

CASE REPORT:**The outcome of Manchester operation in cervical elongation patients with pelvic organ prolapse at Dr. Soetomo Hospital, Surabaya from January 2015 to June 2017**

Mokhamad Anhar Dani^{1,2}, Azami Denas Azinar^{1*}, Eighty Mardiyah Kurniawati¹, Hari Paraton¹, Gatut Hardianto¹, Tri Hastono Setyo Hadi¹

¹Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Airlangga, Dr. Soetomo General Academy Hospital, Surabaya, Indonesia, ²HM Ansari Saleh General Hospital Banjarmasin, South Borneo Indonesia

ABSTRACT

Objectives: the aim of this study is to report the outcome of Manchester operation in cervical elongation patients with pelvic organ prolapse at Dr. Soetomo Hospital, Surabaya from January 2015 to June 2017.

Case Report: During January 2015 until June 2017 there were seven patients already performed Manchester operation, however only four patients routine control. In all four cases, three cases were obtained with cervical elongation with a pelvic organ prolapse (POP) and one case with cervical elongation. Perform evaluation before and after operation by using questionnaire and inspection of POP-Q system. During the evaluation there was one case with repeated lump complaints diagnosed with a uterine prolapse, while one of it was with a posterior compartment prolapse, but the patient did not complain during the evaluation. Both of these patients refused to reoperate after evaluation.

Conclusion: After Manchester operation in cervical elongation with POP had two cases with repeated prolapse. Questionnaires and POP-Q systems were used to diagnose and evaluate preoperative and postoperative Manchester.

Keywords: cervical elongation, prolapse, questionnaire, Manchester operation.

***Correspondence:** Azami Denas Azinar, Department of Obstetrics and Gynecology, Dr. Soetomo General Academy Hospital, Faculty of Medicine, Universitas Airlangga, Surabaya, Phone: +6281 23587784. E-mail : azamimd@gmail.com

ABSTRAK

Tujuan: tujuan dari penelitian ini adalah untuk melaporkan luaran pasca operasi Manchester pada penderita elongasi serviks dengan prolaps organ panggul di RSUD Dr Soetomo Surabaya pada periode Januari 2015 hingga Juni 2017.

Laporan Kasus: Selama periode Januari 2015 – Juni 2017 didapatkan tujuh pasien yang dilakukan tindakan operasi Manchester, namun hanya empat pasien yang kontrol rutin. Pada keempat kasus, didapatkan tiga kasus dengan elongasi serviks dengan prolaps organ panggul (POP) dan satu kasus dengan elongasi serviks. Dilakukan evaluasi sebelum dan sesudah operasi dengan menggunakan kuisioner dan pemeriksaan sistem POP-Q. Selama evaluasi di dapatkan satu kasus dengan keluhan benjolan berulang yang di diagnosis dengan prolaps uteri, sedangkan satu kasus lainnya dengan prolaps kompartemen posterior, namun pasien tidak mengeluhkan keluhan selama evaluasi. Kedua pasien ini menolak untuk tindakan operasi ulang setelah dilakukan evaluasi.

Simpulan: Pasca tindakan operasi Manchester pada kasus elongasi serviks dengan POP di dapatkan dua kasus dengan prolaps berulang. Kuisioner dan sistem POP-Q digunakan untuk diagnosis dan evaluasi pre operatif dan pasca operatif Manchester.

Kata kunci: Elongasi serviks, prolaps, kuisioner, operasi Manchester

INTRODUCTION

The definition, prevalence and classification of cervical elongation are not yet clearly understood even though they have already been registered in the International Classification of Diseases. Cervical elongation is a part of prolapse however this disease stands alone without descent of uterus and cystocele.^{1,2} Diagnosis of cervical elongation is established using Pelvic Organ Prolapse Quantification system (POP-Q), this evaluation system includes measuring the difference value between point C and point D in order to make the diagnosis of cervical elongation.^{1,3} Frequent complaints of this disease include feeling of weighing pressure on the back and vaginal lumps, which are similar as the complaints made in most patients with pelvic organ prolapse (POP).⁴

Previous research showed that out of 51 POP patients, 40% developed cervical elongation.⁵ POP is defined as descent in vaginal wall and/or uterus through vaginal introitus, which results from pelvic organs descending from their normal anatomic positions. Surgical management such as trans vaginal hysterectomy is an option in prolapse cases without cervical elongation, but it is not the right treatment for patients with prolapse accompanied with cervical elongation. For these cases Manchester technique is the more appropriate choice, by performing anterior and posterior colporrhaphy added with cervical amputation. Some studies had mentioned the advantages of this technique, such as: fast, efficient, lower blood loss rate and lower postoperative complications compared to trans vaginal hysterectomy.⁶⁻⁸

This case report will discuss post-operative outcome of Manchester operation in cervical elongation patients with pelvic organ prolapse at Dr. Soetomo Hospital, Surabaya from January 2015 to June 2017 which never been reported before.

