

The occasional D & C

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Dilatation and curettage (D & C) is a surgical procedure involving a scraping or curettage of the lining of the uterus (endometrium). There are several elective and emergency reasons for performing a D & C:

- evacuation of remaining placental tissue in a postpartum woman
- evacuation of tissue following an incomplete miscarriage
- evacuation and examination of tissue that may be causing irregular, heavy or dysfunctional uterine bleeding
- termination of pregnancy

PATIENT PREPARATION

History

Before performing any surgical procedure, a pertinent medical, obstetric and surgical history is taken. This includes Rh and gravida status and anesthetic risk assessment. When appropriate, counselling about pregnancy options and postprocedure contraception should be offered. Following a discussion of complications, including discussion of blood transfusion, consent is obtained and booking completed.

Physical examination

Patients requiring this procedure are often otherwise healthy. If necessary, a physical examination can be done at the time of the procedure. It includes cardiovascular and airway assessment to ensure grade 1 sedation risk. Pap test, vaginal swabs for sexually transmitted infection (STI) testing and a bimanual examination are performed. Gestational age should be confirmed before misoprostol is given. For pregnancy terminations, ultrasonography may help to confirm gestational age.

PERIOPERATIVE MEDICATIONS

Anxiety

Perioperative anxiety can be treated with 1 mg of sublingual lorazepam. This does not significantly compound the effect of other sedating intravenous medication used later in the procedure.

Misoprostol

The use of buccal misoprostol has revolutionized cervical dilation. This medication softens and opens the cervix, making dilation quite easy. It is particularly useful in primiparous patients. Misoprostol 200–400 µg is taken bucally 2 hours before the procedure. It is less useful when the cervix has recently been or is currently dilated. Because of the prostaglandin effect, patients who have asthma that is currently active should not receive this medication. Common side effects include nausea, cramping, vaginal bleeding and diarrhea. Misoprostol can also be used to prevent significant postprocedure bleeding.

Perioperative antibiotics

All high-risk patients should receive 1 g azithromycin and/or 400 mg cefixime orally before the procedure for chlamydia and gonorrhea prophylaxis, respectively. All patients should receive 2 g metronidazole orally. Because of perioperative nausea from medication and pregnancy, it is acceptable for the metronidazole to be given after the procedure.

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SURGICAL PROCEDURE TECHNIQUE

Equipment

Both hand-held Ipas syringe (Ipas MVA Plus Aspirator) and traditional Berkeley floor suction techniques will be described. Both require the same instrument tray. The Berkeley suction D & C requires a sized rigid or flexible curette with floor suction tubing. The Ipas technique requires a sized flexible curette and Ipas syringe (Fig. 1).

Instrument tray

The following instruments are required (Fig. 2):

- tray
- sterile kidney basin for holding tissue (Ipas technique)
- proviodine or chlorhexidine in a small cup
- ten 4 × 4 sterile radiopaque gauze
- 10-mL syringe
- small sterile metal cup with mixture of 20 mL of 1% lidocaine, 2 mL of 8.4% bicarbonate (used in Advanced Cardiac Life Support protocols) and 20 U vasopressin
- 25-gauge 1 $^1/_2$" needle
- nontraumatic (Teale) tenaculum and single-tooth tenaculum. Pratt 5-12 or Hegar dilators are also acceptable
- small and medium sharp curettes
- blunt curette for gravid postpartum uterus, and appropriately sized suction curette
- 2 small stainless steel bowls (1 for lidocaine mixture, 1 for chorhexidine)
- uterine sound
- stainless steel speculum
- Ipas syringe if needed

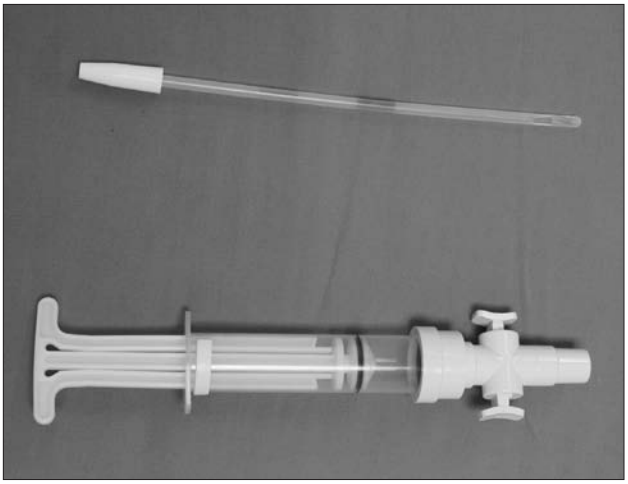


Fig. 1. Sized flexible curette and Ipas MVA Plus Aspirator.

