Cervical Excision Procedures:
Cold Knife Cone Simulation

With improved diagnostic methods and new management protocols, cervical cold knife cone (CKC) biopsy experience among residents has decreased. This simple simulation reproduces the critical aspects involved in performing a successful CKC such as knife control and hemostatic techniques.

Utilizing a full size mannequin and actual instrumentation adds to the efficacy of this simulation because limited space and exposure tend to make this simple procedure more challenging for the novice surgeon. One can also set up a preliminary table top station for residents to practice cutting the cone shape with a straight or angled knife in dense foam or apples as a warm up exercise.

Preparation

Equipment:
- Kielbasa sausage
- Kabob skewers
- White correction fluid or nail polish
- Grounding pads
- Radiofrequency generator with cord and hand piece
- Weighted speculum and retractors
- Needle and syringe for “local” anesthesia
- Suction for smoke and “blood”
- Vaginal mount
- Long knife handle (angled optional) and blade

Optional equipment:
- Suture for stay sutures and cloth tape for reinforcement
- Acetic acid or Lugol solution
- Full-size mannequin or pelvic model
- Gauze square
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Sequence of Lab
1. Wash kielbasa with soap and water to improve grounding.  
2. Place skewers lengthwise through kielbasa for “os” (also creates a tract for “bleeding” via tubing or catheter. See Fig. 1).  
3. Wrap kielbasa lengthwise with grounding pad (rubber bands or zip ties may be required for good contact).  
4. Create “dysplasia” with white correction fluid.  
5. Wrap distal end with cloth tape to hold stay sutures.

Fig. 1. Kielbasa grounded in vaginal mount positions in a mannequin.
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Fig. 2. Dysplasia created with white correction fluid.

6. Insert the kielbasa into vaginal mount and place mount in mannequin.
7. Prepare side table with required equipment.
8. Observe the learner or demonstrate, if applicable, how to
   - administer local anesthesia
   - cut adequate cone biopsy (see Fig. 3)
   - achieve hemostasis (see Fig. 4)
   - place stay sutures (see Fig. 5; optional)
Fig. 3. Adequate cone biopsy.

Fig. 4. Hemostasis achieved with cautery.
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Fig. 5. Final stage after placing hemostatic agent and securing with tied stay sutures.

Competency Assessment

Resident conducts a “time out.” Resident performs a bimanual examination, properly inserts speculum and visualizes cervix, cleans cervix, places tenaculum, and sounds uterus. Resident properly inserts the copper intrauterine device (IUD) and levonorgestrel IUD. Resident trims strings to 3–4 cm, removes tenaculum, and applies hemostatic treatment, if needed, and removes the speculum.