

SURGICAL SIMULATION OF COLD KNIFE CONIZATION AND SUCTION DILATION AND CURETTAGE PROCEDURES USING A PATIENT SIMULATOR AND PAPAYA MODEL

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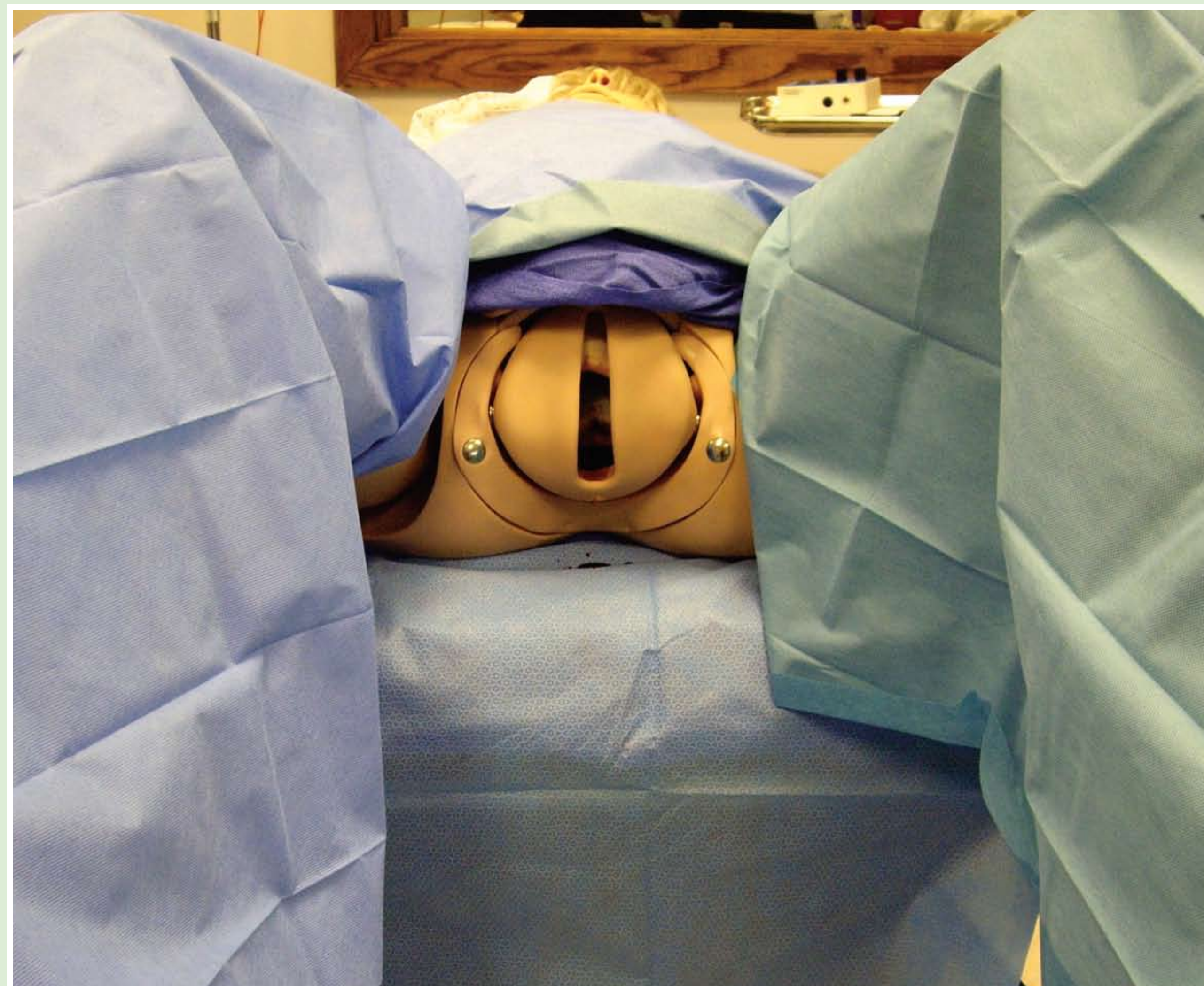
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OBJECTIVE

Our purpose was to train residents in performing gynecologic surgical procedures using a patient simulator and papaya model. Some training institutions have used papayas, cantaloupes or other fruits as uterine models for practice of various surgical procedures. We proposed to further the realism of this design and take advantage of this learning tool in combination with our institution's innovative patient simulator lab to better represent actual gynecologic patients and surgical procedures.

At ETSU, we currently have several simulator models which we employ in a variety of training scenarios and simulations. One of these, the NOELLE™ Birthing Simulator (Gaumard Scientific Company), represents an obstetric/gynecologic patient, allowing our faculty, residents, and students to participate in procedures and scenarios specific to our field.



