Case Report

Vault prolapse cases in Dr. Soetomo general hospital Surabaya

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1. Introduction

Based on epidemiology data, vault prolapse is often occurred after hysterectomy procedure, and sometimes need a surgical repair. The prevalence of post-hysterectomy vault prolapse ranges from 0.2 to 43%.1 However, not all women with vault prolapse require surgery. A large-scale study in Austria reported that out of 7,645 hysterectomy procedures, 577 cases of vault prolapse were found, those who were estimated to require surgical repair were 6-8%.2

2. Materials and Methods

The data in this case report were obtained through medical records and register books from Urogynecology Division of Obstetrics and Gynecology Department, Soetomo General Hospital during 2015-2019. From these data, an overview of the operating modalities for vault prolapse repair performed at our teaching hospital, Dr. Soetomo General Hospital were carried out.

3. Results and Discussion

3.1. Characteristics of vault prolapse patients at RSUD Dr. Soetomo in 2015-2019

Most of the patients who come to the urogynecology clinic and are diagnosed with vaginal stomp prolapse or cervical stomp prolapse or vault prolapse are patients from another hospital.

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### Table 1: Patient data with vault prolapse at Dr. Soetomo General Hospital

| No. | Case          | (Complain) | (Physical examination) | Assessment | Procedures                      |
|-----|---------------|------------|------------------------|------------|---------------------------------|
| 1.  | Mrs. ALM      | Lump from the vagina | Inspekulo (Gynecologic Examination): | Cervical stomp prolapse + Grade III Cystocele + Post SVH for uterine prolapse + Euthyroid phase hyperthyroidism | Transvaginal Trachelectomy + anterior and posterior colporrhaphy |
|     | 52 y.o        |            | A slippery portio, good stomp suture, mass came out from anterior vaginal wall |            |                                 |
|     | Parity 2102   |            |                        |            |                                 |
|     | Youngest child: 22 y.o | |                        |            |                                 |
|     |               |            |                        | Mass came out from anterior vagina which was 4x4 cm, closed |                                 |
|     |               |            |                        | - smooth portio |                                 |
|     |               |            |                        | Aa +3 Ba +2 C +3 |                                 |
|     |               |            |                        | GH 4 Pb 3 TVL 6 |                                 |
|     |               |            |                        | Vaginal toucher |                                 |
|     |               |            | Operation History: Post SVH for uterine prolapse indication in 3 years previously | Grade III vaginal stomp prolapse + Post TAH-BSO for vaginal grade IV uterine prolaps + Grade III rectocele + Grade I cystocele + Nonsexual active |                                 |
|     |               |            | Mass came out from the vagina – which was about 5x5 cm | POP Q: |                                 |
|     |               |            |                        | Aa -1 Ba -2 C +5 |                                 |
|     |               |            |                        | GH 4 Pb 3 TVL 8 |                                 |
| 2.  | Mrs. HAS      | Lump from the vagina | Inspekulo (Gynecologic Examination): | Cervical stomp prolapse + Grade III Cystocele + Post SVH for uterine prolapse + Euthyroid phase hyperthyroidism | Transvaginal Trachelectomy + anterior and posterior colporrhaphy |
|     | 58 y.o        |            | A slippery portio, good stomp suture, mass came out from anterior vaginal wall |            |                                 |
|     | Parity 7005   |            |                        |            |                                 |
|     | Youngest child: 14 years | |                        |            |                                 |
|     |               |            | Mass came out from anterior vagina which was 4x4 cm, closed | Vaginal toucher: |                                 |
|     |               |            | - smooth portio | Operation History: Post TAH BSO for grade IV uterine prolapse in 1 year previously |                                 |
|     |               |            | Aa +3 Ba +2 C +3 | Mass came out from posterior vaginal wall + vaginal stomp, good stomp suture |                                 |
|     |               |            | GH 4 Pb 3 TVL 6 | Vaginal toucher: |                                 |
|     | Married 1x: 32 years | |                        | Operation History: Post TAH BSO for grade IV uterine prolapse in 1 year previously |                                 |
|     | Contraception history: - | |                        | Mass came out from the vagina – which was about 5x5 cm |                                 |
|     | Sexual activity: active | |                        | POP Q: |                                 |
|     | Contraception history: - | |                        | Aa -1 Ba -2 C +5 |                                 |
|     | Sexual activity: not active | |                        | GH 4 Pb 3 TVL 8 |                                 |
|     | Sexual activity: not active | |                        | AP +2 Bp +3 D - |                                 |
| No | Name   | Age | Parity | Youngest child | Presentation | Gynecologic Examination | Operation History | POP Q | Contraception History | Sexual Activity | Operation | Stomach Stump Protrusion | Location | Operation |
|----|--------|-----|--------|----------------|--------------|--------------------------|-------------------|-------|----------------------|----------------|------------|-------------------------|----------|------------|
| 3  | Mrs. HAR | 50  | 2002   | 20 y.o         | Lump from the vagina | Mass came out from the vagina, good stomp suture | Vaginal toucher: Mass came out from the vaginal stomp, anterior + posterior wall of the vagina | POP Q: Aa +3 Ba +3 C + 3 | GH 4 Pb 3 TVL 6 AP +3 Bp +3 D - | Married 1x à 25 years Contraception history: 3 months injection Sexual activity: active | Operation History: Post TAH-BSO for uterine prolapse in 1 year previously |
| 4  | Mrs. NAI | 53  | 6006   | 14 y.o         | Lump from the vagina | Mass came out from the vagina, good stomp suture | Vaginal toucher: Mass came out from the vaginal stomp, anterior + posterior wall of the vagina | POP Q: Aa +3 Ba +4 C +4 GH 5 Pb 3 TVL 7 AP +3 Bp +6 D - | Grade III vaginal stoma prolapse + Post TAH-BSO for uterine prolapse + Grade III cystocele + Grade IV rectocele | Married: 1x à 16 years Contraception history: Sexual activity: active |
| 5  | Mrs. NIK | 58  | 4004   | 22 y.o         | Lump came out of the vagina | Mass came out from the vagina, good stomp suture | Vaginal stoma prolapse + Post TAH-BSO for uterine prolapse + Grade III cystocele + Grade II rectocele | Sacrospinous fixation + anterior and posterior colporrhaphy | Grade III vaginal stoma prolapse + Post TAH-BSO for uterine prolapse + Grade III cystocele + Grade IV rectocele | Sacrospinous fixation + anterior and posterior colporrhaphy |

