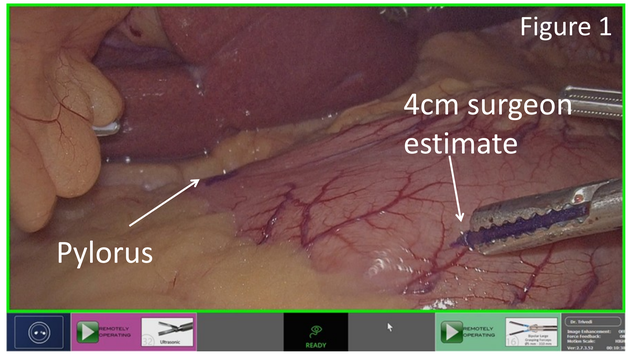
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Pascack Valley Medical Center

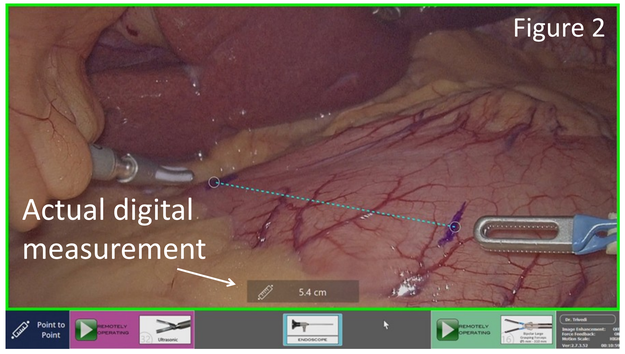
Use of Digital Point to Point Measurement Tool during Robotic Bariatric Surgery to Create a Consistent Sleeve Gastrectomy

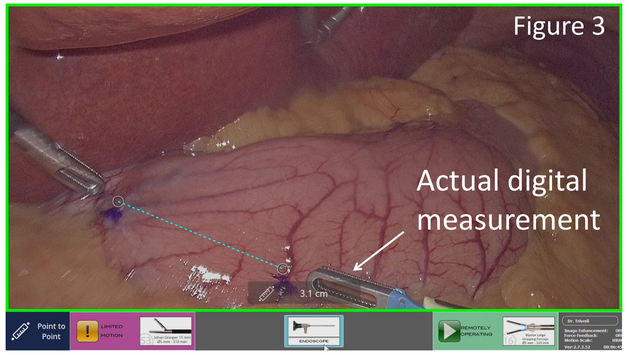
Amit Trivedi, MD and Sarah Wong, MD, FACS
Department of Surgery, Hackensack Meridian Health Pascack Valley Medical Center, Westwood, NJ

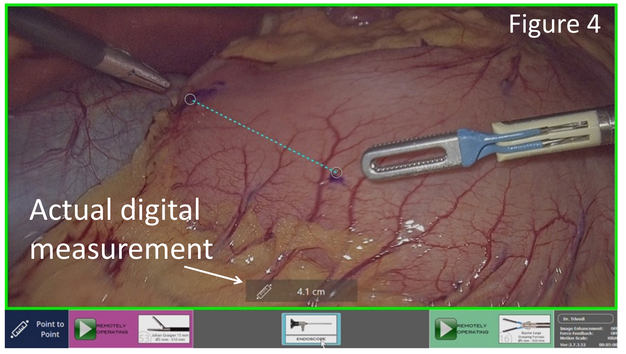
Creating a Consistent Sleeve Gastrectomy

Sleeve Gastrectomy is currently the most frequently performed bariatric surgery procedure in the United States. While the majority are done using laparoscopic techniques, there is a growing trend towards the use of robotic platforms to perform this procedure. Robots such as the Asensus Surgical Senhance® Surgical System, have integrated augmented intelligence tools to assist the surgeon in real time during the surgery. One such tool allows the surgeon the ability to digitally measure the distance between any two points in the operative field. The vast majority of surgeons start their stapling along the greater curvature of the stomach at an estimated distance between 4 and 6 cm from the pylorus which is prone to variation. An accurate and reproducible measurement of the distance from the pylorus will allow for the creation of a more consistent sleeve gastrectomy. In this study, we used the digital measurement tool to compare the distance from the pylorus the surgeon estimated, with the actual measurement given by the digital measurement tool. In this small study, significant variation was noted between what the surgeon estimated as their standard distance from the pylorus to what the actual measurement was due to multiple factors including surgeon experience, parallax error, and anatomical movements.









Methods

Three consecutive sleeve gastrectomy patients were selected for this study. Prior to any dissection, the pylorus was identified and a mark was placed on the pylorus using an endoscopic marking pen. A second mark was made along the greater curvature where the surgeon would start their stapling (figure 1). As is this surgeon's convention, this distance between the two points is supposed to be 4 cm. This estimated measurement was then confirmed with the digital measurement tool.

Results

With the intended distance to be 4cm, the actual digital measurements were 5.4cm (figure 2), 3.1cm (figure 3), and 4.1cm. (figure 4). The surgeon was off by 1.4 cm, 0.9 cm, and 0.1 cm, respectively.

Conclusion

In this very small patient sample, there was variation in what the surgeon was estimating and the real measurement. A digital measurement tool that gives reproducible measurements between two points in real time during a procedure has the potential to allow for a decrease in variability of cases. Additionally, accurate measurements may have clinical implications such as with tumor margins vs. surgeon estimation. A larger sample study is needed to further validate differences in surgeon distance estimates vs. digital measurements.