

# Training the Next Generation: Integration of Abortion into Clinician Education

## Teaching Surgical Skills with Simulation Models

### Multiple-Module Simulation of Dilatation and Evacuation

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#### Description:



#### Module 1: Laminaria Tent Insertion

This is a self-directed module. Learners view a 10-slide presentation outlining recommendations and methods of cervical ripening. Then, they practice insertion of “tents” (sticks the approximate size of dilators) under direct visualisation using a gynecologic simulator. Assessment consists of correct placement.

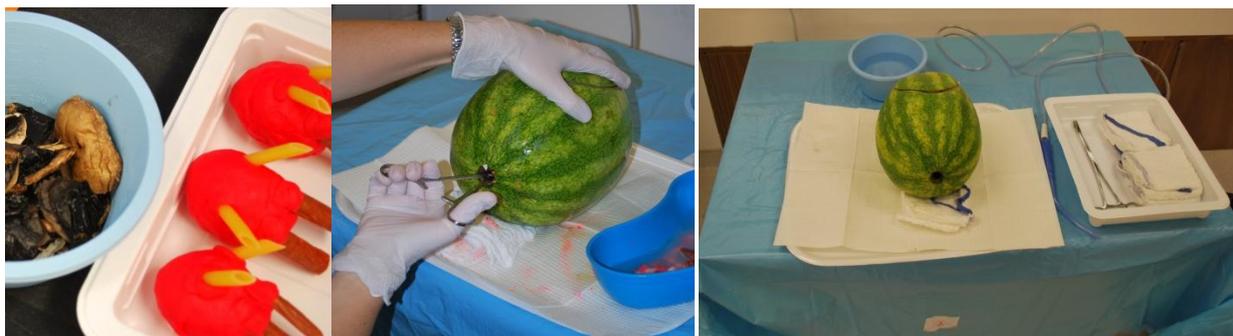
#### Module 2: Vacuum Aspiration

In this supervised module, learners perform dilation, aspiration, and curettage on a papaya. Learners are assessed based on degree of evacuation and absence of perforation. This is adapted from a stand-alone papaya module used for teaching first-trimester uterine aspiration (7).



#### Module 3: Uterine Evacuation

In this supervised module, learners extract a fetal model from a hollowed melon. The fetal calvarium is simulated with a clay-covered egg and limbs are simulated with dried pasta and pepperoni sticks (to reflect various stages of bone calcification). Mushroom is used to simulate placenta. Evaluation consists of complete fetal extraction.



## **Equipment:**

### *Module 1:*

- Pelvic model (ZOE)
- extra cervix (a red rubber paddle ball works)
- small branches cut to 4"
- water (to moisten the tents)
- tenaculum
- ring forceps
- speculum
- light source

### *Module 2:*

- papayas
- D and C tray (dilators, curette, vacuum curette (10mm))
- tubing
- vacuum source

### *Module 3:*

- hollowed watermelon (or other melon, about 7" diameter)
- ring forceps
- K-basin
- water
- wall suction (for clean-up)
- sponges (for clean-up)
- placenta model: shitake mushrooms (affixed with a toothpick)
- fetal model:
  - egg covered in kids modeling dough (calvarium and scalp)
  - dry penne pasta (limbs)
  - pepperoni sticks (limbs)

## **Strategies for specific learners:**

Depending on the number of faculty available, the Laminaria module can be self-directed. Some senior residents found this module boring, so they were encouraged to teach the juniors.

Similarly for papayas, many have done a lot of D and C's. In that instance, we discuss how surgical technique differs in the patient who is awake versus the one who has a GA. We also made residents assemble the aspirator and troubleshoot loss of suction.

In our center, no resident is proficient in D and E, so all stood to learn from the D and E simulation. No one had objections to abortion, and everyone thought the fetal model was acceptable.

## **Additional tips:**

- Moisten the sticks before using the mannequin cervix.
- Turn down your wall suction if using electric vacuum with a papaya! We used electric because that's what we use with D and E. Obviously, MVA is an option if you want to teach 1<sup>st</sup> Trimester abortions.
- Use a Yankauer (oral) suction to clean the melon between uses.
- The play-dough covering of the egg is nice because it feels like scalp, and helps the resident differentiate between having a good purchase on the calvarium and when the forceps slips.

## **Learning Objectives:**

- Conceptualize the D&E and its critical steps.
- Identify indications for cervical ripening prior to abortion.
- Correctly place tents for cervical ripening for second trimester abortion.
- Troubleshoot the electric vacuum aspirator (double check connections, etc.).
- Perform a simulated fetal extraction for abortion at 20 weeks gestational age.