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| Married: 1x à 42 years | Operation History: Post TAH-BSO for uterine prolapse in 3 years previously | Vaginal toucher: Mass came out from the vaginal stomp, anterior + posterior wall of the vagina | POP Q: Aa +3 Ba +3 C +2 |
|------------------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|-----------------------------|
| Contraception: injection 3 monthly |                                                                                 | PO P Q: Aa +3 Ba +5 C +4 GH 3 Pb 2 TVL 7 AP +3 Bp +4 D - | Grade III vaginal stomp prolapse + Post TAH-BSO for uterine prolapse + Grade IV cystocele + Grade III rectocele |
| Sexual activity: active |                                                                                   | GH 4,5 Pb 2,5 TVL 6 AP +1 Bp +1 D - | Colpoceles |
| 6 Mrs. ROS | Lump from the vagina Inspekulo (Gynecologic Examination): Mass came out from the vagina, vaginal stomp was good | Grade III vaginal stomp prolapse + Post TAH-BSO for uterine prolapse + Grade IV cystocele + Grade III rectocele |
| 51 y.o | Sexual activity: active | | |
| Parity 2002 | | | |
| Youngest child: 17 years | | | |
| Married 2x: | Operation History: TAH-BSO for uterine prolapse in 7 years previously | Vaginal toucher: Mass came out from the vagina | |
| POP-Q: Aa +3 Ba +5 C +4 GH 3 Pb 2 TVL 7 AP +3 Bp +4 D - | Grade I cervical stomp prolapse + Post SVH for uterine prolapse + Grade IV cystocele | Sacrospinous fixation + anterior and posterior colporrhaphy |
| 1. 1990-1991 | Lump from the vagina, difficult urinating (dysuria) Inspekulo (Gynecologic Examination): a slippery portio, a mass came out from the anterior vagina | Vaginal toucher: Mass came out from the anterior wall of the vagina | |
| 2. 1990-2013 | Sexual activity: not active | | |
| Parity 5015 | Operation History: Post SVH for uterine prolapse in 2 years previously | POP-Q: Aa +3 Ba +5 C –2 | |
| Youngest child: 29 y.o | | | |
| Married 1x à 47 years | | | |
| Contraception history: Injection 3 monthly | | | |

