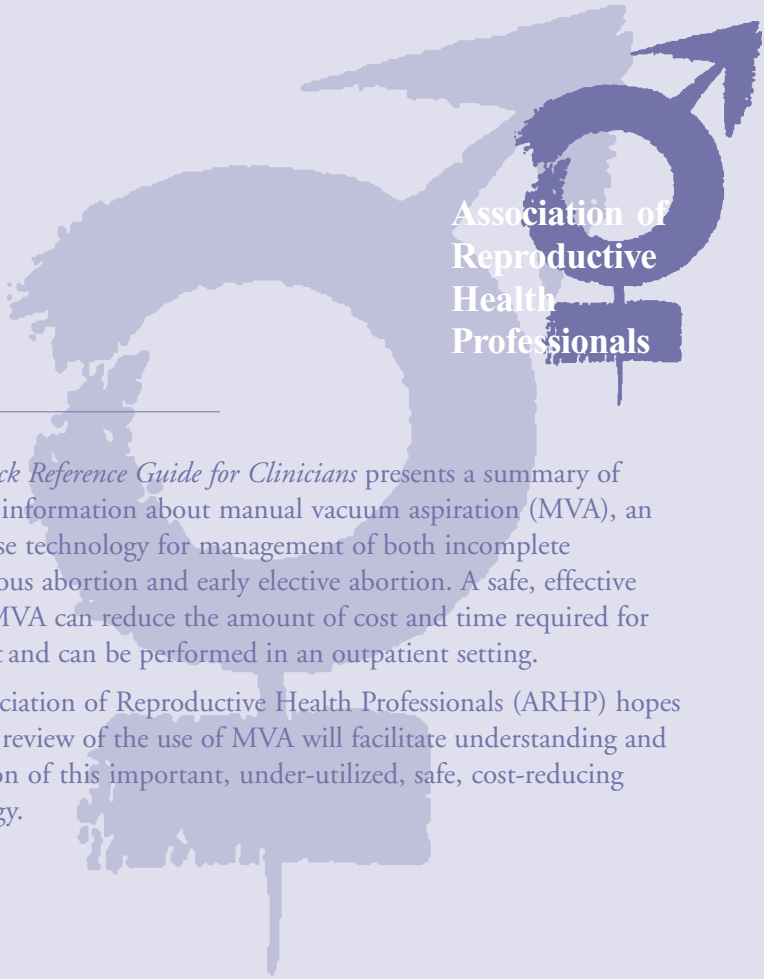
MANUAL VACUUM ASPIRATION (MVA)

A Quick Reference Guide for Clinicians



Association of Reproductive Health Professionals

This *Quick Reference Guide for Clinicians* presents a summary of scientific information about manual vacuum aspiration (MVA), an easy-to-use technology for management of both incomplete spontaneous abortion and early elective abortion. A safe, effective option, MVA can reduce the amount of cost and time required for treatment and can be performed in an outpatient setting.

The Association of Reproductive Health Professionals (ARHP) hopes this brief review of the use of MVA will facilitate understanding and application of this important, under-utilized, safe, cost-reducing technology.

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MVA Use in the United States

Clinical indications for use of MVA in the United States are:

- Treatment of early pregnancy loss
- Elective termination of early pregnancy
- Completion of failed medication abortion
- Treatment for postabortal hematometra

MVA is an in-office procedure similar to endometrial biopsy. The device used most frequently is a hand-held 60-mL syringe to which either a flexible or rigid cannula is attached. Uterine contents are aspirated by manually generating negative air pressure (vacuum) into the syringe, a virtually silent procedure. The standard technique requires only the stabilization of the cervix with a tenaculum, application of local anesthesia, and insertion of a plastic cannula into the uterus (if the cervix is inadequately dilated, minimal dilation may be needed). The cannula is then attached to a handheld vacuum aspirator and the contents of the uterus are aspirated into the barrel.

Use of MVA in Early Pregnancy Loss

Early pregnancy loss is a common experience for women. Approximately one in four women will experience a miscarriage in her lifetime.[1] For women undergoing early pregnancy loss, dilation and curettage (D&C) under general anesthesia is commonly performed. Compared with MVA, this practice has higher rates of uterine perforation, blood loss, and more frequent blood transfusions.[2] MVA has been reported to be safe and effective, and waiting time, procedure time, and hospital costs were all reduced with MVA compared with D&C.[1,3,4]

Use of MVA for Elective Termination of Early Pregnancy

The efficacy of MVA is comparable to that of electric vacuum aspiration (EVA), with completion rates in most studies of 98% or greater.[5] Because MVA is a gentler procedure than EVA, the

pregnancy tissue may be easier to identify after this procedure.[6-8] This is especially helpful for abortion performed very early in pregnancy when the amount of tissue expected is small. Such early abortions are made possible by highly sensitive urine pregnancy tests which can detect pregnancy even before a missed period. Because women can make a decision about their pregnancy as early as 3 or 4 days after a missed period they greatly appreciate having the option of a very early method.

