A self-approximating transluminal access technique for potential use in NOTES: an ex vivo porcine model (with video).

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Original Article: Experimental Endoscopy
A self-approximating transluminal access technique for potential use in NOTES: an ex vivo porcine model (with video)

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Background
NOTES (natural orifice transluminal endoscopic surgery) is an area of active research in experimental endoscopy and has the potential to significantly advance the field of minimally invasive surgery. Several investigators have illustrated the need for a transluminal access technique that is safe, reliable, and reproducible. Currently used methods directly cut through the organ wall into the peritoneum; however, rare difficulty in closing the defect with negative outcomes have been described.

Objective
To evaluate an alternative method for transluminal access.

Design
An ex vivo, experimental endoscopy study.

Setting
Penn State Hershey Medical Center, Animal Research Laboratories.

Methods
By using ex vivo porcine esophagus, stomach, and colon, a submucosal tunnel was created as a means of physically separating the lumen from the peritoneum during transluminal access. Postprocedure leak testing was performed, and all procedures were video recorded.

Results
Results of the self-approximating transluminal access technique (STAT) in porcine esophagus and stomach demonstrated the technical feasibility of this approach. The STAT was not felt to be feasible in the porcine colon.

Limitations
This investigation was a limited, ex vivo pilot study and will require further testing in an adequate number of live animals.

Conclusions
The STAT is technically feasible in porcine esophagus and stomach, and may have advantages over currently used techniques.

Abbreviations
ASGE, American Society for Gastrointestinal Endoscopy; GE, gastroesophageal; NOTES, natural orifice transluminal endoscopic surgery; SAGES, Society of American Gastrointestinal Endoscopic Surgeons; STAT, self-approximating transluminal access technique

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