

## Manual Vacuum Aspiration in IUFD 18 Weeks

*Aspirasi Vakum Manual pada IUFD 18 Minggu*

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**Abstract:** Manual Vacuum Aspiration (MVA) is an action to evacuate the uterine cavity up to 14 weeks gestation. In a more extensive pregnancy, it is worried that the action of the MVA is less clean so that it will still repeat the action of sharp curettage. This article reports a multigravida aged 42 years old, G5P2A2, intrauterine fetal death (IUFD) at 18 weeks, undergoing MVA. Diagnosis of IUFD was performed using ultrasound examination. Before MVA was done, the patient was previously given 100 µg of misoprostol orally for dilation. This pregnancy was the third pregnancy with a second husband, all of whom had abortions. Manual Vacuum Aspiration had a minimal risk of uterine injury. After MVA was conducted, ultrasound examination was repeated to confirm a clean uterine cavity. It had been carried out on an indication of IUFD of 18 weeks gestation with the result of a clean uterine cavity and minimal bleeding. Furthermore, Post-Abortion Intra-Uterine Device (PAIUD) was installed adequately, not causing complaints. Based on the result, it can be concluded that MVA is effective for evacuation of uterine cavities on 18 weeks gestation.

**Keywords:** multigravida; manual vacuum aspiration; intrauterine fetal death

**Abstrak:** Aspirasi vakum manual (AVM) merupakan tindakan untuk evakuasi kavum uteri hingga usia kehamilan 14 minggu. Oleh karena pada kehamilan yang lebih besar dikhawatirkan tindakan AVM kurang bersih, sehingga masih menimbulkan gejala sisa berupa perdarahan, yang mungkin harus diulang dengan tindakan kuretase tajam. Artikel ini menyampaikan case report seorang multigravida berusia 42 tahun, G5P2A2 hamil 18 minggu dengan intra uterine fetal death (IUFD), yang menjalani AVM untuk evakuasi kavum uteri. Diagnosis IUFD dengan menggunakan pemeriksaan Ultra Sono Grafi (USG). Sebelum tindakan AVM diberikan misoprostol 100 µg per oral untuk dilatasi. Kehamilan ini adalah kehamilan ketiga dengan suami kedua, yang semuanya abortus. AVM berisiko minimal terjadi perlukaan uterus. Setelah tindakan AVM, bersih tidaknya kavum uteri dievaluasi dengan menggunakan pemeriksaan USG. Sudah dilakukan AVM atas indikasi IUFD usia kehamilan 18 minggu dengan hasil kavum uteri bersih, perdarahan minimal, IUD paska abortus (IUDPA) yang dipasang terpasang dengan baik, tidak menimbulkan keluhan. Aspirasi Vakum Manual (AVM) efektif untuk tindakan evakuasi kavum uteri untuk usia kehamilan 18 minggu.

**Kata Kunci :** multigravida; aspirasi vakum manual; intra uterine fetal death

## INTRODUCTION

Manual Vacuum Aspiration (MVA) is an act of evacuation of the uterine cavity by vacuuming instead of being scraped off with a curettage spoon. This vacuuming action is expected not to damage the endometrial layer compared to evacuation using a curettage spoon. The expected long-term effect of vacuuming is no placental adhesions for the subsequent pregnancy. The use of MVA reduces the likelihood of symptomatic synechiae occurrences.<sup>1</sup> Therefore, the risk of the placenta sticking to its insertion, called placenta accreta, is a medical indication that increases the risk of morbidity and mortality in pregnant women.

Intrauterine Fetal Death (IUFD) is the condition of the death of the fetus in the womb because the fetal heart rate is no longer detected. Several factors causing fetal death, in this case, may be due to maternal age over 40 years.<sup>2</sup> IUFD conditions require immediate evacuation of the uterine cavity. The amount of gestational age of 18 weeks is measured as high as 3 fingers below the center. The amount of gestational age requires proper uterine cavity evacuation. Evacuation of the uterine cavity using MVA is indicated for the evacuation of the uterine cavity until 14 weeks gestation<sup>3</sup> or not more than 12 week's gestation.<sup>4</sup>

This paper is a case report about the evacuation of uterine cavities in IUFD cases at 18 weeks gestation using MVA preceded by administration of 100 µg misoprostol orally for dilation. This case is interesting as the respondents experienced 3x pregnancies, all of which experienced abortions. All three pregnancies were from a marriage with a second husband and had no children born healthy. AVM has a minimal risk of injuring the endometrium. AVM action was chosen to minimize endometrial injury as the respondent still expected to get pregnant with healthy fetal development. Meanwhile, AVM is usually done at a gestational age of no more than 12 or 14 weeks.<sup>4</sup>

