

Workshop for Teaching Fundamentals of Obstetric Forceps

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The American College of Obstetricians and Gynecologists and the American Academy of Family Physicians approved (May 1980) the recommended core curriculum and specific privileges for hospital practice in obstetrics and gynecology for family physicians. Included in the curriculum and privileges is training in the use of obstetric forceps. It is apparent, however, that individual training experience may vary considerably, and residents may receive inadequate basic instruction. Although the mechanics of application of obstetric low forceps and vacuum extractor may be relatively simple, lack of experience may result in a physician being unwilling or unable to apply and use them skillfully, thus creating a potential for unacceptable compromise of the fetus. This paper describes a workshop aimed at providing basic knowledge of and training in the use of low forceps and vacuum extractor to prepare residents for their obstetric rotations.

METHODS

A workshop was developed for residents at the University of Washington university-based family medicine residency program consisting of a pretest, a lecture, and the use of forceps and vacuum extractor on a model. The lecture included the history, definitions, types and parts, indications and contraindications, techniques, and complications of forceps and vacuum extractor use. The practice model included a model pelvis attached to a base and a newborn mannequin.* Luikart-Simpson, Tucker-McLean, Keiland, and Piper obstetric forceps and a vacuum extractor**

* Female pelvis and baby mannequin are available from Anatomical Chart Co, 7124 N Clark St, Chicago, IL 60626.

** Silastic vacuum cup, Dow-Corning Corp, Medical Materials Business, Midland, Michigan.

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were demonstrated on the model. A Bill traction handle was demonstrated and made available for resident use during the workshop. The residents then practiced performing outlet extractions with the Luikart-Simpson and Tucker-McLean forceps and vacuum extractor. Although the workshop did not include practice with Elliot forceps, they were described along with Luikart-Simpson and Tucker-McLean forceps as a "general purpose forceps" option appropriate for outlet applications. Residents followed an instruction sheet outlining proper technique (Appendix) and were observed and guided by faculty. The teaching session was then evaluated by residents. Three months following the workshop, residents were again tested to determine the amount of knowledge retained following the workshop.

RESULTS

Fourteen residents attended the 1986 teaching session. They gave the workshop an overall rating of 8.7 on a scale of 10 (0 being of no value and 10 being essential to their training). All felt the workshop should be repeated at least yearly.

In 1987, ten residents who attended the workshop were given a pretest. At the time of the pretest, only two of the ten residents were confident in their ability to apply low forceps and only five in their ability to apply a vacuum extractor. Only six could name an appropriate forceps for outlet use. Only five could define low forceps application, and only three could describe the proper axis of traction. On the average, the residents had performed 50 vaginal deliveries, three low forceps applications, and four vacuum extractor applications prior to participating in the workshop.

Subsequently, eight of the ten residents, only one of whom had taken an obstetric rotation in the interim, were present at an unannounced post-test three months later. Seven of the eight were able to name an appropriate low forceps, six could define low forceps application, and seven could describe the proper axis of traction. The group consensus was that this workshop was valuable both for

preparation for obstetric experience and for clarifying and reinforcing basic information.

COMMENT

The use of a model pelvis and mannequin for teaching obstetric low forceps and vacuum extractor techniques offers several advantages over clinical experience alone. These advantages include (1) efficient communication of fundamentals to a group of learners, (2) reinforcement

and augmentation of clinical learning opportunities, and (3) potential for reduction in the risks associated with teaching a procedure to a resident unfamiliar with basic techniques. Residents commented that the model was particularly effective in demonstrating the need for the pelvic curve of the forceps blades and the changes in the axis of traction during a forceps delivery. An improvement in basic knowledge was demonstrated at the three-month post-test. This workshop was valued by residents as a means of improving their knowledge of low forceps and vacuum extractor fundamentals.

Appendix

Procedural Steps

Low forceps

1. Criteria for low forceps met (labor has been appropriately augmented if indicated)
2. Cervix completely dilated, membranes ruptured
3. Appropriate anesthesia provided
4. Bladder empty
5. Grasp handle of left blade between thumb and two fingers of left hand
6. Guide blade into position using 2 fingers of the right hand introduced into the vagina
7. Reverse roles of hands and apply right blade
8. Articulate blades and check application to ensure that blades are equidistant from sagittal suture
9. Apply gentle horizontal traction during contraction until perineum bulges (pull with right hand, push down on shank with left hand)
10. Handles are gradually elevated as vulva is distended
11. Perform episiotomy when perineum begins to be distended
12. When brow can be felt, may remove forceps and use the modified Ritgen maneuver if preferred

Vacuum

1. Criteria for low forceps met or no contraindications to midpelvic application (labor has been appropriately augmented if indicated)
2. Cervix completely dilated, membranes ruptured
3. Appropriate anesthesia provided
4. Bladder empty
5. Compress cup as small as possible and insert
6. Place cup so that it is flush against fetal head with blue line marking posterior fontanel
7. Rotate cup slightly to ensure that maternal tissue is not trapped
8. Run finger around circumference to ensure that maternal tissue is not trapped (may use slight vacuum)
9. Apply vacuum and traction with onset of contraction, keeping one hand on cup, and one hand on handle (use 20–60 cm Hg)
10. If cup starts to come off, hold edge in contact with head and decrease traction
11. Stop vacuum between contractions using trumpet valve
12. Limit use to approximately 20 minutes