CASE REPORT

After tracing the medical records, there were seven patients who received Manchester operation between the period of January 2015 to June 2017, these patients received a POP-Q examination before the surgery.

However only four patients were willing to attend a post-surgery check-up in Obstetric and Gynecology Clinic for a follow-up anamnesis and physical examination to determine differences in patients' complaints and anatomy before and after the surgery. Patients who came back for a check-up in the Obstetric and Gynecology Clinic were asked to fill out an approval form for re-examination and prolapse evaluation form that was being used by the Urogynecology Reconstruction Division of Obstetrics and Gynecology Department in Dr. Soetomo Hospital Surabaya since 2016 to evaluate post-surgical symptoms of the prolapse. The three other cases did not return for a post-surgery check-up. Those patients had been contacted and reminded to attend the check-up but they refused to do so.

DISCUSSION

From January 2015 to June 2017 there were 7 cases of cervical elongation which were treated surgically using the Manchester technique. Out of four patients who were willing to be re-examined, there was one case with preoperative diagnosis of cervical elongation, while the other three cases were diagnosed with cervical elongation accompanied with a descent in medial and posterior compartment which were grade I uterine prolapse and rectocele. Thus, posterior colporrhaphy surgery was performed (table 1).

Generally, about 40% women who experienced prolapse have cervical elongation which is related to the degree and severity of uterine prolapse. Cervix can experience elongation in supravaginal and infravaginal sections. Supravaginal elongation of the cervix is known better as uterine prolapse, meanwhile infravaginal prolapse can also occurs. Cervical elongation up to 10 cm is rarely found, if elongation occurs, the cervix will swell and experience hypertrophy.⁹ Previous literatures stated that cervical elongation was a part of prolapse, however risk factors of cervical elongation are still uncertain to this date whilst the pathophysiology of cervical elongation and organ prolapse are clearly different. In this case report, out of all cases, only three were found with risk factors related to prolapse, which were case I, II and III.

Table 1. Preoperative Diagnosis

Initials	Preoperative Diagnosis
Mrs. INA	Cervical elongation + grade I uterine prolapse + grade II rectocele
Mrs. M	Cervical elongation + grade I uterine prolapse
Mrs. S	Cervical elongation + grade II rectocele
Mrs. SM	Cervical elongation

Out of four patients, only one were diagnosed with cervical elongation only which was the fourth case. This patient had a history of one parity with a possible risk factor which was genetic, even before labor this patient was found to have a long cervix. Case I, II and III were diagnosed with cervical elongation accompanied with organ prolapse, patients in cases I and III had a history of labor by vacuum with an average birth weight of 2750 grams. All four cases had history of vaginal labor with average birth weight of 2916.66 grams (table 2).

Anamnesis showed that all four cases had a history of vaginal labor with a post labor perineum suture procedure, however the grade of perineum rupture was evaluated subjectively due to the data collection method that only consisted of anamnesis of patients' previous labor history (table 2). Patients from cases I, II, and III whom were diagnosed with cervical elongation accompanied with organ prolapse were recorded to be composed of 2 Javanese and one Balinese which was a native of Indonesia and a part of the Asian continent (table 3). Patient from the fourth case with cervical elongation was also a Javanese.

Age plays an important role in increasing the incidence of prolapse, about 100% risk of prolapse increases every decade until the age of seventy. Older age is associated

with the onset of menopause, however it is difficult to determine whether anatomic changes occur due to the increase of age or because the decrease of hormone function which is one of the key causes of the decline in supporting tissue. Pelvic organs, muscles and connective tissue are known to be very responsive to estrogen.^{10, 11} In this case report, the youngest age of the patient who underwent Manchester operation was 32 years old (case IV), while the oldest age was 52 years old (case I). All four patients had normal menstrual cycle after the Manchester operation ranging from 5 to 7 days, but there was one other case whom the patient had not menstruated for nine months. This patient was a 46 years old lady who had been diagnosed with secondary amenorrhoea and was suspected of having pre-menopausal symptoms (table 3). The basis of this diagnosis was because this patient had normal menstruation every month before and after the surgery, but ultrasound examination showed that the patient's uterus had the impression of atrophy so was both of her ovaries. Characteristics of premenopausal symptoms begin with irregular menstrual cycles that continue for one year before the menstruation eventually stops. Reproductive age with decreased follicular activity happens to women aged 42 – 56 years old, or within an average of 47 years old, pre-menopause will last for four to seven years.¹²