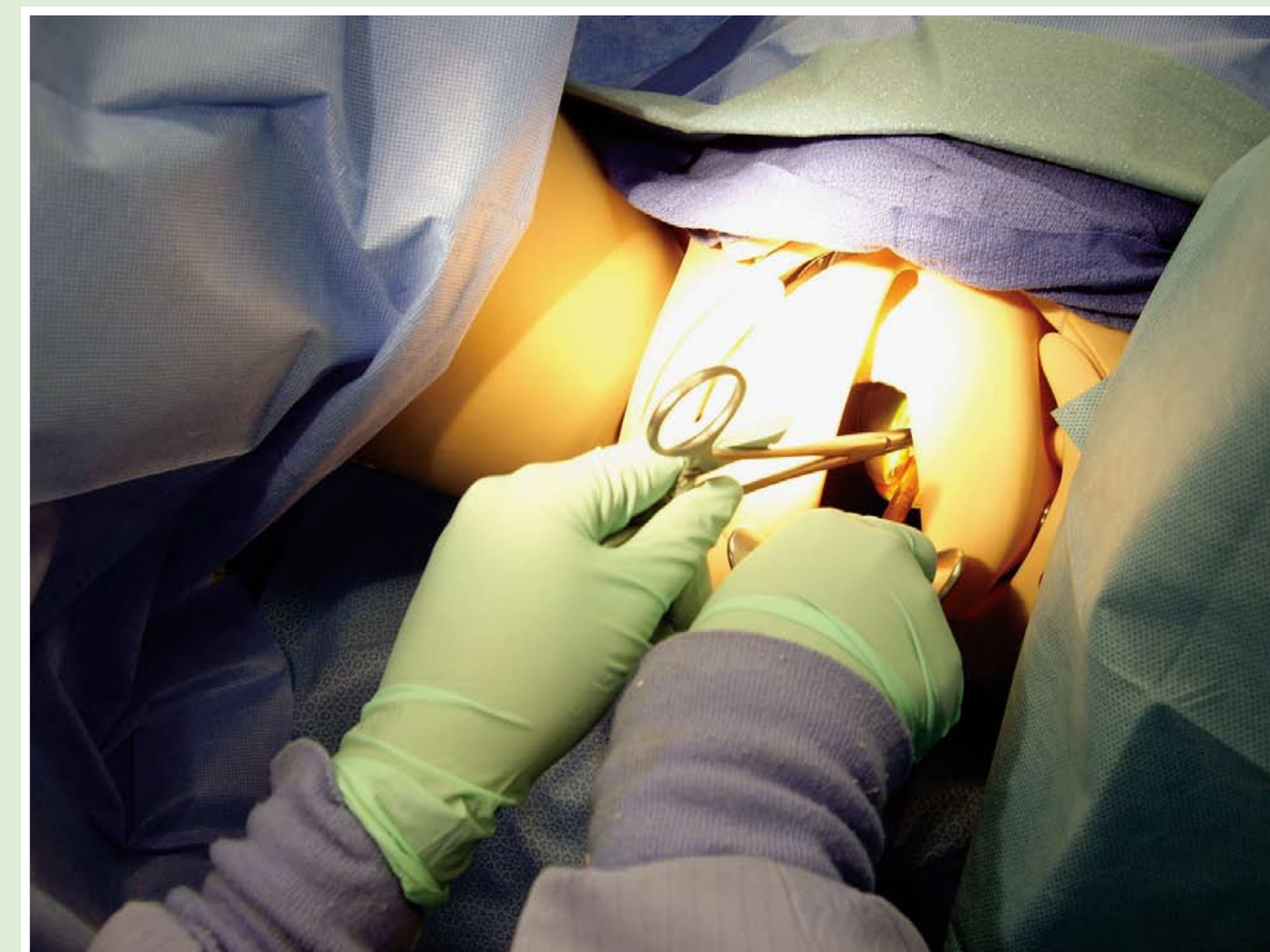
BACKGROUND

Similar to Paul and Nobel's 2005 description,¹ we planned to teach and practice suction dilation and curettage with the papaya model. However, we incorporated our NOELLE™ Birthing Simulator for a more realistic experience. Also, we added to this the simulation of a cold knife conization on the model prior to the suction dilation and curettage.