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| Case No. | Name   | Age   | Parity | Youngest Child | Contraception History | Sexual Activity | Operation History | POP-Q | Findings and Treatment |
|---------|--------|-------|--------|----------------|-----------------------|----------------|------------------|-------|------------------------|
| 8       | Mrs. UMU | 59 y.o | 2002   | 27 y.o        | 3 months injection    | Not active     | Post TAH-BSO for uterine prolapse in 4 years previously | Aa +3 Ba +4 C +5 | Grade IV vaginal stomp prolapse + Post TAH BSO for uterine prolapse + grade IV cystocele + grade III rectocele |
| 9       | Mrs. PUJ | 64 y.o | 4004   | 28 y.o        | Aa +2 Ba +3 C +1      | Active        | Supravaginal hysterectomy- bilateral salpingo-oophorectomy for uterine prolapse in 5 years previously | GH 5 Pb 3 TVL 6 | Grade II cervical stomp prolapse + Post SVH-BSO for uterine prolapse + Grade III cystocele |

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| No. | Name   | Age  | Parity | Youngest child | Symptom | Inspekulo (Gynecologic Examination): | Operation History: | Contraception history: | POP-Q: | Sexual activity: | Operation History: | Contraception history: |
|-----|--------|------|--------|----------------|---------|--------------------------------------|--------------------|------------------------|--------|-----------------|--------------------|------------------------|
| 10  | Mrs. RIA | 68 y.o | 8018   | 27 years       | Lump from the vagina | A spongy portio, a mass came out from the posterior vagina | SVH-BSO for uterine prolapse + adenomyosis in 1 years previously | - Aa -3 Ba -3 C +4 | GH 5 Pb 3 TVL 7 | A mass came out from posterior vagina, good stomp suture | TVH for uterine prolapse + adenomyosis | - Aa +3 Ba +5 C +6 |
|     | Married 1x à 49 years | | | | Vaginal toucher: | Prolapse vaginal stomp + Post TVH for uterine prolapse + Grade IV cystocele + Nonsexual active | Partial colpopexy + posterior colporrhaphy |
| 11  | Mrs. JUL | 62 y.o | 2002   | 25 y.o         | Lump from the vagina, painful urinating (dysuria) | A mass came out from the anterior wall of the vagina + vaginal stomp + 7 cm | TVH for uterine prolapse in 1 years previously | - Aa +3 Ba +5 C +6 | GH 6 Pb 2 TVL 6 | A mass came out from the anterior wall + vaginal stomp | TVH for uterine prolapse + adenomyosis | - Aa +3 Ba +5 C +6 |
|     | Married 1x à 25 years | | | | Vaginal toucher: | Prolapse vaginal stomp + Post TVH for uterine prolapse + Grade IV cystocele + Nonsexual active | Partial colpopexy + posterior colporrhaphy |
|     | Contraception history: 3 months injection | | | | POP-Q: | | | | |
| 12  | Mrs. TRA | 83 y.o | 16-009 | 43 years       | Lump from the vagina | A mass came out from the anterior + posterior wall of the vagina, and vaginal stomp, good stomp suture | Transvaginal hysterectomy for uterine prolapse in 6 years previously | - Aa +3 Ba +5 C +6 | GH 6 Pb 2 TVL 6 | A mass came out from the anterior + posterior wall + vaginal stomp + 7 cm | TVH for uterine prolapse + adenomyosis | - Aa +3 Ba +5 C +6 |
|     | Youngest child: 43 years | | | | Vaginal toucher: | Grade IV vaginal stomp prolapse + Post TVH for uterine prolapse + Grade IV cystocele + Grade IV rectocele | Colpocleisis |