Table 2. Risk factors of cervical elongation with pelvic organs prolapse (including age, parity, history of labor and infant's birth weight)

Case number	Initials	Age	Parity	History of labor and delivery	Infant birth weight (in grams)
I	Mrs. INA	52	P1011	I. Spontaneous abortion II. Vacuum extraction	2900 g
II	Mrs. M	46	P2002	I. Spontaneous II. Spontaneous	I. 3400 g II. 2400 g
III	Mrs. S	47	P2012	I. Spontaneous abortion II. Spontaneous III. Vacuum extraction	I. 3000 g II. 2600 g
IV	Mrs. SM	32	P1001	Spontaneous	3200 g

Table 3. Risk factors of cervical elongation with pelvic organs prolapse (including occupation, menstrual history, and native)

Case number	Initials	Occupation	Menstrual history	Body Mass Index (BMI)	Native
I	Mrs. INA	Housewife	February 2018	24,34	Balinese
II	Mrs. M	Merchant	June 2017	20,82	Javanese
III	Mrs. S	Housewife	April 12, 2018	31,18	Javanese
IV	Mrs. SM	Working at non-governmental company	March 26, 2018	26,43	Javanese

Out of all cases of cervical elongation accompanied with prolapse, 2 cases had normal BMI while one case had BMI value of 31.18 (obese class I), whereas case of cervical elongation had normal BMI values. Cervical elongation is a part of prolapse which complaints include the anatomic system and functions related to the genitourinary, gastrointestinal, and musculoskeletal systems. Prolapse rarely causes severe morbidity and mortality, but the presence of prolapse can reduce the quality of life. Women with mild to moderate prolapse rarely complain about the disorder. Therefore, examination and diagnosis of prolapse must be done carefully based on complaints, symptoms and impact of prolapse to daily life.¹²

Frequent complaints and symptoms found in patients with prolapse are vaginal lumps. Vaginal lump found in examination is a specific and sensitive symptom to establish the diagnosis of prolapse. Some patients also complained about feeling full around her pelvis or low back pain. In severe prolapse, patients usually complain of dyspareunia symptoms or difficulty of patients' partner to penetrate during sexual intercourse. Some patients also complain of vaginal bleeding caused by irritation to vaginal lump. Urinary symptoms often accompany the symptoms of prolapse, ranging from urinary incontinence, urinary obstruction, urinary urgency, urinary frequency to the most severe symptom which is urinary retention followed by upper kidney function disorder that manifests as pain and anuria. Other symptoms found in patients with prolapse include pelvic pain, defecation disorders (constipation, diarrhea, tenesmus and fecal incontinence), low back pain and dyspareunia.^{13,14} All four cases had the same complaint of vaginal lump that was felt during activity, defecation, urination or resting. Those patients were referred from local public health center, hospital and specialist's private practice.

All patients who went to the Urogynecology Reconstruction Division of Obstetrics and Gynecology Department in Dr. Soetomo Hospital Surabaya had a POP-Q examination before and after the Manchester surgery. If any abnormalities were found in the front or back compartment, colporrhaphy anterior or posterior would be performed. In these four cases, from the initial anamnesis, we got to know that these patients wished to maintain their uterus because they had plan to get pregnant again later on and to have an active sexual relationship with their partner, therefore the Manchester operation was chosen (table 4). Outcome of anterior and posterior colporrhaphy had higher failure rate due to the

lack of elasticity of the patient's body tissues, thus the tissues might not be able to support the prolapse in the front or back compartment properly. Although the use of synthetic materials could reduce the failure rate of anterior and posterior colporrhaphy using patient's body tissues themselves. Despite that, patients were generally quite satisfied and did not want a re-operation.¹⁵

Based on table 5, patient form case I experienced a vaginal lump before the surgery. Then a postoperative evaluation was done and the patient made no complaint. Result of physical examination was compared to POP-Q and post-surgical improvement of patient's anatomical structure was found. Eight months after surgery, the patient came back to the Obstetric and Gynecology Clinic with a complaint of slight vaginal bleeding, ultrasonography examination was performed and the result showed that the uterus was within normal limits with endometrium thickness of four centimeters. The patient was diagnosed with abnormal uterine bleeding, thus multilevel curettage was performed followed by pathology anatomic examination. The results showed that the patient had simple hyperplasia without atypia, meanwhile external curettage showed a result of endocervical polyp.