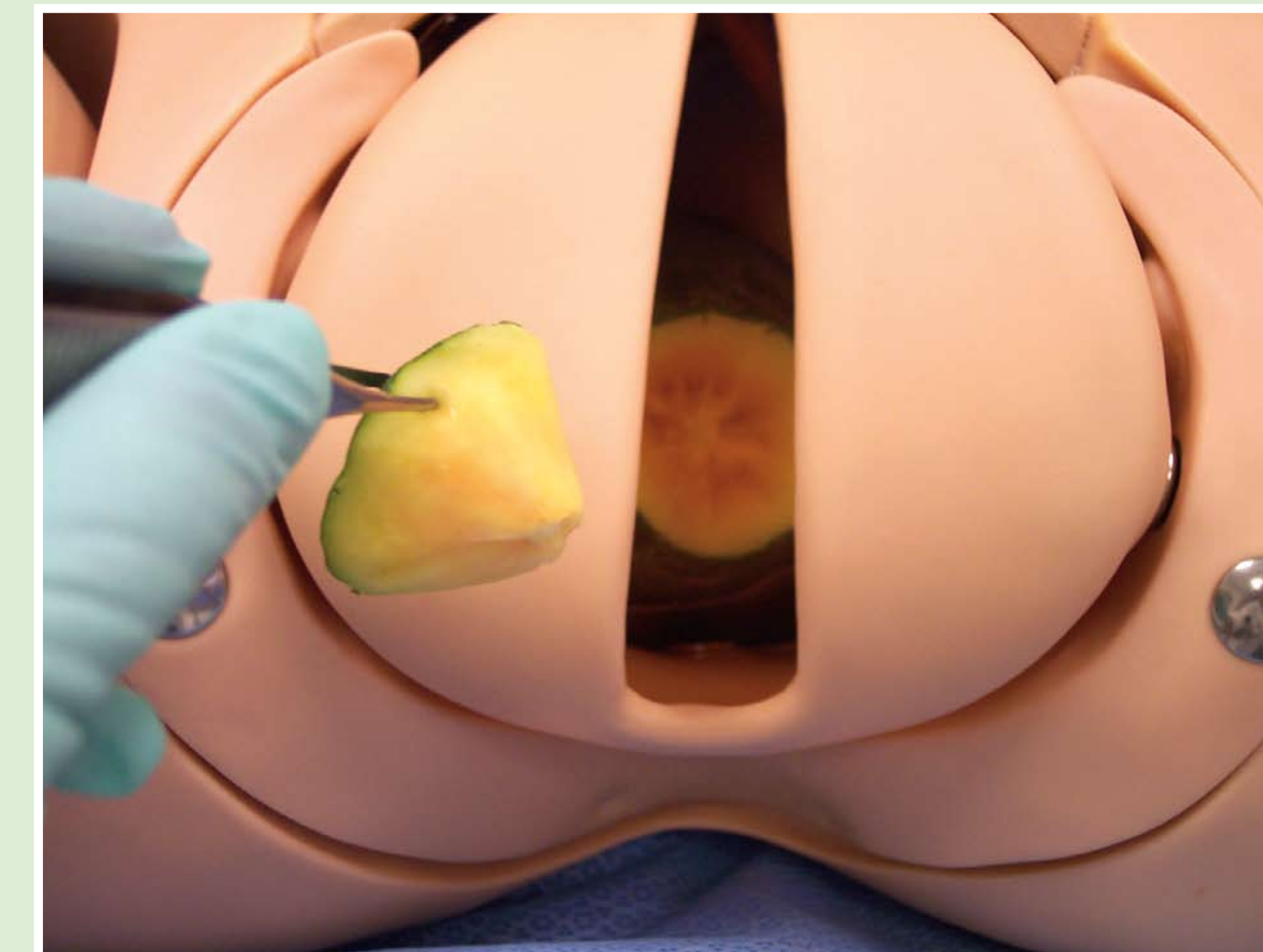
METHODS

Using the papaya as a uterine model, the resident performed two surgeries. The papaya is placed into the NOELLE™ Birthing Simulator, with its stalk representing the cervix inside the vaginal vault.



METHODS (cont.)

1. A cold knife conization was performed by the learner using standard surgical instrumentation, with removal of a small, cone-shaped section from the simulated cervix.



2. Next, a suction dilation and curettage was undertaken inside the papaya, which represents the intrauterine cavity. The fruit's internal contents and seeds, which have a consistency similar to products of conception, were removed. Injection of red dye prior to the procedure allows this material to demonstrate an appearance similar to products of conception.



RESULTS

Resident participants of all training levels have undertaken this simulation. Residents found the educational experience to be valuable and an effective teaching tool which prepared them for and realistically simulated actual surgeries on human patients.

CONCLUSIONS

This papaya model enables the learning curve to rapidly increase in a controlled setting, with unlimited "patients" and time. This allows interns and even students to act as primary surgeon in a practical experience not typically provided at their levels of training. It is well-suited for increasing the learner's familiarization with the techniques and instrumentation of the simulated procedures.

DISCUSSION

We agree with Paul and Nobel's suggestion "that simulation is an effective first step in teaching uterine aspiration procedures." The simulation provides an accurate surgical experience with the potential for competency evaluation and pre- and post-procedure testing and safety analysis. The risks involved with live patients and the costs associated with a real-time operating room, staff, anesthesia, and instruments are avoided.

1. Paul, M. and Nobel, K. *Papaya: A Simulation Model for Training in Uterine Aspiration*, *Fam Med* 2005; 37(4):242-4.