Continued on next page
| Married 1x à 43 years | Married 1x à 43 years | A mass came out from the anterior wall + the posterior wall of the vagina, vaginal stomp POP-Q: Aa +3 Ba +4 C +4 GH 4 Pb 3,5 TVL 5 AP +3 Bp +4 D - |
|----------------------|----------------------|-------------------------------------------------------------------------------------------------|
| Contraception history: - | Sexual activity: not active |
| 13 Mrs. JUW | Lump from the vagina, difficult urinating (dysuria) | Inspekulo (Gynecologic Examination): A mass came out from the anterior wall of the vagina + vaginal stomp, good stomp suture Vaginal toucher: Prolapse vaginal stomp + Post TVH for uterine prolapse + Grade III cystocele Sacrospinous fixation + anterior and posterior colporrhaphy |
| 63 y.o | Parity 6006 | Youngest child: 33 years |
| Married 1x à 51 years | Operation History: Post TVH for uterine prolapse in 4 years previously | A mass came out from anterior vaginal wall + vaginal stomp |
| Contraception history: - | Sexual activity: not active |
| 14 Mrs. SUM | Lump from the vagina | Inspekulo (Gynecologic Examination): A mass came out from anterior and posterior vaginal wall, the vaginal stomp comes out of the vaginal introitus Vaginal toucher: Grade IV vaginal stomp prolapse + Post TVH for uterine prolapse + Grade II cystocele + Grade III rectocele Le Fort Colpocleisis |
| 52 y.o | Parity 6015 | Youngest child: 22 y.o |
| Married 2x: | Operation History: Post TVH for uterine prolapse in 1 year previously | |
| 1.1985-2012 | | |
| 2. 2012-3 years (husband died | Contraception history: - |
| | Sexual activity: Not active |
| | POP-Q: Aa +1 Ba 0 C +5 GH 4 Pb 3 TVL 6 AP +3 Bp +2 D - |
| No. | Patient Name | Age | Parity | Youngest Child | Symptoms | Diagnosis | Treatment | Medical History | Complications | Outcome |
|-----|--------------|-----|--------|---------------|----------|-----------|------------|----------------|---------------|---------|
| 15  | Mrs. SUN     | 62  | Parity 2002 | Youngest child: 34 years | Lump from the vagina | Inspekulo (Gynecologic Examination): A mass came out from the anterior + posterior vaginal wall, vaginal stomp, good stomp suture | Prolapse vaginal stomp + Post TVH for uterine prolapse + Grade IV cystocele + Grade III rectocele | Operation History: Post TVH for uterine prolapse in 2 years previously | Vaginal toucher: A mass came out from the anterior + posterior vaginal wall + vaginal stomp | Anterior and posterior colporrhaphy |
|     |              |     |         |               |          | | | | POP-Q: Aa +3 Ba +3 C +1 | | |
|     |              |     |         |               |          | | | | GH 5 Pb 3 TVL 7 AP +3 Bp +3 D - | | |
|     | Married 1x à 1980-1997 (husband died) | | | | | | | | | |
|     | Contraception: injection 3 monthly | | | | | | | | | |
|     | Sexual activity: Not active | | | | | | | | | |
| 16  | Mrs. AMA     | 60  | Parity 4004 | Youngest child: 34 y.o | Lump from the vagina | Inspekulo (Gynecologic Examination): A mass came out from anterior + posterior vaginal wall, vaginal stomp, good stomp suture | Grade IV vaginal stomp prolapse + Post TVH for uterine prolapse + Grade IV cystocele + Grade III rectocele | Operation History: Post TVH for uterine prolapse in 1 year previously | Vaginal toucher: A mass came out from anterior + posterior vaginal wall, vaginal stomp | Sacrospinous fixation + anterior and posterior colporrhaphy |
|     |              |     |         |               |          | | | | | | | | GH 5 Pb 2 TVL 6 AP +3 Bp +2 D - | | |
Most patients have complaints of recurrent lumps and complaints of urinary disorders. In 2015-2019, the total number of cases of transvaginal hysterectomy (TVH) surgery in Dr. Soetomo General Hospital were 187 cases. In 2015-2019 there were 16 patients diagnosed with vault prolapse with a preoperative diagnosis of uterine prolapse (16 cases). Of the 16 cases of vault prolapse, 10 cases (62.50%) were post transabdominal hysterectomy procedure, and 6 cases (37.5%) were post transvaginal hysterectomy procedure, the distribution of cases in some hospital such as Dr. Soetomo General Hospital (3 cases), another cases performed outside Dr. Soetomo General Hospital. Describe in Table 1.

Of the 10 cases that were performed transabdominal surgery, 4 patients (40%) had suffered vault prolapse in the same year as the surgery, while the mean time of recurrence was 3.5 years. Of the 6 cases that were performed transvaginal surgery, 3 patients (50%) had suffered vault prolapse in the same year as the surgery and the mean time of vault prolapse incidence was 1 years.

From the patient characteristics that were suspected to be associated with risk factors for recurrence, it was found that the post-transabdominal hysterectomy vault prolapse case had an average age of 52.3 years, an average parity of 4, and an average BMI of 32. From the characteristics of post-transvaginal hysterectomy vault prolapse patients, they had an average age of 63.66 years, an average parity of 6, and an average BMI of 27.48.

4. Vault prolapse diagnosis

The assessment of women with symptoms of prolapse after hysterectomy should include a physical examination and a fundamental prior history. Current recommendations for objective assessment of vaginal support include the use of the Pelvic Organ Prolapse Quantification (POP-Q) system. Determination of apical prolapse or vault prolapse is done by measuring the location, relative to hymen with hysterectomy scar (point C) during maximal valsalsva maneuver and/or traction during examination. As described, apical prolapse is often associated with more severe anterior or posterior compartment prolapse, so it is important to identify this in order to formulate an appropriate reparations strategy.

