Urinary Drainage Following Radical Hysterectomy

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Abstract : *From July 1987 to December 1989, 66 patients with early stage cervical and endometrial cancers underwent radical hysterectomy and pelvic nodes dissection at Srinagarind Hospital, Faculty of Medicine, Khon Kaen University. To compare the rate of lower urinary tract complications after surgery, the patients were voluntarily placed on transurethral or suprapubic catheterization. Postoperative morbidities were observed. The only advantage of suprapubic catheterization observed was the absence of urinary incontinence (0/27), while 15% (6/39) were observed in another group (p=0.03). All other studied parameters were the same in both groups. (Thai J Obstet Gynaecol 1993;4:125-128.)*

Key words : radical hysterectomy, complications, drainage

Radical hysterectomy and pelvic nodes dissection is the treatment of choice for stage IB and IIA cervical and endometrial cancers, which comprises about 15% of the cases. More than 50 cases a year are operated on in this hospital nowadays. The surgical procedure itself places the bladder at considerable risk of complications including injury, dysfunction and infectious morbidity. At the institute, although intraoperative injury to the urinary tract is rare, urinary dysfunction with urinary tract infection continue to be the most significant complications following radical hysterectomy. The incidence of the complications ranges from 16 to 87% in most reports[1,2] and a variety of surgical techniques, inconsistent radiation therapy and differences in perioperative management of bladder drainage render a comparison of published data infeasible. Uniform estimation of long-term results is almost impossible owing to changes in surgical techniques and perioperative regimens. A recent review of radical hysterectomy at Srinagarind Hospital revealed 61.5% of bladder dysfunction and 21.5% of urinary incontinence[3]. Suprapubic bladder drainage was reported to be more valuable in reducing lower urinary tract

complications[4].

This study was carried out to compare the rate of lower urinary tract complications in both suprapubic and transurethral catheterization groups.

Materials and Methods

Patients

The patients enrolled in this study were those who had histologically proven cervical cancer stage IB to IIA or endometrial cancer stage II who had undergone radical hysterectomy and pelvic lymphadenectomy at Srinagarind Hospital, Faculty of Medicine, Khon Kaen University, from July 1987 to December 1989. The surgeons were the staffs of the Division of Gynaecologic Oncology, Department of Obstetrics and Gynaecology. The operative techniques performed in this hospital were class III extended hysterectomy as Piver's classification[5] and the modified Okabayashi technique as mentioned by Sekiba[6]. Those who had contraindication for radical surgery were

Table 1 Patients' characteristics

Characteristics	TUC n=39	SPC n=27
1. Mean age	45.23±9.17	40.29±10.20
2. Mean weight	56.44	52.44
3. Stages :		
IB	36	24
IIA	3	1
IIB	0	2
4. Prior conization	3	0*
5. Prior radiation	1	1
6. Prior chemotherapy	1	2
7. Techniques :		
Wertheim-Meig	21	5
Okabayashi	18	22*
10. Surgeons		
1	13	13
2	19	3
3	5	9
4	2	2
11. Mean operation time (min)	193.08±33.08	201.67
12. Mean blood loss (ml)	1297.05±659.43	1266.67±1016.02
13. Mean blood transfusion (units)	2.97±1.55	2.74±2.09

* Statistical significant
TUC= Transurethral catheterization
SPC= Suprapubic catheterization

excluded from the study. The patient's characteristics are shown in Table 1.

Method

The patients were voluntarily selected into 2 groups: group 1 were placed on transurethral catheter and group 2 were placed on suprapubic catheter at the end of surgery. The patients were observed for postoperative urinary functions clinically from the 7th postoperative day until they were discharged from the hospital and then three monthly in the first year and six monthly after that. Bladder dysfunction was defined as an inability of the bladder to contract and initiating urination from both hypertonic and atonic phase. Urinary incontinence was defined as the observation of involuntary loss of urine at normal circumstances or increase intraabdominal pressure. Difficulty in urination was defined as the difficulty or inability to urinate due to mechanical urethral defect and not from the bladder cause. Residual urine was the volume of fluid remaining in the bladder immediately following micturition.

Results

With the minimum time of follow-up of at least 11 years of observation of postoperative morbidities, the urinary complications of both groups of patients are shown in Table 2. There was no urinary incontinence in the suprapubic group while 6 patients (15.4%) of the transurethral group were observed. Table 3 shows the infectious morbidities of the two groups and all parameters were the same.

Discussion

The aetiologies of disorders of the lower urinary tract after radical pelvic surgery range from lesions of the pelvic nerves and postural changes of the bladder in an empty pelvic cavity to involuntary lesions resulting from insufficient perioperative bladder drainage and urinary tract infections. The majority of the nerves from the pelvic plexus which supply the bladder pass over and

Table 2 Postoperative morbidity

Morbidity	TUC N=39	SPC N=27
1. Bladder dysfunction	31	18
2. Urinary incontinence	6	0*
3. Difficulty urination	5	4
4. Residual urine day	10.84	24.44
5. Postop. hospitalization	17.71	17.48

* Statistical significant

Table 3 Infectious morbidity

Morbidity	TUC N=39	SPC N=27
1. Febrile morbidity	18	15
2. Generalized sepsis	3	2
3. Urinary tract infection	24	16
4. Other non-surgical site infection	23	17

around the vagina. Any operation involving excision of the paracervical and paravaginal web of retroperitoneal tissue will interrupt some portion of bladder innervation. Some of the fibers pass around the lateral aspects of the vagina, deep dissection tends to include the paravaginal portion of the web, however, complete interruption of innervation is rare. As the only site of parasympathetic to the bladder entry, the more the operation goes lateral and deeper into the parametria, the greater the complications of the urinary tract. Complications from radical hysterectomy and pelvic nodes dissection are still inevitable sequelae. It is increased when surgery is followed by radiotherapy in those high risk patients. Bladder dysfunction is the most common complication and attempts have been made to overcome the problem. Prolonged bladder drainage has been recommended to prevent over distension in the early hypertonic phase. van Nagel et al[4] recommended suprapubic cystostomy to be superior to urethral catheter. Kadar and Nelson[7] recommended voiding by the clock in combination with Crede's maneuver or intermittent self catheterization is more acceptable.

From our limited clinical experience and without urodynamic study, suprapubic catherization has benefit in prevention of urinary tract complications. Attempts must be focussed on the more practical and acceptable way for the patients, nurses and other health personnel who take care of those postoperative patients.

References

1. Petri E. Bladder dysfunction after radical pelvic surgery. In : Ostergard DR,ed. Gynecologic urology and urodynamics, theory and practice. 2nd ed. Baltimore:Williams & Wilkins,1985:545-55.
2. Kadar N, Saliba N, Nelson JH. The frequency, causes and prevention of severe urinary dysfunction after radical hysterectomy. Br J Obstet Gynaecol 1983;90;858-62.
3. Pothinam S, Pengsaa P, Udomthavornsuk B, Titapan V. Radical hysterectomy : Srinagarind Hospital. J Med Assoc Thailand 1989;72:441-7.
4. Van Nagell JK, Penny R, Roddick JW. Suprapubic bladder drainage following radical hysterectomy. Am J Obstet Gynecol 1972;113:849-50.
5. Piver MS, Rutledge JP. Five classes of extended hysterectomy for women with cervical cancer. Obstet Gynecol 1974;44: 265-72.
6. Sekiba K. Radical hysterectomy for cancer of the uterine cervix. Seminars in Surggical Oncology 1985;1:95-104.
7. Kadar N, Nelson JS. Treatment of urinary incontinence after radical hysterectomy. Obstet Gynecol 1984;64:400-5.