

URODYNAMIC STUDY IN WOMEN BEFORE AND AFTER RADICAL HYSTERECTOMY AT ELSHATBY UNIVERSITY HOSPITAL

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INTRODUCTION

Radical hysterectomy has an excellent oncological outcome in cases of cervical or endometrial cancer, but its safety profile is questionable. The Querleu and Morrow classification system is a surgical classification that describes degree of resection and nerve preservation in three-dimensional (3D) planes of resection. Bladder dysfunction is among the most common complications of radical hysterectomy. Urodynamic studies provide extremely valuable diagnostic data for any of bladder dysfunctions. The most commonly reported changes after radical hysterectomy include urinary incontinence, urinary retention, and voiding by abdominal straining. In addition to voiding dysfunction, impairment of bladder sensation and also alteration of bladder capacity and bladder compliance. Nerve-sparing radical hysterectomy is associated with faster recovery of normal urinary functions compared to conventional approach.

AIM OF THE WORK

To detect any urodynamic changes in female patients before and after radical hysterectomy at El-Shatby Maternity University Hospital.

SUBJECTS AND METHODS

A total of 42 individuals were recruited in this RCT. Inclusion criteria included patients with cervical cancer (stages IA2 and IIB) or endometrial cancer (any stage) of any age. Patients with stage III or IV cervical cancer were excluded, as well as patients with history of intraoperative bladder injury or patients suffering from any contraindication for urodynamic evaluation. All the study participants were subjected to urodynamic study before undergoing radical hysterectomy, also routine urodynamic evaluation to assess the presence of urinary incontinence, voiding dysfunction, or detrusor hyperactivity was performed at two different time-points: 2 weeks then 3 months post-operatively.

RESULTS

Table 1 shows that two weeks post-operatively, only 6 patients (14.29%) were symptom-free. Most common symptoms were urgency/frequency (30.95%), followed by leakage on cough (26.19%), and urine retention (21.43%). In the nerve-sparing group,

In the nerve-sparing group, 71.4% of patients were symptom-free after two weeks. In contrast, only 1 patient (2.9%) was symptom-free in the non-nerve-sparing group. The urodynamic evaluation also shows similar findings. No urodynamic abnormality was detected in any individual in the nerve-sparing group (100% normal) compared to only 5.7% in the non-nerve sparing group. Nerve-sparing technique indeed seems protective against urodynamic complications compared to the non-nerve sparing technique (p-values: <0.001).

Table 2 shows that all individuals in the nerve-sparing group are symptom-free (100%) three months post-operatively, compared to only 71.4% ten weeks earlier. The rate of symptom-free individuals in the non-nerve sparing group increased from 2.9% (two weeks post-operatively) to 74.3%. (three months post-operatively). Similar findings are found regarding the urodynamic abnormalities. The proportion of individuals with no urodynamic abnormalities increased from 5.7% (two weeks post-operatively) to 74.3% (three months post-operatively). Although the rate of healing seems faster in the nerve sparing group, three months post-operatively, both groups seem comparable in terms of urinary complaints (p-value: 0.51) and urodynamic findings (p-value: 0.51).

Table 1: Relationship between type of surgery and urodynamics associated with patient complaints 2 weeks after

	N (%) (n= 42)	C1 (Nerve sparing) N (%) (n= 7)	C2 (non- nerve sparing) N (%) (n= 35)	p-value
Urinary symptoms after 2 Wks	-	-	-	< 0.001***
Absent	6 (14.29%)	5 (71.4%)	1 (2.9%)	-
Dysuria (UTI)	3 (7.14%)	2 (28.6%)	1 (2.9%)	-
Frequency & Urgency	13 (30.95%)	0 (0%)	13 (37.1%)	-
Leakage on cough	11 (26.19%)	0 (0%)	11 (31.4%)	-
Urine retention	9 (21.43%)	0 (0%)	9 (25.7%)	-
Urodynamics 2 weeks after	-	-	-	< 0.001***
Normal	9 (21.43%)	7 (100%)	2 (5.7%)	-
Detrusor hyperactivity	13 (30.95%)	0 (0%)	13 (37.1%)	-
Stress urinary incontinence	11 (26.19%)	0 (0%)	11 (31.4%)	-
Voiding dysfunction	9 (21.43%)	0 (0%)	9 (25.7%)	-
P-values obtained from the Chi-square test of independence				
$\alpha = 0.05$, $p < 0.05^*$, $p < 0.01^{**}$, $p < 0.001^{***}$				

Table 2: Relationship between type of surgery and urodynamics associated with patient complaints 3 months after

	N (%) (n= 42)	C1 (Nerve sparing) N (%) (n= 7)	C2 (non- nerve sparing) N (%) (n= 35)	p-value
Urinary symptoms 3 months after	-	-	-	0.51
Absent	33 (78.57%)	7 (100%)	26 (74.3%)	-
Frequency & urgency	4 (9.52%)	0 (0%)	4 (11.4%)	-
Leakage on cough	3 (7.14%)	0 (0%)	3 (8.6%)	-
Voiding dysfunction	2 (4.76%)	0 (0%)	2 (5.7%)	-
Urodynamics 3 months after	-	-	-	0.51
Normal	33 (78.57%)	7 (100%)	26 (74.3%)	-
Detrusor hyperactivity	4 (9.52%)	0 (0%)	4 (11.4%)	-
Stress urinary incontinence	3 (7.14%)	0 (0%)	3 (8.6%)	-
Voiding dysfunction	2 (4.76%)	0 (0%)	2 (5.7%)	-
P-values obtained from the Chi-square test of independence				
$\alpha = 0.05$, $p < 0.05^*$, $p < 0.01^{**}$, $p < 0.001^{***}$				

CONCLUSION

Comparing the rate of different post-operative complications following the nerve-sparing technique and the conventional non-nerve sparing technique shows significant superiority of the nerve-sparing technique in terms of urological safety. Nerve-sparing radical hysterectomy is associated with faster recovery of normal urinary functions compared to conventional approach. Post-operative urodynamic changes will most likely vanish within months. It is recommended to continue on using radical hysterectomy in indicated cases given the trivial risk-benefit ratio. It's also recommended to expand the utilization of nerve-sparing radical hysterectomy in indicated cases over the conventional non-nerve sparing technique.