In our urogynecology outpatient clinic, we diagnosed vault prolapse based on history taking dan physical examination. The most important from history taking are about chief complaint such as lump came out from her vagina and any complaint related cystocele and rectocele, and her sexual activity. In physical examination, we used inspekulo, vaginal tocher and POP-Q to evaluate vault prolapse’s grade or severity and evaluate if the vault prolapse including anterior or posterior compartment. As a noted, in our hospital we used terminology vault prolapse with “stomp prolaps” or “apical prolapse”.

After diagnosed the patient, this data was discussed in urogynecology department of obstetrics and gynecology to make consideration about the preparation of the second operation and what technique that appropriate for the patient.

| Characteristics | %    |
|-----------------|------|
| Age             |      |
| < 60 years-old  | 6    |
| > 60 years-old  | 10   |
| Parity          |      |
| 0               | 0    |
| 1-2             | 5    |
| ≥ 3             | 11   |
| Number of Vaginal Deliveries |      |
| 0               | 0    |
| 1-2             | 5    |
| ≥ 3             | 11   |
| Body Mass Index |      |
| Underweight (< 18.5) | 0 |
| Normal (18.5-24.99) | 7 |
| Overweight (> 25-29.99) | 8 |
| Obesity (> 30) | 1    |
| Referral Status |      |
| By reference    | 16   |
| Come on their own accord (w/o reference) | 0 |
| Race            |      |
| Javanese        | 13   |
| Madurese        | 3    |
| Others          | 0    |
| Education       |      |
| Elementary/Primary School | 7 |
| Junior High     | 3    |
| High school     | 5    |
| University      | 1    |
| Profession/Occupation |      |
| Housewife       | 12   |
| Traders         | 4    |
| Previous Operation Techniques |      |
| Supravaginal hysterectomy | 4 |
| Total abdominal hysterectomy | 6 |
| Transvaginal hysterectomy | 6 |
| Recurrence After Post Vault Prolapse Correction (second reccurrence) |      |
| Yes | 2 | 5.88 |
| No  | 15 | 88.23 |
5. Vault Prolapse Management

Procedure of vault prolapse is broadly divided into conservative and operative procedures. Conservative procedure includes pelvic floor exercises, stamping and pessaries placement. The role of this conservative procedure is unclear and there is still no evidence that pelvic floor muscle training is useful. However, pessaries may have limited benefits in patients who fear surgery and in very old women where surgery is not an option.

Guidelines for determining surgery in cases of vault prolapse have almost the same principles in cases of genital organ prolapse which are planned for vaginal surgery. It is important to ask whether the woman (patient) is sexually active before considering vaginal surgery, as this can change surgery options. Another factor that influences the choice of surgery is patient suitability and surgeon preference.

In our hospital, we performed various procedure for vault prolapse correction procedure such as transvaginal trachelectomy, colpocleisis, sacrospinous fixation. We gave information to the patient about the procedure, advantage and disadvantage and the chance of after the procedure.

Of the 10 cases of post-transabdominal hysterectomy vault prolapse, reoperation was performed at Dr. Soetomo General Hospital with various procedures; transvaginal trachelectomy + anterior and posterior colporrhaphy (2 cases), colpocleisis (2 cases), and sacrospinous fixation + anterior and posterior colporrhaphy (6 cases). There was 1 case after got vault prolapse correction procedure with sacrospinous fixation + anterior and posterior colporrhaphy procedure had recurred again and then reoperated with trachelectomy + anterior and posterior colporrhaphy + sacrospinous fixation procedure in Dr. Soetomo General Hospital.

Of the 6 cases of post transvaginal hysterectomy vault prolapse, reoperation was performed with various procedures; colpocleisis (2 cases), Partial colpocyte + posterior colporrhaphy (1 case), sacrospinous fixation + anterior and posterior colporrhaphy (2 case), and anterior and posterior colporrhaphy (1 case). There was 1 case of post sacrospinous fixation + anterior and posterior colporrhaphy had recurred again recurred again and was performed correction with another sacrospinous fixation + anterior and posterior colporrhaphy operation in Dr. Soetomo General Hospital.

After the operation, patients are communicated, informed, and educated to avoid risk factors associated with ‘relapse’ such as to avoid heavy lifting activities and sexual intercourse for 6-8 weeks. From a total of 16 cases of vault prolapse that were reoperated with various procedures, the surgery success rate was 87.5%.

6. Conclusion

At Dr. Soetomo General Hospital, the number of cases vault prolapse post transabdominal and transvaginal surgeries has a similar percentage of cases. Various corrective action procedures were re-performed by the Urogynecology Division of Obstetrics and Gynecology, Dr. Soetomo General Hospital with good result.

7. Source of Funding

None.

8. Conflict of Interest

The authors declare that there is no conflict of interest.

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