Meanwhile in case II, postoperative anamnesis showed a complaint of slight vaginal lump emerging after the surgery, evaluation using POP-Q system found point C (+1) which indicated a recurrence of cervical prolapse accompanied with a complaint of slight lump emerging when the patient lifted heavy objects 18 months after Manchester's surgery. The patient was advised to get re-operated if the complaint made her feel uncomfortable, but she refused to do so, therefore she was advised to continue getting check-up and evaluation every 3 months.

Reevaluation to case III showed that patient's complaint improved, whereas POP-Q examination found Ap and Bp points (+1), which showed that the patient had a recurrent posterior compartment prolapse 10 months after Manchester surgery and posterior colporrhaphy. But at the moment, the patient did not experience any symptoms. The patient was advised to receive posterior colporrhaphy again, but she refused to get the surgery because she did not experience any complaints. This patient was then advised to return for a check-up and reevaluation every three months.

Table 4. Risk factors of cervical elongation with pelvic organs prolapse (including age, marriage, and whether the patient is sexually active or not)

Initials	Age	Marriage history	Date of surgery	Sexually active
Mrs. INA	52	I. 2001-2012 (divorced) II. 2014-2016 (divorced)	March 18, 2015	No
Mrs. M	46	1992-2002 (divorced)	September 28, 2016	No
Mrs. S	47	I. 1990-2013 (death) II. 2014-now	May 31, 2017	Yes
Mrs. SM	32	I. 2001-2010 (divorced) II. 2016-now	June 13, 2017	Yes

Table 5. Pre and postoperative complaints

Initials	Preoperative complaints	Treatment	Postoperative complaints
Mrs. INA	Vaginal lump (+)	Manchester procedure + colporrhaphy posterior	No complaint
Mrs. M	Vaginal lump (+)	Manchester procedure + colporrhaphy posterior	Emerging lump from private area
Mrs. S	Vaginal lump (+)	Manchester procedure + colporrhaphy posterior	No complaint
Mrs. SM	Vaginal lump (+)	Manchester procedure	Pain in the first day of menstruation

Unlubigin's research stated that the recurrence rate of uterine prolapse after the Manchester procedure was 2.04% meanwhile the recurrence rate of prolapse of the vaginal apex after vaginal hysterectomy was 6.6%. Another complication of the Manchester operation was cervical stenosis, which causes hematometra or suspicion of endometrial cancer symptoms. In this Unlubigin study, no symptoms were found after reevaluation 5 years after the surgery.¹⁶

Cases I, II and III were diagnosed with cervical elongation with pelvic organ prolapse in the form of a rectocele which was established before surgery. Additional treatment besides Manchester surgery to these cases was posterior colporrhaphy. The posterior compartment defects arose from the abnormalities in rectovaginal connective tissue that bound to the pelvis. Correction to this defect was done using the posterior colporrhaphy procedure which began by folding the middle connective tissue or the rectovaginal tissue at rest. The intention of this posterior colporrhaphy was to improve the symptoms associated with the anatomic abnormalities.¹⁷

Before the surgery, the patients in case IV complained of pain on the first day of menstruation which radiated from the lower abdomen to the back, the patient also experienced difficulty in doing activities because of the pain. This complaint was experienced by patient five months after the surgery although ultrasonography evaluation did not find any pathological structure. The patient was diagnosed with endometriosis and treated with dienogest once a day which is a 19-nortestosterone derivative. This dienogest therapy was evaluated monthly.

Preoperative screening using conventional cytology examination such as papsmear is done in order to determine whether the cervical prolapse is benign or malignant. Several meta-analysis researches from 1995 to April 2012 stated that papsmear was useful for identifying precancerous cells, allowing us to detect the development of cervical cancer early, thus enabling early treatment. The purpose of screening was to reduce the number of deaths from cervical cancer as explained from several previous studies.¹⁸

Meanwhile this procedure included a simple vaginal wab performed preoperatively. During the preparation for surgery, vaginal swab and papsmear were done only in case III, meanwhile case II was only being examined for vaginal swabs. Cases I and IV did not receive any vaginal swab nor papsmear before surgery (table 6). These four patients were discharged from the hospital without any symptoms and complaints after two days of postoperative care.