PROCEDURE

1. With intravenous line in situ, the patient is positioned in the semilithotomy position with legs in stirrups or foot rests, similar to the position for a routine pelvic examination. Bimanual examination confirms uterine orientation.
2. Speculum insertion. This procedure can be performed using either an "aseptic, no touch" technique or a traditional sterile field. This article will describe the aseptic technique. It is not necessary to cleanse the perineum. After insertion of a sterile speculum and after vaginal swabs for STI testing have been taken, the cervix is cleansed with gauze soaked in antiseptic. Although gloves are used, the operator must avoid touching the patient or gloves with portions of the instruments that will enter the uterine cavity.
3. Paracervical block. The anterior lip of the cervix is grasped with a nontraumatic tenaculum. Using a buffered lidocaine solution, as listed in the equipment section, an intracervical block is performed. A total of 10–20 mL of solution is injected intracervically in 4 quadrants: at the 3, 5, 7 and 9 o'clock positions. This provides substantial anesthetic that requires little intravenous medication for the remainder of the procedure.
4. Intravenous sedation. Both fentanyl and midazolam are used intravenously. Usually 2–6 mg of lidazolam and 25–100 µg of fentanyl are needed. These are given in 2-mg and 25-µg aliquots, respectively. Propofol 5–10 mL can also be used if a second experienced physician is present to monitor sedation and airway.
5. Uterine sound and cervical dilation. After the intracervical block, the uterine sound is inserted gently until it reaches the dome of the uterus.



Fig. 2. Tray set-up for the dilatation and curettage procedure.

The depth of the sound helps guide the depth to which other instruments should be inserted for evacuation. The sound is a thin instrument and a recently pregnant uterus is particularly soft and prone to perforation. If the internal orifice (os) is difficult to find, there are "os finders," a simple plastic set of small instruments that are particularly efficient at finding and guiding the uterine sound or first dilator through the opening of the internal os (Fig. 3). Another option for a tortuous cervix is to grasp the posterior cervix or anterior and posterior cervix together to straighten the cervical canal and allow sound and dilation. If there is a difficult opening of the internal os, care must be taken at this stage to avoid creating a "false channel" within the cervical canal. Early postpartum patients will rarely need any cervical dilation.

Pratt dilators are then used to dilate the cervix. To facilitate the introduction of a sharp curette, a minimum of #7 dilator and size of curette needs to be inserted. During termination of pregnancy, the size of the dilator approximately matches the gestational age.

At this stage the operator can continue using a hand-held Ipas syringe or the standard Berkeley suction method. Both will be described.

A. Ipas syringe technique

An appropriately sized flexible suction curette is inserted until it reaches the dome of the uterus. With the Ipas syringe in the ready position, it is attached to the curette. Pinch the plastic buttons together at the front of the Ipas syringe to activate the suction. With one hand on the tenaculum and one hand maintaining the join between the Ipas syringe and the curette, move the curette and Ipas syringe in and out of the uterus while rotating clockwise 90 degrees and counterclockwise 90 degrees to allow the curette to adequately clear the entire uterine cavity. Substantial pressure is required to move the curette in and out of the uterus and results in a jerky movement as the flexible curette moves along the endometrial lining, particularly toward the end of the procedure. If suction is lost, the Ipas syringe is removed, the tissue evacuated from the syringe, the suction replaced in the Ipas syringe and the Ipas syringe reattached to the curette that has been left in situ. Many women experience increased cramping during the latter part of the procedure. A sharp curettage can be used to confirm complete removal of the uterine lining, followed by a second Ipas syringe, although this is not necessary. This technique is not an option for the early postpartum period (i.e., retained placenta D & C).

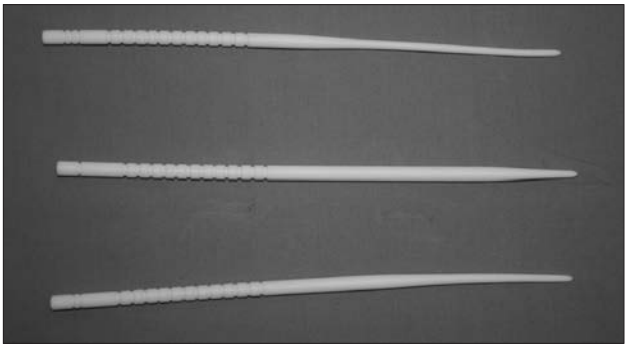


Fig. 3. Os finders.

