Step by Step of Vaginal Hysterectomy in Managing Pelvic Organ Prolapse with Cervical Elongation: Case Report

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Abstract

The presence of cervical elongation in cases of pelvic organ prolapse is associated with an increased operative time, difficulty and higher rate of severe complication in performing vaginal hysterectomy. The length of the cervix may also be a factor in whether a uterine-sparing technique or a supracervical hysterectomy is offered rather than a total hysterectomy. Therefore, we present this case in order to add and expand the surgical reference in managing patients with uterine prolapse that is accompanied by cervical elongation. This is a case of 42-year-old woman who noted a mass from her vagina since a year ago, which was worse with valsala. Physical examination revealed a protruding mass outside of the hymen, uterine sondage was 10 cm, and Pelvic Organ Prolapse Quantification (POP-Q) measurement corresponded to grade 3 uterine prolapse, grade 2 cystocele, grade 2 rectocele and cervical elongation. Cervical length was 5.7 cm measured by transvaginal ultrasound. Classical total vaginal hysterectomy, bilateral salpingectomy, anterior colporrhaphy, colpoperineorrhaphy, and uterosacral ligament suspension was performed. Cervical elongation is associated with difficulty in anterior and posterior colpotomy steps during vaginal hysterectomy. The difficulty can be overcome with patience during the procedure. The surgical steps after dissecting vaginal mucosa and shifting bladder cranially is opening the posterior pouch of Douglas and vesicouterine fold, continued by dissecting uterosacral-cardinal ligaments, uterine vessels, round ligaments, proximal fallopian tubes and utero-ovarian ligaments. Although classical vaginal hysterectomy is more difficult and risky to perform in cases of uterine prolapse with cervical elongation, it remains safe and best management option by emphasizing patience during its steps. Understanding of the surgical steps and patience during the procedure is important to give a good outcome.

Keywords: Cervical elongation; Pelvic organ prolapse; Adequate; Vaginal hysterectomy steps; Surgical management; Case report.

Introduction

Pelvic Organ Prolapse (POP) is prolapse of one or more of the anterior or posterior vaginal walls, uterus (cervix), or vaginal vault (after hysterectomy). It is a common clinical condition in 40% of women aged over 45 and 50% of parous women [1].

Cervical elongation is clinically defined as the presence of cervical length of >3.38 cm or cervix to corpus ratio of > 0.79 [2]. While Ibeanu et al. defined it as a C-to-D distance of ≥ 8 cm in Pelvic Organ Prolapse Quantification (POP-Q) measurement [3]. Cervical elongation that accompanies uterine prolapse is associated with higher prolapse recurrence after uterine-sparing surgery, such as hysteropexy [6]. But, it is also associated with increased operative time, difficulty and complications in performing vaginal hysterectomy [7]. When comparing cervical amputation surgery and transvaginal hysterectomy, it was found that the rate of severe complication is significantly higher in the hysterectomy group. Those severe complications are intra-abdominal bleeding, severe intra-abdominal infection, ureteric injuries, bowel injuries, myocardial infarction, and severe anesthesia related complications [8].
Therefore, we present this successful case management without any complications, in order to add and expand the surgical reference and share our experience in managing patients with uterine prolapse that is accompanied by cervical elongation.

**Case Report**

A 42-year-old woman was referred to Urogynecology Outpatient Clinic of Doctor Cipto Mangunkusumo Central General Hospital with a chief complaint of protrusion mass coming out from her vagina since a year ago, which was worse with valsalva. No urinary or defecation complaint was reported. She has had tubectomy.

Physical examination revealed a mass that protrude outside of the hymen, uterine sondage was 10 cm, levator ani muscle tone and anal sphincter tone score were 3, with negative result in cough test, prolapse reduction test and urinary residual test. POP-Q measurement, as shown in figure 1 and table 1, correspond to stage 3 uterine prolapse, stage 2 cystocele, stage 2 rectocele and cervical elongation.

![Image](image1.png)

**Figure 1:** POP-Q examination.

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Transvaginal ultrasound revealed anteflexed uterus size 10.0 x 4.12 x 3.75 cm with cervical length 5.7 cm (figure 2), regular endometrium with endometrial thickness 8.5 mm, and no adnexal mass.
Figure 2: Cervical length examination using transvaginal ultrasound

Total vaginal hysterectomy, bilateral salpingectomy, anterior colporrhaphy, colposperineorrhaphy, and uterosacral ligament suspension was performed by an experienced Urogynecologist in Doctor Cipto Mangunkusumo Central General Hospital.

The surgical steps are as follows:

1. First, exteriorization of the uterus was performed. Epinephrine solution infiltration to vaginal mucosa was performed and continued by hydrodissection of anterior, lateral, posterior vaginal mucosa.

Figure 3a
2. Diamond incision on vaginal mucosa around cervix was performed.

