Prevalence of Neurogenic Bladder after Hysterectomy in Srinagarind Hospital

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Background and objective: The radical hysterectomy has been used to treat early stage (stage IB-IIA) of cervical carcinoma. Although the surgical technique has been improved, the pelvic plexus may be damaged during the operation causing urinary dysfunction. The previous study showed the odds of urinary incontinence after the hysterectomy was 1.4. To the best of our knowledge, there is no study involving prevalence of neurogenic bladder after hysterectomy in Srinagarind hospital. Therefore, this study aimed to determine the prevalence and characteristics of neurogenic bladder following hysterectomy in patient with cervical carcinoma.

Material and Methods: All medical records of patients who diagnosed cervical carcinoma and underwent hysterectomy between 1 January 2550 to 31 May 2555 from database system of Srinagarind hospital, KhonKaen university were reviewed.

Results: One hundred and fifty two subjects were included. Most of them (82.2%) underwent radical hysterectomy. Sixty-four percent developed urinary dysfunction after radical hysterectomy. Of these, 52.8 % were transient neurogenic bladder. No urinary dysfunction was observed in patients underwent extrafascial hysterectomy, the average duration of postoperative in dwelling catheterization was shorter than transient neurogenic bladder in radical hysterectomy group significantly (24.5 +/- 11.6 VS 1.0 +/- 0.2 days; 95%CI 19.0 to 27.9). Only 12% developed neurogenic bladder; 10.4% flaccid neurogenic bladder, 1.6% spastic neurogenic bladder.

Conclusions: Some patients developed neurogenic bladder following radical hysterectomy. Most common type of neurogenic bladder was flaccid type. Postoperative urinary function had better recovery after extrafascial hysterectomy.

Key words: Cervical carcinoma, Neurogenic bladder, Hysterectomy

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Introduction

Cervical carcinoma is a common tumor in female. The radical hysterectomy has been used to treat early stage (stage IB-IIA) of cervical carcinoma[1,2] Although the surgical technique has been improved, the pelvic plexus may be damaged during the procedure which cause urinary dysfunction[3,4]. The previous study showed the odds of urinary incontinence after the hysterectomy was 1.4[5]. The incidence of lower urinary tract dysfunction after radical hysterectomy were 8-80%[6, 7] and persisted more than 6 months after hysterectomy[8].

Neurogenic bladder is dysfunction of bladder caused by neurologic condition. This condition is divided into storage dysfunction and voiding dysfunction. Not only

affects the quality of life, neurogenic bladder may lead to many consequences such as urinary tract infection, vesicoureteral reflux[9, 10] and renal failure.

To the best of our knowledge, there was no study involving prevalence of neurogenic bladder after hysterectomy in Srinagarind hospital. Therefore, this study aimed to determine the prevalence and characteristics of neurogenic bladder following hysterectomy in patient with cervical carcinoma.

Objective

The aim of this study was to determine the prevalence and characteristics of neurogenic bladder following hysterectomy in Srinagarind hospital patient with cervical carcinoma

Material and Methods

This study was approved by the Human Research Ethics Committee, Khon Kaen university, Thailand (protocol number HE561060).

All medical records of patients who diagnosed cervical carcinoma and underwent hysterectomy between 1 January 2550 to 31 May 2555 from database of Srinagarind hospital, KhonKaen university were reviewed. The patients who had history of neurogenic bladder prior to surgery, received adjuvant therapy including radiotherapy and chemotherapy, had urinary tract injury due to operative procedure or recurrent cervical carcinoma were excluded.

The pathological type of cervical carcinoma, staging of carcinoma, operative procedure, type of neurogenic bladder, type of adjuvant therapy, frequency of urinary tract infection, duration of using indwelling catheterization and current bladder emptying method were retrieved from medical records.

Clinical manifestation such as storage symptoms, voiding symptoms, post micturition symptoms and data of genitourinary investigation (voiding cystoureterography, ultrasound KUB, IVP, Urodynamic study) were analyzed for characteristic of neurogenic bladder.

Flaccid neurogenic bladder was defined by voiding dysfunction and abnormal genitourinary tract investigation include post voiding residual urine which more than 30% of bladder capacity, decreased or absent bladder sensation, voiding dysfunction such as straining and feeling of incomplete emptying.

