Original Article

Scarless hysterectomy for benign diseases of uterus without prolapse

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Abstract

Introduction: To show that scarless hysterectomy is the alternative way of hysterectomy in the selected benign pathology of uterus without prolapse. It has advantages of lower morbidity, faster recovery and no scar seen on abdomen.

Method: A prospective descriptive study was carried out in Nopparat Rajathani Hospital between April 2009 and April 2012 among 90 women without uterine prolapse who requested hysterectomy for different benign diseases of the uterus. Scarless hysterectomies were done by the technique adapted from Purohit Ram Krishna and Masaaki Andou. Successful operation, intra and post operative morbidity, activity, and re-admission were observed.

Results: Scarless hysterectomy was succeeded in 89/90 cases (98.9%), bilateral salpingo-oophorectomy in 26/89 cases (29.2%). One case was converted to abdominal hysterectomy due to broad ligament leiomyoma. No intra and post operative morbidity, no re-admission, and good postoperative activity were observed.

Discussion and Conclusion: Scarless hysterectomy is the alternative way for hysterectomy in the selected cases of benign diseases of the uterus if a surgeon has adequate experience for this surgery. It gives less morbidity, faster recovery and no scar on abdomen.

Key words: Scarless hysterectomy (SH), Vaginal hysterectomy (VH), Non-prolapsed uterus, Benign disease of uterus

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Introduction

Hysterectomy is the second most common surgery in reproductive age women. In USA, this operation was performed about 600,000 cases per year. Most pathological findings are benign: leiomyoma 33%, dysfunctional uterine bleeding (DUB) 17%, endometriosis 9% etc. The routes of surgery are abdominal (AH), vaginal (VH), laparoscopic (LAVH, LH, TLH) or combination. Vaginal hysterectomy (VH) or Scarless hysterectomy (SH) that was used in this paper to differentiate from past VH that done in prolapsed uterus. VH is the least invasive hysterectomy that performed commonly in USA, Europe, Japan and India in non prolapsed uterus.[1] But there is very few reports in Thailand.

Method

This study was approved by ethics committee of Nopparat Rajathani Hospital for researches involving human subjects and informed consent to all patients before admission.

A prospective descriptive study was carried out between April 2009 and April 2012 in 90 women without uterine prolapse who requested hysterectomy for different benign diseases of the uterus. The inclusion criteria were

1. Uterine size not larger than 16 – 18 weeks gestational age (GA) size
2. Normal Pap smear
3. Proved benign pathology in abnormal uterine bleeding cases
4. No severe abdomino-pelvic adhesions by pelvic examination

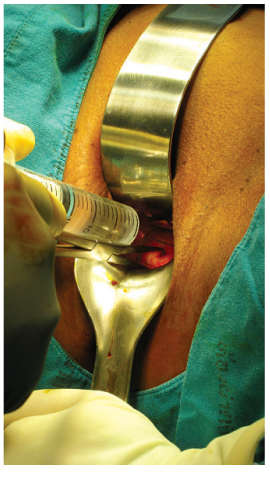
All data were analyzed by SPSS version 13. Descriptive statistics were used for clinical data as number, percent, min, max, mean, SD. There were 50 cases of leiomyoma, 15 cases of adenomyosis, 3 cases of DUB, 3 cases of chronic pelvic pain, 4 cases of cervical intra epithelial neoplasia (CIN) III, 15 cases of mental retardation.

Table 1 Demographic data

Patients demographic data	Range	Mean	SD
1. age (year)	10 – 56	44.1	15.40
2. vaginal delivery	0 – 5	1.8	1.36
3. previous cesarean section (no.)	0 – 3	0.6	0.63
4. previous other abdominal surgery (no.)	0 – 1	0.3	0.42

The extraperitoneal surgical techniques before securing uterine vessels were adapted from Purohit Ram Krishna[2] and Masaaki Andou.[3] The steps of this technique were

