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Title: MICTURITIONAL DYNAMICS BEFORE AND AFTER UROGYNAECOLOGICAL SURGERY

Aim Of The Study:

As the aim of uro-gynaecological surgery is to re-establish continence and repair prolapse, its effects on lower urinary tract dynamics are often considered of minor importance. This blinded study investigated pre and post-operative modifications in advanced urodynamic parameters in a P/F study to assess the effects of urogynaecological surgery on micturition dynamics.

Material And Methods:

In this preliminary study we evaluated 19 pts before and after uro-gynaecological surgery. The physician who performed the advanced P/F study analysis was unaware of the patient's pathology and type of surgery. Before and after surgery each patient underwent a clinical examination (see table 1)and a urodynamic test performed according to ICS criteria. Operations were as follow:

Vaginal sling in 7 patients, associated with Four-corner colposuspension in 1 and colpoperineoplasty in another; colposacropexy and Marshall Marchetti Kranz (MMK) in 5,associated with hysterectomy in 3; MMK in 3, Four-corner colposuspension in 3; Ratz associated with posterior colpoperineoplasty in 1. P/F data were analysed blind using the PUMA (1,2) in order to correlate curve morphology with the type and degree of prolapse. The Wilcoxon test provided a statistical analysis of the post-operative variations in the PUMA parameters (3) Urethral Efficiency(UE),Detrusor Efficiency(DE) and Total Strength Efficiency(TSE).

Results:

In 9/12 cases of cystocele ≥ 2 the PUMA curve morphology indicated a gradual decrease in the Effective Flow Section(EFS) with a corresponding increase in the Specific Work Density(SWD) and Effective Flow Velocity(EFv). The PUMA curve returns to normal after surgery.

Table 2 reports pre- and post- operative modifications in the UE, DE and TSE.

Discussion And Conclusions:

Analysis of the PUMA curves provides a good assessment of micturitional dynamics.The cystocele-related modification in the PUMA curves can be explained by the fact that during micturition cystocele gradually obstructs bladder voiding as shown by the decrease in the EFS curve. The simultaneous increases in the SWD and TSE curves are evidence of compensatory mechanisms designed to facilitate bladder voiding. This analysis cannot be done with any other advanced urodynamic method. After surgery significant differences emerged in the PUMA parameters, indicating an overall improvement. These modifications are due to the successful prolapse repair which improves micturitional dynamics despite the slight incontinence persisting in 4 patients remained. In conclusion PUMA assesses the effects of urogynaecological surgery, particularly prolapse repair, on micturitional dynamics.

Table 1: Clinical findings in 19 patients

			PRE-OPERATIVE	POST-OPERATIVE
SYMPTOMS	Incontinence SEAPI-QMN classification	I	6	4
		II	11	3
		III	2	0
	Irritative s.		9	3
	Obstructive s.		1	2
	Mixed s.		7	1
PROLAPSE sec. HALFWAY SYSTEM	Urethrocele	0	1	13
		I	6	5
		II	9	1
		III	2	0
	Cystocele	0	0	8
		I	7	9
		II	5	2
		III	7	0
	Rectocele	0	3	7
		I	9	10
		II	6	2
		III	1	0
	Hysterocele	0	9	13
		I	4	6
		II	4	0
		III	1	0

Tab.2: **PUMA Parameters pre and post surgery**

	PRE		POST		WILCOXON
	Median	Range	Median	Range	P
UE	45	29-99	80	57-96	>0,05
DE	69	67-77	78	64-86	>0,05
TSE	88	74-96	93	78-103	>0,05

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