B. Standard Berkeley suction technique

An appropriately sized rigid suction curette is inserted until it reaches the dome of the uterus. The suction tubing is attached and floor suction turned on. With a rotating motion, the curette is continuously turned 360 degrees in the uterus. An "in and out" motion is not required. To confirm complete evacuation of the uterus an "in and out" motion with the suction or sharp curette will produce the typical "sandpaper" feel as the curette scrapes the uterine lining.

COMPLETION AND POSTPROCEDURE

This is the same for both procedures. The suction curette and tenaculum are removed. A bimanual examination should confirm a small firm uterus. There should be very little bleeding. The speculum is removed and a nonsteroidal anti-inflammatory rectal suppository is inserted. Patient can then be moved to the recovery room. Patients should stay 1 hour in recovery before discharge home in the care of a responsible adult, and should abide by common postsedation guidelines with regard to driving.

Complete evacuation of the uterus is confirmed clinically by finding a small involuted uterus on bimanual examination and/or with postprocedure ultrasonography. Tissue can be examined grossly to ensure an adequate specimen and/or confirmation of gestational sac. This latter step is particularly helpful at sites where confirmation of ectopic pregnancy cannot be performed ultrasonically and the D & C at this point can confirm uterine gestational sac.

Postprocedure discharge instruction sheets should be given and reviewed with the patient. Patients should be followed up at 2 weeks postprocedure to evaluate for complications and to do a

review of curettage pathology. It is possible to become pregnant in the few weeks following D & C. It is recommended that sexual intercourse be avoided for 2 weeks postprocedure to reduce the risk of pregnancy as well as other complications.

RECOVERY

Patients can expect to return to work the day after a D & C. Ibuprofen and/or acetaminophen can be given for cramping and pain. Contraception, if needed, can be started on the day of surgery. Patients will experience bleeding and cramping for about 2 weeks after the procedure.

COMPLICATIONS

The overall complication rate is between 0.01% and 1.16% for immediate complications.[1]

Immediate complications

- Allergic reaction, acute asthma attack and vasovagal reaction.
- Bleeding, which is usually secondary to retained products or atonic uterus. The treatment is to ensure the uterus is completely empty, massage the uterus and give intravenous fluids, oxytocin 20–40 U in 1-L normal saline bolus and 10 U by intramuscular injection. Applying 5 minutes of continuous bimanual pressure may also help. Buccal misoprostol 300 mg can also be used for less severe but persistent bleeding.
- Pain. Ensure this is not secondary to increased bleeding or other more serious complications listed below. Treat with 30 mg ketorolac by intramuscular injection, and/or 25 μg intravenous fentanyl.
- Uterine perforation. This is more likely in a gravid uterus. It presents as the instrument passes through the uterus or extra uterine passage through the cervical canal. Patients may feel increased pain, vagal reaction, generalized peritonismus or diaphragm irritation (if the peritoneum is significantly disrupted). If perforation with suction curette occurs, peritoneum or abdominal contents may be seen in the suction tubing.
- Rare complications include air embolism, pulmonary embolism and cervical laceration with bleeding, unrecognized ectopic pregnancy and hematometra. Hematometra occurs when the uterus does not contract to pass all of the tissue, the cervical canal becomes blocked and, as a result, the uterus expands. Hematometra presents with significantly increased pain and nausea and is treated with repeat evacuation of the retained blood and clot.

Late complications

- Incomplete evacuation of the uterus. Usually tissue left behind is passed spontaneously; however, prolonged bleeding with retained tissue may require a repeat procedure.
- Infection/endometritis. This usually occurs with an untreated STI. However, bacterial vaginosis is also commonly associated with postprocedure endometritis. Perioperative antibiotics lessen, but do not eliminate, the risk of endometritis. Endometritis related to an STI usually presents 2–3 days after the procedure.
- Postprocedure depression. More than 2 weeks of mood-related symptoms should trigger health professionals to obtain an Edinburgh Postnatal Depression Scale symptom screen and assess for postpartum depression.
- Fertility. Having 2 or more D & C procedures can increase scar tissue and affect future fertility, and can increase the risk of ectopic pregnancy, miscarriage and placenta previa.

POST–D & C PATIENT INSTRUCTION SHEET

Patient instruction and complication sheets are available through the BC Health Guide (health linkbc.ca).

START-UP COSTS

All tray instruments together would cost less than $1000. The Ipas syringe is about $50. Many instruments can be taken from other procedural trays to minimize start-up costs. A Berkeley floor suction is a few thousand dollars; however, many larger hospitals are willing to donate older models of floor suction machines.

Competing interests: None declared.

REFERENCE

1. Soulat C, Gelly M. Immediate complications of surgical abortion. *J Gynecol Obstet Biol Reprod* 2006;35:157-62.