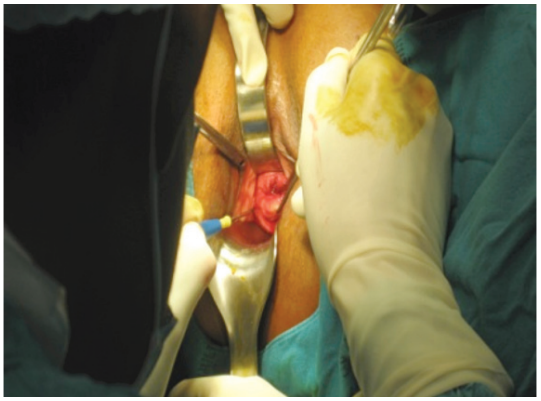
1. Hydrodissection of the plane of vaginal mucosa at the fornices of cervix by injection of normal saline soluton (NSS) 20 ml. ± 2 drops of 1 : 1000 adrenaline (in non hypertensive patients)



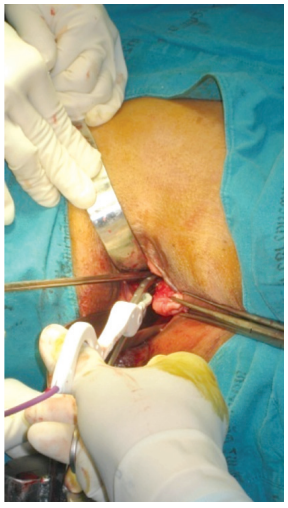
2. The electric cauterizations were

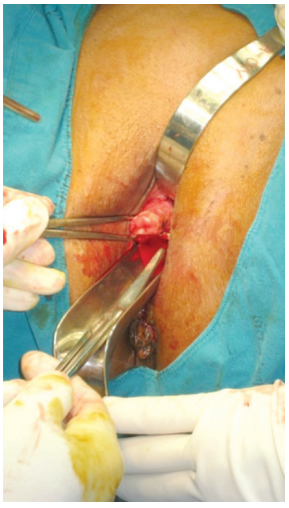
- incision by Monopolar (MP) 30 watt, pure cut.
- coagulation by Bipolar (BP) 50 watt, fine tip long legs.
- tissue desiccation/coagulation by Liga Sure®

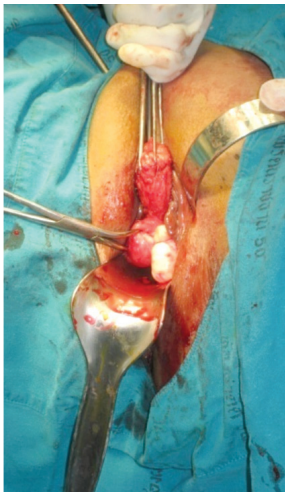
3. Circumferential incision of vaginal fornices was done by MP deep to submucosa.

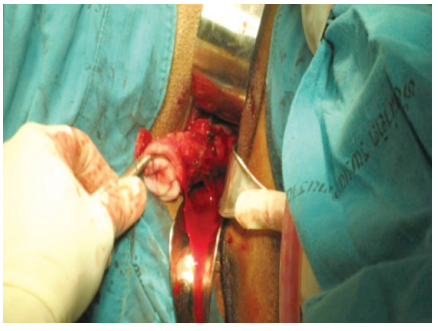


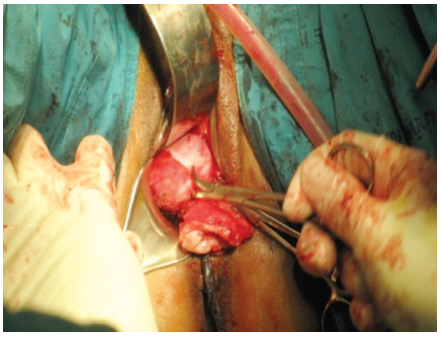
4. Desiccated / coagulated sacrouterine ligaments, cardinal ligaments, uterine vessels, broad ligaments, adnexae orderly and carefully by BP & Liga Sure® then cut by a Mayo scissors.