MVA was firstly described in the 1970s. MVA is an action used in the handling of incomplete abortion. This action is widely used in the United States of America (USA), Asia, Europe, and Africa.<sup>5</sup> Many centers have not applied MVA to evacuate the uterine cavity yet. Therefore, the use of MVA in clinical practice has not mainly been reported.<sup>6</sup> England is one of the countries that has not used MVA much to manage uterine cavity evacuation. Based on that reason, Speedie *et al.* felt the need to promote the use of MVA<sup>7</sup>. MVA is an alternative action for the evacuation of the uterine cavity in cases of an incomplete abortion.<sup>8</sup>

Incomplete abortion is a miscarriage of the resultant conception that has not entirely come out of the uterine cavity but is still partly in the uterine cavity.<sup>8,9</sup> If an abortion occurs, incompleteness can increase maternal morbidity.<sup>9</sup> Studies comparing 400µg of sublingual misoprostol with MVA showed that misoprostol is analogous to MVA as the first line in managing incomplete abortion.<sup>9</sup> The advantages of using MVA for the evacuation of uterine cavities are that MVA is safer, less painful, and more cost-effective than sharp curettage. More importantly, MVA has a lower risk of uterine perforation than sharp curettage. MVA measures cannot be applied in the operating room merely but can be done in the clinic or emergency room.<sup>8</sup>

## CASES

The patient was a multigravida aged 42-year-old with 18 weeks gestation presented with IUFD. She was in the 3rd PoA2 pregnancy from her second husband. With the first husband, the patient already had two healthy growing children, P2A0. History of obstetrics with a second husband as G3PoA2 included the first and second pregnancy abortion in 2017 and 2018, performed curettage. The third pregnancy underwent an IUFD and performed MVA.

The oral misoprostol 100 g was given previously for dilation, which then appeared to be profuse bleeding. The AVM was then performed in the operating room under anesthesia. After the AVM procedure was declared clean, the Post-Abortion Intra-Uterine Device (PAIUD) was installed to handle the evacuation of the uterine cavity and rest the uterus for at least the next six months. Complaints of bleeding had been felt three days before entering the hospital. When more blood came out, the patient went to a midwife before being referred to the hospital emergency Installation. Doctors after examining the patient, providing therapy: allylestrenol 2x1 and isoxsuprine 3x 1/2 tablet. The patient was discharged. Two days later, more and more bleeding occurred about two hours before being admitted to the hospital. The patient no longer felt fetal movements.



Figure 1. Ultrasound results: a single fetus, spalding sign (+), FHR (-), diagnosed with IUFD

When vaginal bleeding got worse, it was decided to do an MVA emergency action. The patient stopped eating and drinking. The patient's general condition was good, with a high fundus uterine of 3 central lower fingers. During the implementation of the MVA, they planned to conduct PAIUD. After the fetus has been removed with forceps, the bleeding before MVA was 200 ml. Meanwhile, the fetus & part of the placenta appeared. MVA was performed with a 12 cm sondage and anteflexed uterus (AF). It lasted for 10 minutes and obtained as much as 50 ml of tissue residue and 50 ml of bleeding. After the MVA action was recondensed, uterine depth was 11 cm, and Cu-T type PAIUD was continued. PAIUD was the most preferred type of contraception (58.6%) after MVA compared to other types, namely: pills (16.4%), implants (13.5%), injections (7.9%), and condoms (1, 3%).<sup>10</sup> The installation of a PAIUD was intended to rest the uterus post-abortion for at least six months. Meanwhile, the tracking phase can be done, within 6 months, to cause abortion and its treatment. The patient would also be psychologically calmer to prepare for the subsequent pregnancy. The contraception was chosen as an IUD because it was non-hormonal, so it did not interfere with menstruation. The patient's fertility returned immediately after the release of the IUD. Besides, the IUD was long-term contraception. Thus, if within 6 months the patient was not ready to get pregnant again, then the contraceptive still maintained the desire of family planning from the patient.

### Post MVA

The patient's general condition was still anesthetized, with vital signs: blood pressure 100/70 mmHg, pulse 80x/minute, respiratory 20x/minute, with afebrile temperature. The patient was monitored in the recovery room for three hours. During monitoring in the recovery room, the patient's general condition was good, with good vital signs and no complaints of bleeding. The patient was later moved to the wardroom. At the next day's visit, the general condition of the patient was good. She was allowed to go home. One week later, the patient's general condition was normal, with vital signs of blood pressure 120/80 mmHg, smooth defecation (bowel movements) and urination, no bleeding, no complaints of pain, and no complaints against PAIUDs that were mounted. Ultrasound results showed a clean uterus with visible PAIUD in situ.



