



Western Surgical Association 2020 Annual Meeting

Monday, November 9, 2020
4:00pm – 6:15pm Pacific Time
– Virtual Meeting --

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P 4. TEACHING ENDOSCOPIC UPPER GASTROINTESTINAL BLEEDING CONTROL TO PRACTICING SURGEONS: AN "INTO THE FIRE" APPROACH TO SIMULATION

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Background: Flexible endoscopy is an increasingly important tool for the gastrointestinal (GI) surgeon. Effective and efficient training curricula are needed more than ever. Here, we present a simulation-based modular curriculum using an "into the fire" approach with hands-on pre- and post-testing to teach endoscopic control of upper GI bleeding to practicing physicians.

Methods: Two advanced flexible endoscopy courses were taught by two expert surgical endoscopists from 2018 to 2019. The upper GI bleeding module focuses on using endoscopic clipping techniques to control simulated bleeding from the stomach using ex-vivo porcine models and is composed of a series of pre-training tests, didactic and mentored hands-on instructions, and post-training tests. Both pre- and post-testing included a confidence survey, knowledge-based written test, and evaluation form specific to the hands-on performance of the bleeding control techniques. Wilcoxon signed-rank tests were used to compare pre- and post-tests scores.

Results: Twenty-eight practicing physicians with varying endoscopic experiences participated in the course. Fifty percent of participants had completed < 200 upper endoscopic procedures. After completion of the course curriculum, participants had improved confidence survey scores from 11.4 ± 4.2 to 20.7 ± 4.0 ($p < 0.001$) as well as improved knowledge-based written test scores from 7.1 ± 1.2 to 8.4 ± 0.9 ($p < 0.001$). More importantly, hands-on performance of the endoscopic clipping technique to control bleeding improved from 15.5 ± 2.5 to 27.3 ± 2.4 ($p < 0.001$) with significant improvement in all individual components of the hands-on skills (all p values < 0.001).

Conclusion: Our simulation module using an "into the fire" approach to teach endoscopic upper GI bleeding control is effective in improving participants' knowledge, confidence and hands-on performance of the technical skills. This novel approach using a hands-on pre-test prior to any formal instructions addresses unique challenges of teaching practicing providers with varying levels of experience and may lead to more efficient learning.