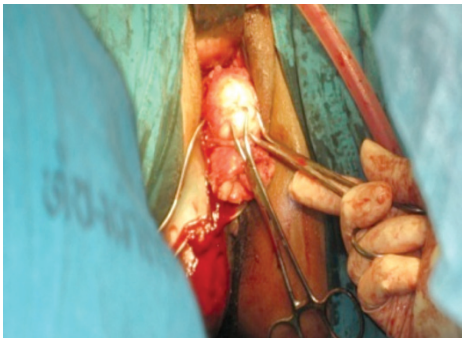


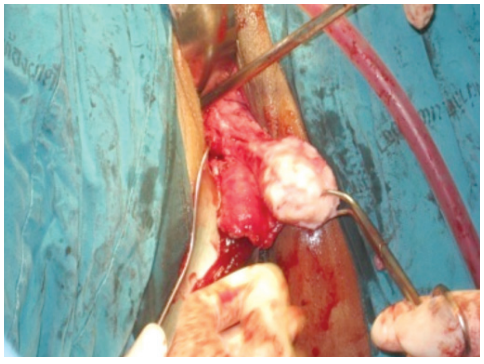


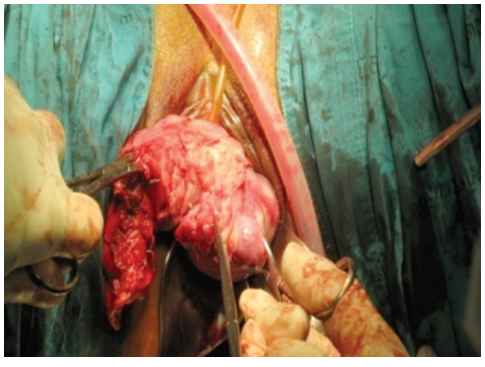


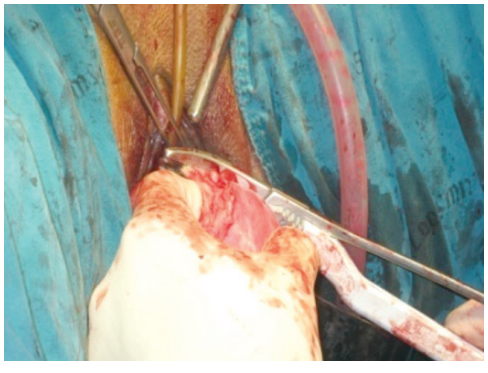


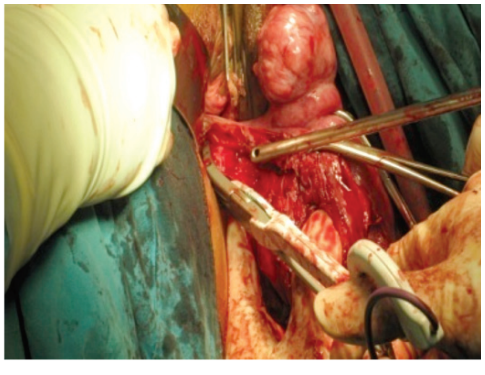
5. Conventional volume reduction maneuvers were used for large uterus.[4-6]



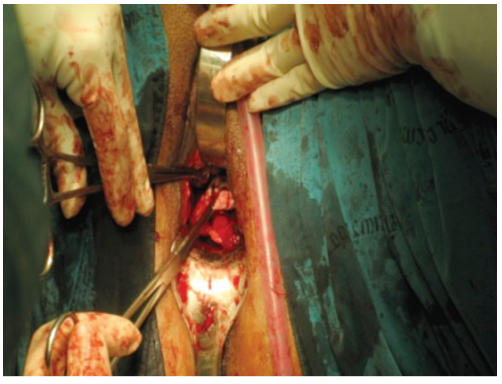


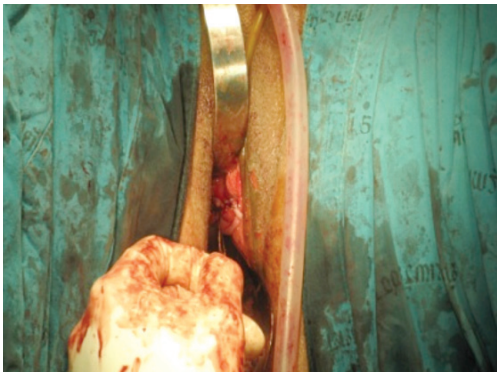


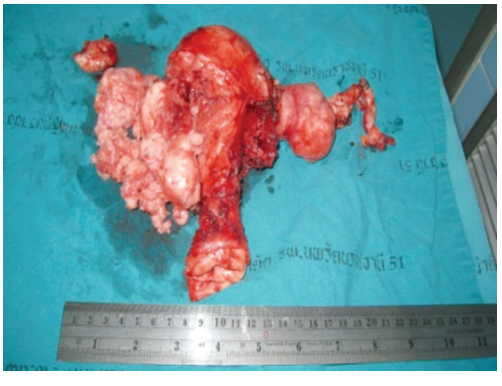




6. No sutures for any pedicles, except for uncontrolled bleeding. Lateral vaginal angles fixation (vault prolapse prevention) and stump closures by vicryl 2-0 were done interruptedly.