Completion of Failed Medication Abortion

Although the success rate of medication abortion using the mifepristone/misoprostol evidence-based regimen is approximately 97%, aspiration is sometimes necessary to complete failed medication abortion or treat prolonged bleeding. MVA offers an alternative to either D&C or EVA to manage this situation.[3,4,9]

Safety and Efficacy of MVA

Numerous studies over the past 30 years have documented the safety and efficacy of MVA. The majority of the studies have examined MVA's use in early elective abortion. This safety profile is highly applicable to the use of MVA for other indications, including management of early pregnancy loss.

Data from a major retrospective study of 1,677 MVA procedures for elective abortion (99% < 10 weeks' gestational age) show:[11]

- 99.5% effectiveness
- Minimal complications
  - — 8 repeat aspirations (0.5%)
  - — 12 infections (0.7%)
  - — 1 uterine perforation (0.06%)

Data from a randomized study comparing MVA with EVA for elective abortion (91 MVA vs. 88 EVA procedures < 56 days gestational age) show:[5]

- 98% effectiveness
- Minimal complications
  - – 2 repeat aspirations (2%)
  - – 2 infections (2%)
- No difference for MVA vs. EVA

Possible MVA Complications

Although the cannula inserted in an MVA procedure is very thin and complications are rare, any instrumentation of the uterus can result in complications.[12] It is important to be able to diagnose and manage possible complications of MVA, as described below:

- Incomplete evacuation: Using a cannula that is too small or stopping the aspiration too soon can result in retained tissue, subsequent hemorrhage, and infection. Careful observation for signs of procedure completion and meticulous tissue examination are the best ways to prevent an incomplete evacuation. Incomplete evacuation can be treated by repeating the uterine aspiration.
- Uterine perforation: This is most likely to occur during dilation. Careful examination to determine the position of the uterus and cervix is essential to avoid this complication.
- Cervical laceration: This may require surgical repair.
- Pelvic infection: Should post-operative infection occur, treatment depends on location and type of infection.
- Hemorrhage: Heavy bleeding, the soaking of a maxi-pad every 20 minutes for 1 hour, is rare but can occur following MVA. Treatment depends on the severity of hemorrhage.
- Hematometra: This is a condition in which the uterus is distended with clots and blood, which fosters continued bleeding. The uterus may be larger than before the procedure and extremely tender. This condition is treated by re-aspirating the uterus.
- Unrecognized ectopic pregnancy: Absence of villi, gestational sac, or both upon inspection of uterine contents may indicate an ectopic pregnancy. Careful tissue inspection is essential to confirm aspiration of an intrauterine pregnancy.[11,13]

MVA Use

MVA Instruments and Supplies[14]

- MVA aspirator
- Silicone lubrication
- Cannulae (4–12 mm)
- Adaptor for cannulae
- Specula
- Sharp-toothed or atraumatic tenacula
- Ring forceps
- Antiseptic solution, gauze, and small bowl
- Mechanical dilators
- Syringe, needle, and anesthetic agent for cervical block

Use of a no-touch technique and prophylactic antibiotics help to avoid infection. The procedure is considered complete once the uterus feels empty to the clinician. (Note: If MVA is used for completion of incomplete or medication abortion, a sac may not be present.) The syringe must be emptied an average of one to three times to complete the procedure.[10]

MVA Equipment Advantages

- Safe and effective
- Portable
- Low cost
- Easy to use
- Reusable
- Quiet
- Usable in many settings
- High patient and provider satisfaction[7,10]
- Products of conception easily visible (when used for early elective abortion)

Dilation of the Cervix

Excessive force in dilation of the cervix can cause cervical or uterine injury. In addition, overdilation should be avoided with MVA because it can compromise the vacuum pressure. Women experiencing early pregnancy loss or incomplete abortion may already have sufficient cervical dilation for the MVA procedure. Women undergoing termination of an early pregnancy may be dilated using metal dilators or misoprostol.

Patient Comfort

Pain Management

One of the benefits of MVA is that it requires only local anesthesia rather than general anesthesia.[15] Women's experience with pain during MVA does vary, however, and attention should be paid to the needs of the individual patient. Most women feel moderate cramping during the procedure, but MVA-induced cramping diminishes rapidly after the procedure.[16] Discomfort may be less than that experienced by women undergoing D&C or EVA for the same indication.

