

## RESULTS FROM A RESIDENT-DRIVEN EDUCATIONAL INTERVENTION ON RESIDENT KNOWLEDGE OF OBSTETRIC ANAL SPHINCTER INJURIES

### Hypothesis / aims of study

This study describes the results obtained from a resident-driven educational intervention implemented at a single US obstetrics and gynecology residency program. At our institution we surveyed residents' knowledge of perineal anatomy, repair technique and post-partum care, as well as the confidence of the resident physicians to perform these repairs. A simulation workshop was then conducted utilizing both the beef-tongue model and the pig sphincter model for teaching obstetrical anal sphincter injury repair. We then surveyed the residents regarding which model was most preferred for instruction.

It has been shown that more than half of residents in US obstetrics and gynecology residency programs do not receive formal teaching on perineal laceration repair or pelvic floor anatomy [1] and that less than half are proficient in repairing anal sphincter injuries [2]. We hypothesized that residents would not perform well on the written knowledge exam nor on the simulation model task. We also hypothesized that the pig sphincter model would be favored by the residents for instruction technique.

### Study design, materials and methods

A workshop was developed to teach the residents about obstetrical anal sphincter injuries. Medical knowledge and level of confidence in ability to perform a repair were assessed with a multiple-choice test, composed of questions validated by four senior faculty members in urogynecology and general obstetrics and gynecology. This was conducted at the beginning of the session, and then residents were evaluated in surgical competence by performing a fourth-degree repair on a 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 emphasis on the importance of both the internal and external anal sphincters for the continence mechanism. An ACOG-provided instructional DVD with high-quality anatomical animation was then shown and 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 the critical steps in the procedure.

### Results

	Junior residents	Senior residents	Total
Pre-intervention exam score (%)	66	73	70
Pre-intervention repair score (%)	54	64	58
Considers pig model more anatomically accurate (%)	100	67	83
Considers pig model more realistic in tissue consistency (%)	67	67	67
Prefers pig model for learning repair (%)	100	67	83

### Interpretation of results

With this study we provide some 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 also show that with a resident-driven educational session, resident confidence in ability to perform a repair increases. Additionally, we show that the pig sphincter model was preferred by the residents as the simulation tool over the beef tongue model.

### Concluding message

Fewer operative vaginal deliveries and increasing numbers of caesarean sections have decreased incidence of obstetrical 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 repairs. Residents preferred the pig sphincter model for learning sphincter repairs, finding it more anatomically accurate and more realistic in tissue consistency than the beef tongue model.

### References

1. McLennan M, Melick C, Clancy S, Artal R. "Episiotomy and perineal repair: an evaluation of resident education and experience," M. T. McLennan, C. F. Melick, S. L. Clancy, and R. Artal, "Episiotomy and perineal repair: an evaluation of resident education and experience," J Reprod Med. 2002;47(12):1025-30.
2. Uppal S, Harmanli O, Rowland J, Hernandez E, Dandolu V. "Resident competency in obstetric anal sphincter laceration repair," Obstet Gynecol. 2010 Feb;115(2Pt1):305-9.

Disclosures

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