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## GYNAECOLOGY

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# Analysis of Vaginal Hysterectomy in a Residency Training Program: A 5 Years Experience at Chonburi Regional Hospital

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### ABSTRACT

**Objective** This study present the amount of vaginal hysterectomy performed by residents on training program. The study also compares surgical complications and patient outcomes between vaginal hysterectomy performed by staffs and those performed by resident physicians with the staff assisting and teaching.

**Study design** Retrospective descriptive study.

**Material and Method** During a 5 years interval (January 2003 - December 2007) 107 patients who underwent vaginal hysterectomy at Chonburi Regional Hospital. Demographic, historic and preoperative physical examination variables were presented and compared. Intraoperative and postoperative outcomes were also compared.

**Results** Patients operated by the staffs (group 1) had more old age than resident physicians (group 2)(group 1 vs group 2 : 67.6 years vs 62 years,  $p=0.01$ ). No difference were observed for BMI ( $p=0.96$ ) and hospital stay ( $p=0.78$ ). The patients operated by resident physicians required longer operating times (group 2 vs group 1:102.40 minutes vs 91.04 minutes) and more estimated blood loss (group 2 vs group 1:237.35 ml vs 170.83 ml). But there were no a statistical difference for operating time ( $p=0.05$ ) and estimated blood loss ( $p=0.13$ ). The patients were elderly women with underlying medical diseases (35.5%). There were no serious complications in both groups.

**Conclusion** We demonstrated that in a regional hospital which has residency training program, the resident physicians could be taught to perform vaginal hysterectomy with a slightly prolonged operative time and blood loss. There were no serious complications.

**Keywords:** vaginal hysterectomy, resident training, surgical teaching

It seems that vaginal hysterectomy would be a primary goal of all obstetric and gynecologic residents upon completion of their residency training.<sup>(1)</sup> However the achievement requires practice and experience. The query of senior obstetric gynecologic residents indicated that some

residents completed their training with little or no experience in vaginal hysterectomy.<sup>(2)</sup> Certain concern have been voiced by residents and their educators regarding perceived deficits in gynecologic surgery training.<sup>(1)</sup>

The aim of this study was to review the

vaginal hysterectomy experience of resident physician mentored by staff in the regional hospital. The procedure taught and performed vaginal hysterectomy by resident physicians and staff are of the same techniques<sup>(3)</sup>. Surgical complications and patient outcome between vaginal hysterectomy performed by experienced staffs and those performed by resident physicians with staff assisting and teaching were compared.

## Materials and Methods

This study is a retrospective review of 107 consecutive women with prolapsed uterus and cystoectoceles who underwent vaginal hysterectomy and anterior colporrhaphy posteriorcolpoperineorrhaphy during a 5 years period (January 2003 - December 2007) at Chonburi Regional Hospital, preoperative assessment was completed and the surgical management plan was done by the staffs with the resident physicians' participation. The vaginal hysterectomy and anterior colporrhaphy posteriorcolpoperineorrhaphy were performed by the staffs assisted by resident physicians (group 1) or by a resident physicians under the supervision and direction of the staffs (group 2).

Demographic, historic and preoperative physical examination variables were compared for the two groups. Intraoperative and postoperative outcomes were also compared. Data were analyzed using mean, standard deviation, percentage and Student's t test. P value < 0.05 was statistical significance.

## Results

Of 107 procedures, the staffs performed 24 (22.42%) and resident physicians performed 83 (77.51%). Table 1 presents the characteristics of the study subjects. The patients' age varied between 37 to 80 years old with the mean of 63.33 years. Patients operated by staffs were older ( $p=0.01$ ) There were 38 cases of patients (35%) who had underlying medical disease. The underlying medical diseases were shown in Table 2 such as

hypertension, diabetes mellitus, ischemic heart disease and abnormal EKG. The mean of operative time for all patients was 99.85 minutes. The mean of operative time for patients operated by the staffs was 91.04 minutes and the mean of operative time for patients operated by the resident physicians was 102.40 minutes. The mean operative time for patients operated by resident physicians was longer than the mean operative time for patients operated by the staffs but there was no statistical difference ( $p=0.057$ ). The mean of estimated blood loss in group 1 was 170.83 ml and the mean of estimated blood loss in group 2 was 237.35 ml. The estimated blood loss in group 2 were more than group 1. However there was no statistical difference ( $p=0.13$ ). There were not statistical differences between two groups for body mass index ( $p=0.96$ ), and hospital stay ( $p=0.78$ ). There were estimated blood loss over 500 ml 6 cases performed by resident physicians and 1 case performed by the staff which required blood transfusion. There were no serious complications both intraoperation and postoperation. There were 5 cases of wound infections and 2 cases of urinary tract infection performed by resident physicians. Types of anesthesia were spinal block 90 cases and general anesthesia 17 cases.

