IMPACT OF DIFFERENT METHODS OF PELVIC LYMPHADENECTOMY DURING RADICAL CYSTECTOMY & PROSTATECTOMY ON SURGICAL OUTCOMES: PROSPECTIVE RANDOMIZED STUDY

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INTRODUCTION

Prostate and bladder cancer are considered as a serious health problem, where they represent the second and the seventh most commonly diagnosed cancer in the male population worldwide respectively.

Radical cystectomy and prostatectomy with pelvic lymphadenectomy operations are considered the best treatment methods for non-metastatic muscle invasive bladder cancer and organ confined prostate cancer. Although pelvic lymphadenectomy plays a crucial role in staging and treatment of bladder and prostate cancer, there are some intraoperative complications such as increasing operative time, blood loss, vascular , neurologic injury and some postoperative complications as: lymphocele formation, lymphorrhea, prolonged drain placement with prolonged hospital stay, lymphedema and lower limb vascular compromise .

Methods used during lymphadenectomy whether clips, monopolar diathermy or ligasure can have an impact on the intraoperative and postoperative complications of pelvic lymphadenectomy in radical cystectomy and prostatectomy operations.

AIM OF THE WORK

The aim of this work was to study the impact of different methods of lymphatic vessel sealing during pelvic lymphadenectomy (clips, diathermy and ligasure) in radical cystectomy and radical prostatectomy on surgical outcomes.

SUBJECTS AND METHODS

Patients: This study included 40 male patients with bladder cancer or prostate cancer presented to the oncology genitourinary unit in Alexandria Main University Hospital with the following criteria**:**

- Adult male patients with bladder tumor eligible for radical cystectomy with pelvic lymph node dissection.
- Adult male patients with organ confined prostate cancer with more than 5% risk of lymph-node metastases according to Briganti nomogram scoring system 2012.

We excluded patients with the following criteria:

1.All female patients 2.Patients with MIBC underwent bladder preservation protocol.

2.Patients with prostate cancer received preoperative radiotherapy.

Methods: We did A prospective randomized study

Patients with bladder or prostate cancer that were considered candidates for pelvic lymphadenectomy during radical cystectomy or radical prostatectomy operations were assigned randomly using Sealed Opaque Envelope System to one of three groups:(A, B or C).

Group A: Pelvic lymph node dissection using surgical clips.

Titanium Ligating Clips LigaVÂ® ref: 0301-01ML.

Group B: Pelvic lymph node dissection using diathermy (monopolar).

KLS-martin ME401 monopolar diathermy device.

Group C: Pelvic lymph node dissection using ligasure sealing device (bipolar)

Covidiena, Valleylab Ls10 , LS Series Single Channel Vessel Sealing Generator) .

All patients in this study were subjected to preoperative assessment through history taking, physical examination, laboratory investigation and imaging modalities.

Intraoperative assessment of time and blood loss, neurological and vascular injuries of pelvic lymphadenectomy.

Postoperative course assessment for lymphorrhea, prolonged drain placement with prolonged hospital stay, lymphedema lower limb vascular compromise and lymphocele formation within 4 to 8 weeks postoperatively.

RESULTS

Table1: Comparison between three groups according to the postoperative data

	Group A Clips "n=15"		Group B Diathermy "n=10"		Group C ligasure "n=15"		ANOVA P value	P1	P2	P3
	No	%	No	%	No	%				
Lymphorrhea	6	40.0	4	40.0	1	6.7	8.27 0.019*	0.856	0.030*	0.026*
Lymphocele formation	5	33.3	1	10.0	0	0.0	X^2 4.16 0.041*	0.046*	0.013*	0.89
Post-operativeLL vascular compromise	0	0.0	4	40.0	0	0.0	7.087 0.028*	0.033*	-	0.033*
Lymphedema	1	6.7	4	40.0	0	0.0	13.11 0.007*	0.013*	0.75	0.003*

Table 2: Comparison between three groups according to the intraoperative data

	Group A Clips "n=15"		Group B Diathermy "n=10"		Group C ligasure "n=15"		ANOVA P value	P1 P2 P3
Operative time of LN dissection (mins)								
Range	25.0-45.0		25.0-40.0		20.0-35.0		18.52	0.025*
Mean	36.7		32.4		25.7		0.003*	0.001*
SD	5.4		4.7		4.2			0.001*
Blood loss (cc)								
Range	40.0-150.0		40.0-150.0		20.0-60.0		22.8	0.399
Mean	67.7		64.5		38.0		0.001*	0.001*
SD	28.1		32.7		10.5			0.004*
	No	**%**	**No**	**%**	**No**	**%**		
Number of patients with Intraoperative complications	1	6.7	6	40.0	1	6.7	0.011*	0.016* 1.0 0.016*
Obturator jerk	0	0.0	5	50.0	1	6.7	0.001*	0.001* 0.89 0.002*
Vascular injury	1	6.7	4	40.0	0	0.0	0.002*	0.001* 0.89 0.001*
IIA injury	1	6.7	0	0.0	0	0.0	-	-
EIA spasm	0	0.0	4	40.0	0	0.0	-	-

ANOVA = one way anovatest , P was significant if < 0.05 * = significant at level 0.05
P1 comparison between group A and B P2 comparison between group A and C
P3 comparison between group B and C

CONCLUSION

Although pelvic lymphadenectomy step during radical cystectomy and radical prostatectomy operations has intra and postoperative complications, using ligasure during pelvic lymphadenectomy has a positive impact on reducing such complications.