This study was undertaken in a university affiliated Ob/Gyn resident program. A workshop was developed to teach the residents about obstetric anal sphincter injuries. Baseline medical knowledge was assessed with a multiple-choice test, validated by four senior faculty members in urogynecology and general obstetrics and gynecology. Baseline resident confidence was assessed with a survey validated by the same four faculty members. Residents’ baseline surgical competence in repairing fourth degree lacerations was evaluated using the previously described beef tongue model (9). Surgical competence was assessed by using a previously validated surgical checklist specific to this task, as described by Siddighi, et. al. (9). Two senior faculty members involved in the project acted as primary investigators administered the skills assessment with the beef tongue model.

The instructional component of the session was then implemented, which included a didactic slide presentation focused on diagnosis, informed consent, antibiotic use during repair, postpartum management, and counseling during future pregnancies. Instruction on perineal anatomy and physiology also was discussed, with an emphasis on the both the internal and external anal sphincters for the continence mechanism. An ACOG-provided instructional DVD with high-quality anatomical animation was then shown (10). Residents were then given the opportunity to practice the fourth degree repair technique on a pig sphincter model. A modified version of the validated checklist used for evaluating the surgical competence prior to the educational intervention was provided as a guide for the residents through the critical steps of the procedure. Out of the 14 eligible residents, 12 residents participated in some component of the study but only 3 juniors and 3 seniors were able to participate fully.

Methodology

OASIS Knowledge Test

- 10) Fourth degree obstetrical laceration: anatomy and repair, ACOG DVD 189.
- 6) Pollack, J.; Nordenstam, J; Brismar, S; Lopez, A; Altman, D; Zetterstrom, J.
- 5) Duggal, N; Mercado, C; Daniels, K; Bujor, A; Caughey, A; El-Syed, Y.  Antibiotic Prophylaxis for prevention of postpartum wound infections with and without previous episiotomy or third- to fourth-degree lacerations: a randomized controlled trial. Obstet Gynecol. 2005 Oct;106(4):828-33.
- 4) Fernando, Ruwan J. MD, MRCOG1; Sultan, Abdul H. MD, FRCOG2; Kettle, Christine PhD3; Radley, 4) "What's new in obstetrics and gynecology?" Clin Obstet Gynecol. 2010 Jun;53(2):233-40.

Discussion of Results

Fewer operative vaginal deliveries and increasing numbers of Cesarean sections have decreased incidence of obstetric anal sphincter injuries in the US, decreasing resident exposure to this complication of vaginal deliveries. A resident-driven educational intervention can improve resident confidence in performing obstetric anal sphincter repairs. Residents preferred the pig sphincter model for learning sphincter repairs, finding it more anatomically accurate and more realistic in tissue consistency than the traditional beef tongue model.

In the future we plan to analyze occurrence of diagnosed obstetric anal sphincter lacerations from the time period prior to the intervention and then following: we hypothesize that the prevalence of diagnosed sphincter injuries will increase as thedelivering residents have increased awareness, knowledge, and comfort in repair diagnosis and repair technique. We also have incorporated a test of skill into the annual resident OSCE and will analyze retention of knowledge from the workshop.

Literature Cited


This program has a resident complement of 4 each year and 2 of the 16 residents were the primary coordinators of this simulation, thus the number that participated in this pilot study was small and further data is necessary to make definitive conclusions. With this study we do contribute to the evidence that residents are not learning necessary background information nor gaining surgical competence for management of obstetric anal sphincter injuries. There is little difference in the knowledge regarding this topic held by junior and senior residents. We illustrate that with a resident-driven educational session, resident confidence in ability to perform a repair may increase. Additionally, we show that the pig sphincter model was preferred by the residents as the simulation tool over the beef tongue model.

The use of externally and internally validated educational interventions is a strength of this study, which is low cost and easy to implement in multi-center settings. The small number of participants is an obvious limitation.