Figure 2. Results of the 7th-day MVA ultrasound with PAIUD in situ

The patient came in control, waiting for menstruation. She got her menstruation about two months after MVA. Her menstruation lasted for 4 days, with a normal amount of blood. There were no complaints about the IUD, no pain during menstruation, and no pain during sexual intercourse.

## DISCUSSION

Manual Vacuum Aspiration is the standard measure for evacuation of the uterine cavity in cases of miscarriage in the first trimester.<sup>5</sup> In this case report, evacuation of the uterine cavity with MVA is carried out at 18 week-gestation. The uterine cavity was much larger than the 12-14 week gestational age, so there was a concern that unclean tissue would occur. The implementation of MVA was carried out in the operating room with Total Intravenous Anesthesia (TIVA) so that the respondent was calm since previously, she had panicked, experienced bleeding, and repeated abortions. In addition, as the respondent's age was more than 40 years old, the use of TIVA was under the supervision of an anesthesiologist. TIVA is an anesthetic that is commonly used in cases of uterine cavity evacuation. The parenteral opioid used was pethidine 50 mg. Sedation such as intravenous midazolam was also used when it was needed.<sup>4</sup>

In this case, the bleeding and tissue discharge occurred, with the administration of 100 µg misoprostol first. Thus, the diagnosis turned into incomplete abortion. The evacuation of the uterine cavity as an incomplete abortion was performed with MVA. The use of a dose of 100 g misoprostol orally was chosen because the respondent experienced bleeding. Larger doses of misoprostol (400 g) were chosen either orally or vaginally if cervical ripening was required.<sup>11</sup>

Misoprostol used for the evacuation of the uterine cavity required additional use of MVA in 17% of subjects<sup>12</sup>. The dose of misoprostol in this case report differed from a study comparing the use of misoprostol against MVA as a treatment for evacuation of the uterine cavity. The amount of misoprostol used was 600 µg at gestational age less than 13 weeks.<sup>13,14</sup>

The results were obtained when the control patient experienced a clean uterus with visible PAIUD in situ one week later. Begum *et al.*, reported that MVA was recommended in Bangladesh for the management of incomplete abortion. It is because the MVA procedure is safe, effective, faster, cheaper, minimal pain, shorter hospital stay, and less risk of uterine perforation. Thus, the use of MVA in incomplete abortion reduced maternal morbidity and mortality.<sup>8</sup> In line with the research of Odland *et al.*, MVA has begun to be practiced in several hospitals in Malawi and has even become the leading management of incomplete abortion cases due to the minimal complications it caused.<sup>15</sup>

In this case, the MVA procedure was safe, effective, and faster, only requiring 10 minutes in the process, even though the uterine cavity was quite large due to 18 weeks gestation. At the time of evaluation, the uterine cavity was clear, and PAIUD was applied. Further, Blandine *et al.*, reported that MVA is effective in managing complications in early pregnancy.<sup>9</sup> It serves minimal complications of the incidence of uterine perforation, bleeding, and the remaining tissue after the MVA action. MVA is a safe, easy-to-do, and cost-effective procedure that benefits both patients and health facilities.<sup>4,6,9</sup> In this case report, the magnitude of 18 weeks gestation did not become an obstacle to cleaning the uterine cavity using the MVA procedure. MVA's action is a procedure that is more effective than sharp curettage, which Brown *et al.*, MVA also conveyed to be cheaper with shorter hospital stays.<sup>16</sup> More importantly, MVA results in a smaller amount of bleeding, fewer serious complications, aside from being quick and easy to work on, and minimal pain compared to sharp curettage.<sup>16</sup>

MVA can be done more quickly. More minimal pain and a smaller amount of bleeding are also obtained from the statement of Odland *et al.*, MVA procedure is an evacuation of the uterine cavity in cases of incomplete abortion, up to 14 weeks gestation, and sufficient use of local anesthesia or analgesia.<sup>15</sup> In addition, MVA can be done in outpatient polyclinics and places with minimal human and equipment resources as it does not require sedation and electrical devices.<sup>3,17</sup> It is even possible that MVA can be done by trained midwives and nurses.<sup>18,19</sup> The WHO recommends that AVM is a safer procedure than dilation and curettage for termination of pregnancy.<sup>20</sup> The safety of MVA procedures is also conveyed in several scientific publications that have been submitted. In addition, vacuum aspiration manually or electrically is as good as the evacuation of the uterine cavity in cases of the first-trimester miscarriage.<sup>21</sup>

## CONCLUSION

Manual Vacuum Aspiration as a procedure for evacuation of the uterine cavity in IUFD at 18 weeks gestation, gave good, safe, effective, clean, and fast results in the process of evacuation. The MVA procedure could be recommended as an evacuation of uterine cavities in cases of miscarriage with a gestational age of more than 14 weeks.

## CONFLICT OF INTEREST

There is no conflict of interest in this study.

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