**Table 1.** Characteristics of patient population.

Characteristics	All patients (n=107)	Group 1 : Patients operated by staffs (n=24)	Group 2 : Patients operated by resident physicians under supervision (n=83)	p Value
Age (means $\pm$ SD, years)	63.34 $\pm$ 9.48	67.6 $\pm$ 76.62	62.0 $\pm$ 89.84	p=0.01
Body Mass Index(means $\pm$ SD)	22.99 $\pm$ 3.63	22.95 $\pm$ 3.66	23.00 $\pm$ 3.64	p=0.96
Operative time (means $\pm$ SD, minute)	99.85 $\pm$ 25.79	91.04 $\pm$ 29.11	102.40 $\pm$ 24.34	P=0.057
Estimated blood loss (means $\pm$ SD, ml)	187.62 $\pm$ 222.43	170.83 $\pm$ 230.27	237.35 $\pm$ 172.12	p=0.13
Hospital stay (means $\pm$ SD, days)	61.00 $\pm$ 2.53	5.87 $\pm$ 2.44	6.04 $\pm$ 2.56	p=0.78

p < 0.05 was statistical significance

**Table 2.** The underlying medical disease of the patients

Underlying medical disease	No. of patients
Hypertension	19
Hypertension with diabetes mellitus	10
Hypertension with ischemic heart disease	3
Diabetes mellitus	2
Abnormal EKG.	4
Total	38

## Discussion

This study demonstrated that under the guidance of the staffs, resident physicians can safely perform vaginal hysterectomy with outcome and complication rates that do not differ from those of staffs. Although resident “proficiency” with surgical procedures may be difficult to assess, but surgical complications and patient outcomes can be objectively compared for surgical performed by resident physicians and staffs.<sup>(4)</sup> Other authors interested in complication rates in training program have reported similar low levels of complications.<sup>(5,6)</sup> Mann et al<sup>(7)</sup> reported an overall ureteral injury rate of 0.4% when they reviewed 3,185 major gynecologic operations performed in a training program over 7 years period. In this series of patients, the procedure taught and performed by resident physicians have no

serious complications. But only 1 case had blood loss required blood transfusion. In this case, blood loss were due to less prolapsed uterus, less age of the patients and the operation skill of the resident physicians. The issues of acquiring surgical skills in a residency training program and the potential risks that a patient may face when a resident physician is the primary surgeon without the staff. Because the uterine prolapse is one of the challenging surgical problems that resident physicians face.<sup>(8)</sup> One important as surgical training programs age required to quantify the acquisition of surgical skills and to assess surgical outcomes. Assessment of surgical outcomes is an ideal way to evaluate the impact of resident physicians functioning as the primary surgeon.<sup>(9)</sup> In the regional hospital is an appropriate in an environment of resident training in which

resident physicians are acquiring skills. A great advantage is the opportunity to perform procedures in residency training program. The only disadvantage is a slightly prolonged operative time and estimate blood loss. Almost the patients were elderly age and there were underlying medical diseases. Thus preoperative evaluate must be done thoroughly especially for patients with hypertension, abnormal EKG, ischemic heart disease and diabetes mellitus.<sup>(10)</sup>

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## การวิเคราะห์งานผ่าตัดมดลูกทางช่องคลอดในการฝึกอบรมแพทย์ประจำบ้าน ; ประสบการณ์ 5 ปี ที่โรงพยาบาลศูนย์ชลบุรี

### นันทศักดิ์ โชติวณิช

**วัตถุประสงค์ :** เพื่อศึกษาจำนวนผู้ป่วยที่ได้รับการผ่าตัดมดลูกทางช่องคลอดด้วยโรคมดลูกหย่อน ในการฝึกอบรมแพทย์ประจำบ้าน และเปรียบเทียบผลการผ่าตัด ภาวะแทรกซ้อนของผู้ป่วยที่ผ่าตัดมดลูกทางช่องคลอด ระหว่างการผ่าตัด โดยแพทย์ประจำบ้านที่มีอาจารย์แพทย์สอนควบคุมกับการผ่าตัดโดยอาจารย์ที่มีแพทย์ประจำบ้านเป็นผู้ช่วย

**วัสดุและวิธีการ :** ในระยะเวลา 5 ปี (มกราคม พ.ศ. 2546 – ธันวาคม 2550) ผู้ป่วยจำนวน 107 รายที่ได้รับการผ่าตัดมดลูกทางช่องคลอดเก็บข้อมูลทั่วไป, ประวัติการตรวจร่างกาย, การผ่าตัด , หลังการผ่าตัด และภาวะแทรกซ้อนของผู้ป่วยได้นำมาเปรียบเทียบระหว่าง 2 กลุ่ม

**ผลการศึกษา :** ผู้ป่วยที่ผ่าตัดโดยอาจารย์พบว่าอายุสูงวัยกว่า (กลุ่ม 1 กับ กลุ่ม 2 67.6 ปี กับ 62,  $p = 0.01$ ) ไม่พบความแตกต่างของ BMI ( $p = 0.96$ ) และระยะพักรักษาในโรงพยาบาล ( $p = 0.78$ ) ผู้ป่วยผ่าตัดโดยแพทย์ประจำบ้านใช้เวลาการผ่าตัดนานกว่า (กลุ่ม 2 กับ กลุ่ม 1: 102.40 นาทีกับ 91.04 นาที) และจำนวนเสียโลหิต มากกว่า (237.35 มิลลิลิตรกับ 170.80 มิลลิลิตร) แต่ไม่มีนัยสำคัญแตกต่างตามสถิติสำหรับเวลาผ่าตัด ( $p=0.05$ ) และจำนวนเสียโลหิต ( $p = 0.13$ ) ผู้ป่วยมีอายุสูงวัยและมีโรคทางอายุรกรรม (35.5%) ไม่พบภาวะแทรกซ้อนรุนแรงจากการผ่าตัดทั้ง 2 กลุ่ม

**สรุป :** ได้นำเสนอการฝึกอบรมความรู้ความชำนาญแพทย์ประจำบ้านของโรงพยาบาลศูนย์ แพทย์ประจำบ้านสามารถเรียนรู้การทำผ่าตัดมดลูกทางช่องคลอดได้ แต่พบว่ามีการใช้เวลาผ่าตัดนานกว่าและเสียโลหิตมากกว่า แต่ไม่พบภาวะแทรกซ้อนรุนแรง