Spastic neurogenic bladder was defined by storage dysfunction and abnormal genitourinary tract investigation include increased frequency, increased bladder sensation, decreased bladder capacity (< 300 ml), decreased bladder compliance (< 20 ml/cmH2O), detrusor overactivity, increase detrusor pressure (>40 cm/H_2O in storage phase and > 60 cmH_2O in voiding phase).

Transient neurogenic bladder was defined by temporality bladder dysfunction more than 14 days, but symptoms spontaneously disappear.

Descriptive statistic, mean and standard deviation (SD), was used for statistical analysis. To compare the prevalence of neurogenic bladder between different surgical technique, student t-test was used after the distribution of data were tested.

Result

One hundred and fifty two subjects, with average age of 46.1+/- 8.1 years were included. Of these, the most pathological type (70%) were squamous cell carcinoma followed by adenocarcinoma (29%) and adenosqumous cell carcinoma (1%). The percentage of FIGO stage IA, stage IB and stage IIA were 30.9 % (47/152), 59.9 % (91/152) and 2.6 %(4/152) respectively. Most of them (82.2%) underwent radical hysterectomy. Sixty-four percent developed urinary dysfunction after radical hysterectomy. Of these, 52.8 % were transient neurogenic bladder with mean duration of post in

dwelling catheterization 24.5 +/- 11.6 days. No urinary dysfunction was observed in patients underwent extrafascial hysterectomy, the average duration of postoperative indwelling catheterization was shorter than transient neurogenic bladder in radical hysterectomy group significantly (24.5 +/- 11.6 VS 1.04 +/- 0.2 days; 95%CI 19.0 to 27.9). Only 12% developed neurogenic bladder; 10.4% flaccid neurogenic bladder, 1.6% spastic neurogenic bladder. Most of them used clean intermittent catheterization as the current bladder emptying method. (Table 1 and Figure 1)

The results of this study show only 12 % developed neurogenic bladder following radical hysterectomy whereas no incidence of neurogenic bladder after extrafascial hysterectomy. Most common type of neurogenic bladder was flaccid type. The average duration of postoperative indwelling catheterization was shorter in extrafascial hysterectomy than transient neurogenic bladder in radical hysterectomy group. Postoperative urinary function had better recovery after

Table 1 Demographic data

Operation (n)	Radical hysterectomy (125)	Extrafascial hysterectomy (27)
Mean Age ± SD(yrs.)	46.46 ± 8.80	44.67 ± 7.94
Pathological (n)		
- SCCA	85	23
- Adenocarcinoma	40	4

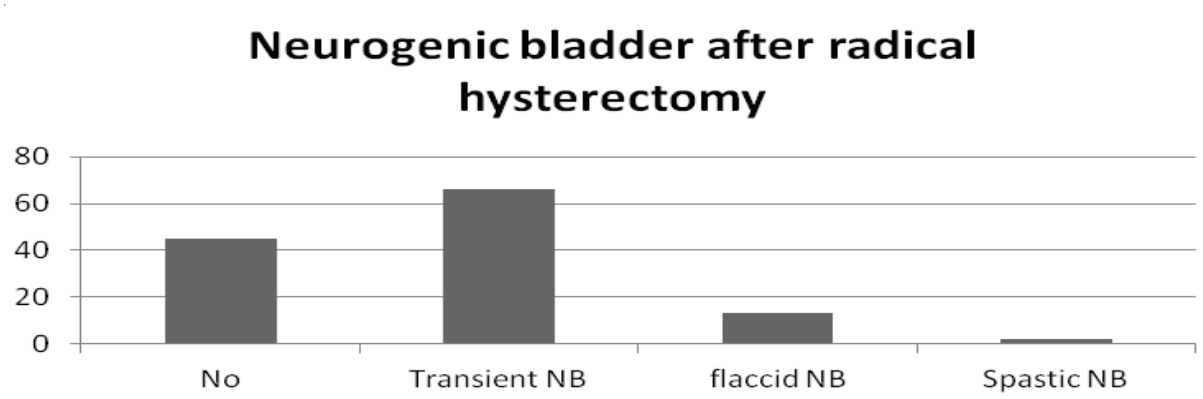

Figure 1 The number of subjects who diagnosed neurogenic bladder after radical hysterectomy

Conclusions

extrafascial hysterectomy.

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