

ADDRESSING SURGERY RESIDENT DEFICIENCIES IN LAPAROSCOPIC BLEEDING MANAGEMENT: A PORCINE WET LABORATORY EDUCATION MODEL



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Background

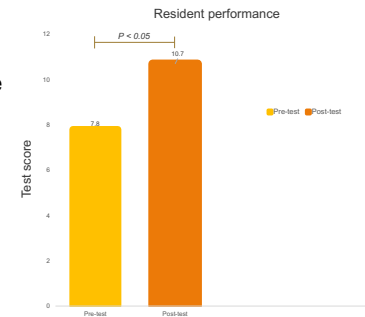
- Simulation is now firmly established as a training adjunct to address deficiencies in modern surgical education.
- Operative case numbers have decreased compared to earlier generations of trainees.
- Resident experience in advanced laparoscopy and management of laparoscopic bleeding can be limited.
- The currently required FLS course aids in fulfilling this void but provides an inanimate curriculum.
- This study's goal is to provide a potential solution through a standardized education model consisting of didactic lecture and a laparoscopic porcine operative laboratory.
- A similar model has been adopted by the trauma community.

Methods

- MIS faculty and senior residents assembled our third annual resident education course in laparoscopic hemostasis, Advanced Porcine Laparoscopic Hemostasis Simulation (APLHS).
- The course was completed by seven general surgery residents ranging from PGY2-5.
- Each resident completed a pretest prior to didactic lecture on topics in laparoscopic hemostasis and topical hemostatic agents.
- Residents then completed the MIS faculty proctored porcine laboratory course consisting of pigs under general anesthesia and a standardized curriculum including management of bleeding injuries to the liver, spleen, kidney, and IVC with various hemostatic techniques.
- The course concluded with completion of a posttest consisting of multiple choice questions on knowledge and application of laparoscopic hemostasis as well as opinion-based assessments of the course and confidence in managing laparoscopic bleeding.

Results

- There was 85.7% pretest and 100% posttest completion among the seven attendees.
- Resident scored significantly higher following the course on posttest (10.7 vs 7.8, $p < 0.05$).
- Largest improvements were seen among junior residents.
- Participants indicated increased confidence in managing laparoscopic bleeding and 100% strongly agreed the course was valuable and should be continued in the future.



Conclusion

- Resident experience with management of laparoscopic bleeding can be limited due to its complexity and duty hour restraints.
- Results from our third annual APLHS validate porcine wet labs as an effective model for surgical resident education.
- The combination of structured didactic presentation with live porcine operative experience increases resident knowledge and confidence in management of laparoscopic bleeding.
- This educational model may be useful as an adjunct to FLS early in residency training.