Figure 3b

3. Vaginal mucosa dissected and peeled off, bladder shifted cranially.

Figure 3c

4. Posterior pouch of Douglas and vesicouterine fold was then opened.

Figure 3d
5. Bilateral complex uterosacral-cardinal ligaments were clamped, cut and sutured.

![Figure 3e](image)

6. Bilateral uterine vessels were clamped, cut and sutured.

![Figure 3f](image)

7. Bilateral round ligaments, proximal fallopian tubes and utero-ovarian ligaments were clamped, cut and sutured.
8. Bilateral salpingectomy was then performed.

9. Peritoneum closure was performed.

10. Dissection of pubocervical fascia until it was separated from vaginal mucosa.
11. Sutured Pubocervicalis fascia (multiple interrupted mattress sutures).

12. Uterosacral Ligament Suspension on vaginal vault.

13. Hydrodissection posterior vaginal mucosa continued by V incision of posterior vaginal mucosa.
14. Plicating the rectovaginal fascia.

15. Closure anterior to posterior vaginal mucosa.

16. Postoperative condition
Postoperative period was uneventful and patient was discharge in satisfactory condition. Histopathology result was in accordance with senile uterus in uterine prolapse. Three months later, the patient came to urogynecology clinic without any complaints.

Discussion

The surgical alternatives in managing uterine prolapse coexist with cervical elongation include Hedge’s modification of Forthergill, hysteropexy and vaginal hysterectomy. Hedge’s modification of Forthergill is recommended in isolated cervical elongation who desire uterine preservation [2]. A study by Ayhan et al reported that the procedure has a high degree of satisfaction and a low morbidity rate [3]. A study in 2019, that compared Manchester surgery and vaginal hysterectomy in the cases of uterine prolapse accompanied with cervical elongation, reported that the recurrence rate of pelvic organ prolapse and complication rate between the two groups were not statistically significant, with the Manchester surgery needed a shorter operation time compared to vaginal hysterectomy [4].

Hysteropexy is contraindicated in cases of uterine prolapse coexist with cervical elongation because of its high rate of prolapse recurrence [5,6,7]. Compared to hysterectomy, hysteropexy was found to have less blood loss, shorter operating time, and faster return to work. Other advantages of hysteropexy includes fertility sparing and natural timing of menopause. The disadvantages of hysteropexy includes lack of long-term prolapse repair outcomes and the need to continue surveillance for gynecological cancers [5].

In women with no fertility desire, vaginal hysterectomy remains best alternative. In such cases, uterine-sparing procedures such Hedge’s modification of Forthergill and hysteropexy, are not right choices. Furthermore, total vaginal hysterectomy is preferred over a uterine-sparing technique or a supracervical hysterectomy because of the length of the cervix in this case. [8].

Vaginal hysterectomy in cervical elongation is related to longer operation time and difficulty in anterior and posterior colpotomy steps and higher number of clamps that are applied to the sacrouterine and cardinal ligaments during the procedure [9]. The longer operation time and difficulty in anterior and posterior colpotomy steps can be overcome with patience during the procedure. Messingschlager et al. recommended surgical principles of vaginal hysterectomy with cervical elongation. First, continue to completely excise the vaginal attachments to the cervix. This will allow the uterus to begin to descend into the operative field and improve exposure/visualization. Two, as the cardinal ligament is reached, separate the leaves of the broad ligament to visualize the uterine vessels. Isolate the descending uterine branches at the 3 and 9 o’clock position. Three, continue to secure the uterine vessels laterally until the lower uterine segment is reached. Four, once the ascending branches of the uterine artery are isolated, the vesicouterine peritoneal fold can be approached from lateral to medial and anterior entry accomplished [10]. The surgical steps that was performed in this case is consistent with classical vaginal hysterectomy steps [11].

To prevent vaginal vault prolapse in the future, uterosacral ligament suspension and colpoperineorrhaphy were performed. Vaginal vault prolapse is a common disorder [12], especially if pre-existing pelvic floor defect is present prior to hysterectomy [13]. Suspension of the vaginal apex to the uterosacral ligaments (McCall culdoplasty) or to the sacrospinous ligaments at the time of vaginal hysterectomy is the main choice for prevention of vaginal vault prolapse [12]. The overall prolapse recurrence in any vaginal compartment, after a total hysterectomy with concurrent uterosacral ligament suspension based on a study by Rappa et al., was 20%, with a risk of recurrent surgery of 10% [14].

Conclusion

Managing pelvic organ prolapse that is accompanied by cervical elongation is challenging since uterine preservative surgery may have high risk of prolapse recurrence and vaginal hysterectomy was associated with increased operative time. The choice of surgical method is determined by factors such as the desire for fertility preservation, the risk of bleeding, the length of the cervix and recurrence risk of prolapse. Classical vaginal hysterectomy steps can be performed safely without any complications in cases of cervical elongation and pelvic organ prolapse with patience in each step.
Patient’s consent

Doctor Cipto Mangunkusumo Hospital (RSCM) is an educational hospital. All patients sign general consent that stated permission of using their medical data and pictures for research, education and publication.

Reference