Before giving pain medication, the clinician must evaluate the patient's medical and anesthetic risk as well as her emotional state. In very rare cases, patients may prefer general anesthesia due to high anxiety.

Within 30–60 minutes of the procedure, women usually describe their pain as mild discomfort. Non-steroidal anti-inflammatory drugs (NSAIDs) are recommended for use at home. Additional pain medications may be appropriate on an individual basis.[16]

Most women undergoing MVA will have adequate pain relief with a combination of the following approaches:[16]

- A respectful, informative, and supportive staff
- A friendly environment
- An effective paracervical block
- NSAIDs
- Gentle operative technique

Postoperative Tissue Examination

It is **critical** to examine the products of conception (POC) after completion of the MVA procedure. Examining the tissue helps ensure that the procedure is complete. Because MVA is a gentler procedure than EVA, POC are less likely to be disrupted during the aspiration and thus may be more easily identified. [6-8]

POC Review Checklist

- Light for procedure and backlighting
- Basin for specimen
- Fine-mesh metal strainer
- Glass dish to review POC

A Common Technique for Early Tissue Examination

- Wash the aspirate in a fine-mesh metal strainer under running water to remove blood and clots.
- Transfer the remaining tissue into a clear glass dish containing about 0.5 inch of water or saline solution.
- Place the dish on a radiograph box or photographic slide viewer, as backlighting greatly facilitates differentiation of the pregnancy elements.[7] A flashlight may provide some additional lighting if these resources are not available in the office.

POC Identification Issues

- A woman experiencing early pregnancy loss (miscarriage) may have already expelled the pregnancy, and thus only limited tissue may be present.
- POC from a very early pregnancy (< 6 weeks) may be difficult to identify.
- MVA may be unsuccessful. A congenital abnormality in uterine shape, for example, may make cannula placement difficult or impossible. In such cases, patients will need another option for clinical management.

Lack of complete POC identification may indicate an ongoing pregnancy. Of particular concern is the presence of an ectopic pregnancy. Patients should be followed carefully to rule out this diagnosis.

Postprocedure Care

After the MVA procedure, women can expect light bleeding and mild cramping. A clinician should be notified in the event of fever or prolonged, worsening, or severe pain or bleeding.[2] Postprocedure care requires the following:

- Monitoring of temperature and pain
- Observing for excessive bleeding

Postprocedure Counseling

All women should receive postprocedure counseling. Key elements of care include information about the signs and symptoms of normal recovery. Women should be instructed on the use of over-the-counter analgesics at home and should also know when and how to contact the clinician if they have questions or concerns.[14]

Signs and symptoms of normal recovery include:

- The regression of pregnancy-associated symptoms (nausea, breast tenderness, bloating).
- Gradual cessation of bleeding. Women's bleeding patterns will vary. Some women will have only light spotting; others will have a heavier flow and may pass clots. Bleeding rarely lasts more than 10 days.

Signs and symptoms that require immediate attention include:

- Excessive bleeding or bleeding (beyond spotting) for more than 2 weeks
- Severe or increasing pain
- Fever, chills, or fainting

Return to Fertility

Within a few days after the uterus no longer contains a source of pregnancy hormone (hCG), a woman's own normal hormone patterns begin to return. Depending on how high her hCG level was, it will be cleared from the bloodstream within a few days to a few weeks after an MVA procedure. Once that occurs, the signals for ovarian hormone production are initiated, and ovulation may occur as soon as 10–14 days after MVA, or within the following 1–2 weeks.

Women desiring a pregnancy should be encouraged to follow vitamin and diet recommendations (as well as toxic-exposure avoidance guidelines). They should be encouraged to write down menstrual cycle dates, to avoid future doubt about the timing of a missed period. Women trying to avoid pregnancy should be provided contraceptive counseling. If possible, contraception should be initiated on the day of the MVA.

Contraceptive Counseling for Women Following MVA for Elective Termination of Early Pregnancy

Because a woman can ovulate and conceive 10–14 days after a first-trimester uterine evacuation, contraceptive counseling is important for those who do not wish to become pregnant. Women making contraceptive choices today have more options than ever before: pills, injections, implants, patches, rings, intrauterine devices, sterilization, and barrier methods. All can offer safe, effective birth control to women who have been properly screened. When choosing a contraceptive method, patients and clinicians need to look for the best "fit"—the safest, most effective method that will work well for the user. A woman may also want to consider the noncontraceptive benefits of the available methods.

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