One of the options for treating prolapse while still maintaining the uterus is Manchester operation. But, only a few literatures explain about this method. The purpose of this method is to treat patients with cervical elongation and intact uterosacral-cardinal ligaments.^{7,19} The advantage of this surgery is that there is no necessity to enter the peritoneal cavity, so it needs shorter time thus decreasing the morbidity in the healing process. For this reason, the Manchester operation is ideal for older women without uterine abnormalities. Young women who wish to maintain their fertility can also be considered for this surgery because it corrects uterine prolapse while still maintaining the uterus.⁷

A meta-analysis study by Meriwether compared the Manchester operation to trans vaginal hysterectomy, the study obtained that the Manchester procedure was faster in time, (difference of -33.7 minutes, 95% CI 0.19-0.90) with smaller risk of bleeding (difference of 103.6 ml, 95% CI 63.8-143.3 ml), but the two had the same value

for the length of postoperative care in hospital (difference of 0 days, 95% CI -0.56 -0.56 days). A postoperative evaluation using POP-Q system found that the genital hiatus was smaller with the Manchester procedure and the perineal body was significantly larger. In both of these surgeries there was no difference in the symptoms of prolapse (RR 0.42, 95% CI 0.15-1.15, p = 0.09).²⁰ The uterus had a passive role in uterine prolapse, therefore if a hysterectomy was performed, it would disrupt the local nerves supply at the base of the fascia, thus causing an interfere in the anatomical relationship of the pelvic organs. Other than that, hysterectomy might also cause disrupt in voiding and defecation.¹⁶

In this case report, Manchester surgery duration was around 75 minutes, whereas if accompanied by posterior colporrhaphy surgery the average became 70.6 minutes (table 7). The Manchester surgery performed in Dr. Soetomo Hospital Surabaya was faster compared to those carried out in Rouzi's study which reported seven retrospective cases of women with prolapse who underwent Manchester procedure at King Abdul Aziz University in Jeddah, Saudi Arabia. All of these women were multiparous (para 3 ± 1) and refused to undergo hysterectomy because they still wished to become pregnant. The duration of Manchester operation was 119 ± 16 minutes. There were no surgical complications and all of these women were satisfied with the surgery. Two of these women later became pregnant and successfully delivered the babies normally.⁷

Table 6. Result of preoperative pathology anatomy examination (papsmear) on patients with cervical elongation and pelvic organ prolapse

Case number	Initials	Result of pathology anatomy examination	Vaginal swab result
I	Mrs. INA	Examination was not performed	Examination was not performed
II	Mrs. M	Examination was not performed	- Vaginitis candida was not found - Vaginitis neisseria was not found - Vaginitis streptococcus/staphylococcus was not found - Intermediate bacterial vaginosis was found
III	Mrs. S	<i>Papaniculou class II</i>	- Vaginitis candida was not found - Vaginitis neisseria was not found - Vaginitis streptococcus/staphylococcus was not found - Intermediate bacterial vaginosis was found
IV	Mrs. SM	Examination was not performed	Examination was not performed

Table 7. Type of the anesthesia used and duration of Manchester operation

Case number	Initials	Treatment	Type of anesthesia	Duration of surgery
I	Mrs. INA	Manchester procedure + colporrhaphy posterior	General anesthesia	75 minutes
II	Mrs. M	Manchester procedure + colporrhaphy posterior	Regional anesthesia	70 minutes
III	Mrs. S	Manchester procedure + colporrhaphy posterior	Regional anesthesia	67 minutes
IV	Mrs. SM	Manchester procedure	Regional anesthesia	75 minutes

In the four cases of this report, POP-Q examinations and questionnaires that had been used as a standard for examining prolapse symptoms in the the Urogynecology Reconstruction Division of Obstetrics and Gynecology Department in Dr. Soetomo Hospital Surabaya were proven to be able to assess the results of Manchester surgery outcomes. The questionnaires consisted of PFDI-20 that was being used to check the level of urination, bowel movements and impact of the vaginal lumps to daily living. The ICIQ-UI-SF questionnaire was used to detect the presence of stress type urinary incontinence and rule out the urgency type of urinary incontinence, meanwhile FSFI the questionnaire was used to assess whether the pelvic organ prolapse decreased the quality of patients' sexual life. Questionnaires examination (PFDI-20, ICIQ-UI-SF, OABSS and FSFI) before and after surgery allowed us to compare POP complaints before and after the procedure.

CONCLUSION

There is no consensus to explain the definition or technique used for identifying cervical elongation, but cervical elongation is part of prolapse. Complaints and symptoms of prolapse are almost the same as complaints and symptoms of cervical elongation, therefore careful history taking and physical examination are needed to diagnose cervical elongation. The PFDI20, ICIQ-SF, OABSS, FSFI questionnaires and POP-Q systems are used as a tool to diagnose and evaluate cervical elongation before and after surgery. Manchester operation is a surgical treatment option for patients with cervical elongation with the advantage of being faster, more efficient and has smaller risk of blood loss compared to hysterectomy.

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