7. For an obstacle or poor visibility, A 10 mm telescope was used with light source to illuminate transvaginally and proceed further step of the operation.[7, 8] Success rate, morbidity, and patients activity were observed.

Results

Table 2 The operative data

Patients operative data	Range	Mean	SD
1. operative time (min) for SH	40 -145	61.5	32.29
2. operative time (min) for BSO	20 – 30	25	10.32
3. blood loss (ml.)	50 – 1,000	360.8	235.31
4. specimen weight (gm.)	40 – 750	250.8	171.92
5. hospital stay (days)	2 - 3	2.1	0.58

Note : BSO (bilateral salpingo – oophorectomy)

Table 3 The total cost that the patients paid shown in Baht, by comparing to AH (20 cases) and LAVH, LH, TLH (20 cases) that collected in the same time (unpublished author data)

Procedures	Costs		
	Range	Mean	SD
AH	20,820 – 26,100	23,555.8	1,652
LAVH , LH , TLH	28,940 – 38,750	31,478.3	3,393
VH , SH	19,800 – 24,850	21,317.2	1,611

Note: AH (abdominal hysterectomy), VH (vaginal hysterectomy), SH (scarless hysterectomy), LAVH (laparoscopic assisted VH), LH (laparoscopic hysterectomy), TLH (total laparoscopic hysterectomy)

Table 4 Upright walking position at postoperative 24 hours (same source as table 3)

Procedures	%
AH	48
LAVH , LH , TLH	71
VH , SH	100

SH was completed in all 89/90 cases (98.9%). Mean operative time for SH was 61.5 min. Mean operative time for additional BSO was 25 min. Mean blood loss was 360.8 ml. Mean uterine weight was 250.8 gm. Mean hospital stay was 2.1 days. Mean total cost was 21,317.2 baht. All patients could walk uprightly at 24 hours postoperative. One case was converted to AH due to broad ligament leiomyoma (conversion rate = 1.1%). No laparoscopy was used in any cases. Bilateral salpingo-oophorectomy in 26/89 cases (29.2%). Mostly BSO (20/26 cases, 76.9%) were incidental operations for peri-menopause patients need and 6 cases due to benign adnexal pathology. All operations were succeeded without complications, including 45 nulliparous cases. The 4 teenagers (Down's syndrome) needed additional episiotomy to improve vaginal diameter. All patients could walk uprightly on 24 hours postoperatively. There was one case of large myoma uteri (750 gm = 18 week GA size) that had intraoperative bleeding = 1,000 ml (Hct. 37% drop to 27%) and need 1 unit of blood transfusion. No post-operative bleedings, no vault hematoma, no febrile morbidity and no readmission were observed. All cases were follow up at 2 weeks, 6 weeks, 3 months, 6 months and 1 year.

Discussion and conclusion

Hysterectomy and/or salpingo-oophorectomy are essential operations for many patients and gynecologists. There are 3 choices of hysterectomy :

1. AH is the basic approach.

2. LAVH, LH, TLH need more laparoscopic surgery skills, more and expensive disposable instruments.

3. VH (SH) needs some training but gives the least invasion to the patients.

VH (SH) in this study showed high success rate (98.9%), lower morbidity (1.1% need blood transfusion) and faster recovery comparing 24 hours postoperative activity to LAVH, LH, TLH, and AH. Operation can be done in nulliparous and uterus ≤ 18 weeks size[9,10] but should not larger than 16 weeks size because increased risk of bleeding and blood transfusion observed. The total cost that shown in this study did not included Ligasure® engine. They showed money that patients paid when discharging to home. We could not conclude that VH (SH) was the cheapest one in 3 routes because we did not compare other factors of the patients but had tendency to low. We should collect more data for future study. The only disposable instruments is the insulator of device that costs 2,500 baht/piece and can be re-sterilized and re-used in 5 cases (500 baht/case). This operation needs postgraduate training for sub specialist. So it is a alternative way of hysterectomy in some suitable institutes.

