (18.67%)	0.0008
Heaviness	184 (58.23%)	29 (9.18%)	0.0001

* McNemar Chi-square test

Table 2 – Pre and post-op vaginal profile according to HWS

	Pre-op # (%)	Post-op # (%)	P*
Urethrocele ≥ 2	187 (59.18%)	120 (37.97%)	0.0607
Cystocele ≥ 2	274 (86.71%)	86 (27.22%)	0.0003
Hysterocele or Cul de sac ≥ 2	158 (50%)	9 (2.85%)	0.0002
Douglas ≥ 2	35 (11.08%)	2 (0.63%)	0.0001
Rectocele ≥ 2	110 (34.81%)	11 (3.48%)	0.0002

* McNemar Chi-square test

Urodynamic data are reported in Table 3

Table 3 – Pre and post-op urodynamic data

	Pre-op	Post-op	P
First desire to void	17-707 ml (mean 166 ml SD 94.47)	34-689 (mean 176.88 SD 82.78)	0.111*
Maximum Bladder capacity	119-880 ml (mean 166.53 ml SD 103.53)	116-779 ml (mean 404.53ml SD 83.12)	0.353*

Detrusor overactivity	97 (30.70%)	53 (16.77%)	0.0005**
Pressure at Maximum flow	1-138 cm H2O (mean 31.32 cm H2O SD16.31)	4-80 mc H2O (mean 26.75 cm H2O SD 11.85)	0.002*
Maximum flow	2-42 ml/sec (mean 14 ml/sec SD 7.40)	1-39 ml/sec (mean 14.64 ml/sec SD 6.98)	0.252*

* T-test

** McNemar Chi-square test

Interpretation of results

The analysis of the results shows statistically significant differences in anatomical correction of POP, with positive impact on voiding and storage symptoms and on urodynamic data.

Quality of life was significantly improved according to the King's Health Questionnaire both globally (mean sum of all the domains) and in the specific areas of limitations of everyday activities, physical-social limitations, personal relationships and emotions (Wilcoxon test; $p < 0.05$). No statistically significant variations in sexuality (frequency of intercourse, libido, satisfaction during intercourse, dyspareunia) were observed. Regarding ano-rectal function, the Wexner score for incontinence was unaltered whereas the Wexner score for constipation was significantly reduced (Wilcoxon test; $p < 0.05$).

Concluding message

High Levator Myorrhaphy anchoring the vaginal vault to the pubo-rectal muscle and recreating the so called "Vaginal Levator Attachment" [3] demonstrates the following characteristics: no significant intra-or post-operative complications; statistically significant correction of the vaginal vault without any negative anatomical impact on the anterior segment; no variation in sexuality; positive impact on constipation and on the quality of life.

References

1. Int Urogynecol J (2005) 16: 176-181.
2. BJOG. 2001 oct; 108(10): 1057-67
3. Am J Obstet Gynecol 170:1713-23,1994

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CLINICAL TRIAL REGISTRATION: This clinical trial has not yet been registered in a public clinical trials registry.

HUMAN SUBJECTS: This study was approved by the ethics committee of San Carlo Hospital and followed the Declaration of Helsinki Informed consent was obtained from the patients.