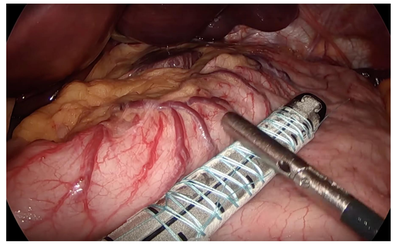
Evaluating Post-Operative Outcomes of Single-Fire vs Multiple-Fire Stapler Use in Minimally Invasive Sleeve Gastrectomy

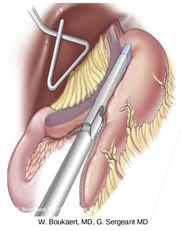
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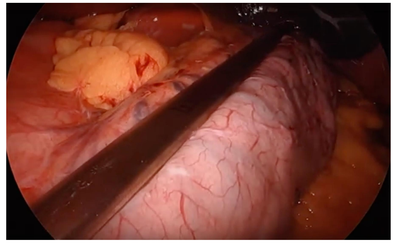
Introduction

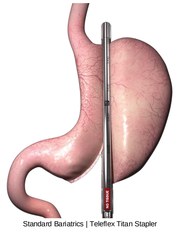
The laparoscopic sleeve gastrectomy (LSG) is the most common surgical intervention for weight loss. New advances have led to the development of a single-fire (SF) stapler. The purported benefits of single-fire LSG are a more linear staple line which may avoid angulation and therefore is hypothesized to reduce post-operative nausea and vomiting as well as reduce operative times. The objective of this study is to determine if the SF technique has improved perioperative outcomes and shorter operative time compared to the multiple-fire (MF) LSG.





W. Boukaert, MD, G. Sergeant MD





Standard Bariatrics | Teleflex Titan Stapler

Methods & Analysis

Retrospective chart review between 7/3/2023 and 6/12/2024 of 90-day perioperative outcomes in patients who received a LSG six months prior to and six months after switching to a single-fire stapler at a single academic bariatric center of excellence. Patient demographics, length of hospital stay, and duration of procedure were abstracted from the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program.

Results

	Variable (median [IQR] or n [%])		
Demographic	**Multi-Fire (n=127)**	**Titan (n=66)**	**P-value**
Age	40 (32-52)	39 (33-48)	0.729
Female	58 (87.9)	57 (86.4)	0.795
Race	White: 2 (3.2) Black: 58 (92.1)	White: 4 (6.3) Black: 51 (81.0)	0.184
Ethnicity	Hispanic: 3 (4.5)	Hispanic: 3 (4.5)	0.859
Highest Weight	137.5 (116.2-167.1)	114.8 (119.9-162.5)	0.577
Highest BMI	47.7 (43.6-54.4)	53.1 (44.2-57.9)	0.760
Smoker	1 (1.5)	2 (3.0)	0.559
Diabetes	17 (25.8)	16 (24.2)	0.841
Obstructive Sleep Apnea	9 (13.6)	12 (18.2)	0.475
Gastrointestinal Reflux	3 (4.5)	7 (10.6)	0.188
Liver Disease	1. (1.5)	2 (3.0)	0.315
Heart Failure	3 (2.4)	6 (9.1)	**0.035**
Hypertension	52 (40.9)	37 (56.1)	**0.046**
Hyperlipidemia	16 (24.2)	12 (18.2)	0.394

Outcome	**Multi-Fire (n=127)**	**Titan (n=66)**	**P-value**
Robotic	55 (83.3)	64 (97)	**0.009**
Conversion to open	1 (1.5)	0 (0)	0.315
Drain placed	2 (3.0)	0 (0)	0.154
Operative Time	92.0 (79.0-109.25)	85 (72.0-109.0)	0.119
Length of Stay	1 (1.0-1.0)	1 (1.0-1.6)	**0.006**
ICU admission	2 (3.0)	2 (3.0)	1.000
Pulmonary Embolism/Venous Thromboembolism	2 (0)	0 (0)	0.157
Surgical Site Infection	0 (0)	0 (0)	
Transfusion	1 (1.5)	1 (1.5)	1.000
Urinary Tract Infection	2 (3.0)	2 (3.0)	0.988
Sepsis	0 (0)	2 (3.0)	0.154
Pneumonia	1 (1.5)	1 (1.5)	0.991
Staple Line leak	0 (0)	1. (1.5)	0.315
Obstruction	1 (1.5)	0 (0)	0.315
IV fluids outpatient	10 (15.2)	7 (10.6)	0.436
ED Visits	27 (21.3)	9 (13.6)	0.22
Readmission	6 (9.1)	5 (7.6)	0.753
90 Day Total Body Weight Loss	48 (40.0-59.3)	43 (25.7-54.9)	**0.070**

Conclusion

Throughout the first six months using the SF technique for LSG at this academic bariatric center of excellence, the SF method was not found to be inferior to the MF method. There is a trend toward shorter operative times with SF. While statistically insignificant in our current analysis, with greater exposure and familiarity with the device we anticipate the difference in operative times between the two groups may grow stronger.