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บทคัดย่อ

การผ่าตัดมดลูกชนิดปราศจากแผลเป็นบนหน้าท้องผู้ป่วย ในกรณีที่มดลูกไม่หย่อนและไม่สงสัยมะเร็ง

เฉลิมพล อัศวธีรางกูร

กลุ่มงานสูติ-นรีเวชศาสตร์ โรงพยาบาลนพรัตนราชธานี กรมการแพทย์ กระทรวงสาธารณสุข

บทนำ: เพื่อแสดงให้เห็นว่า การผ่าตัดมดลูกชนิดปราศจากแผลเป็นบนหน้าท้องผู้ป่วย เป็นการผ่าตัดมดลูกแบบหนึ่ง ในผู้ป่วยที่มดลูกไม่หย่อนและไม่สงสัยว่าเป็นมะเร็งมดลูก การผ่าตัดชนิดนี้มีภาวะแทรกซ้อนต่ำ ผู้ป่วยฟื้นตัวเร็ว ไม่มีบาดแผลให้เห็น

วิธีการศึกษา: เป็นการศึกษาแบบพรรณนาไปข้างหน้าของผู้ป่วยที่รักษาในโรงพยาบาลนพรัตนราชธานี ระหว่างเดือนเมษายน พ.ศ. ๒๕๕๒ ถึงเดือนเมษายน พ.ศ. ๒๕๕๕ จากจำนวนผู้ป่วยหญิง ๙๐ คน ที่ต้องการตัดมดลูกเนื่องจากพยาธิสภาพชนิดไม่ใช่มะเร็ง โดยที่ไม่มีภาวะมดลูกหย่อนร่วมด้วย เทคนิคการผ่าตัดดัดแปลงจากปุโรหิต ราม กฤษณะ และมาชากิ เอนโดะ โดยการวัดผลความสำเร็จของการผ่าตัด ภาวะแทรกซ้อนที่เกิดขณะและหลังการผ่าตัด การเคลื่อนไหวหลังการผ่าตัด การกลับเข้าอยู่ในโรงพยาบาลหลังจากจำหน่ายผู้ป่วยกลับบ้านแล้ว

ผลการศึกษา: การผ่าตัดชนิดนี้ประสบความสำเร็จอย่างดีในผู้ป่วยทั้งหมด ๘๙ ราย (ร้อยละ ๙๘.๙) มี ๑ รายที่ต้องเปลี่ยนช่องทางการผ่าตัดเป็นการผ่าตัดเข้าทางหน้าท้อง เนื่องจากเป็นเนื้องอก leiomyoma ที่ broad ligament มี ๒๖ ราย (ร้อยละ ๒๙.๒) ที่ได้รับการตัดรังไข่และท่อนำไข่ออก ตามที่ผู้ป่วยต้องการ ไม่พบภาวะแทรกซ้อนจากการผ่าตัด ไม่พบการกลับเข้าอยู่ในโรงพยาบาลซ้ำ เคลื่อนไหวหลังผ่าตัดได้ดี

วิจารณ์ และ สรุปผลการศึกษา: ในผู้ป่วยที่มีพยาธิสภาพชนิดไม่ใช่มะเร็งของมดลูกและมดลูกไม่หย่อน ถ้าได้คัดสรรผู้ป่วยที่เหมาะสมแล้ว การผ่าตัดมดลูกชนิดปราศจากแผลเป็นบนหน้าท้องผู้ป่วยจะเป็นอีกทางเลือกหนึ่ง การผ่าตัดชนิดนี้ต้องการการฝึกฝนทักษะในการผ่าตัดมากพอสมควร แต่ให้ผลคุ้มค่าในแง่ของภาวะแทรกซ้อนที่น้อยกว่า ฟื้นตัวเร็ว ไม่มีบาดแผลให้เห็น

คำสำคัญ: การผ่าตัดมดลูกทางช่องคลอดในกรณีมดลูกไม่หย่อนและไม่สงสัยมะเร็งมดลูก, การผ่าตัดมดลูกชนิดปราศจากแผลเป็นบนหน้าท้องผู้ป่วย