New Surgical Stapler Designed to Decrease Cost Without Impacting Outcomes in Bariatric Surgery: An Analysis of 120 patients

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Objective: Evaluate safety and efficacy of a newly introduced stapler in bariatric surgery as compared to established surgical staplers.

Introduction: Over 200,000 bariatric operations are being performed at accredited centers in the US yearly with a quoted leak rate of 0.1-8.3% for gastric bypass (RYGB) and 0-7% for sleeve gastrectomy (LSG) and hemorrhage rates as high as 1-5%. Additionally, healthcare costs are rising; one driver of high intra-operative cost is technology use, specifically surgical staplers. Our aim is to test the function and outcomes of a reduced cost stapler compared to currently marketed staplers to perform LSG and RYGB.

Methods: A prospective non-randomized analysis was performed for patients undergoing laparoscopic bariatric surgery at two surgical centers. Outcomes evaluated include staple load usage, staple line reinforcement, intra-operative and post-operative complications, and length of stay. Study performed under IRB protocol with patient consent.

Results: From September 2018 thru December 2018, 120 patients (80% female, mean BMI 41kg/m2) underwent laparoscopic bariatric surgery. 60 LSG and 60 RYGB were performed; 20 patients from each operative group had either a 60mm Ethicon, Covidien, or Reach stapler used for their procedure. Staple loads used for LSG were 2 green plus 3 gold or blue. Staple loads used for RYGB were 3 blue and 3 white. Staple line reinforcement was used for Ethicon and Covidien staplers while no reinforcement was used for Reach. There was no difference in number of staple loads between devices. There was one stapler misfire during a LSG performed with an Ethicon device, no misfires from Covidien nor Reach; no alteration to the operation was needed for the misfire. There were no differences in operative time, intra-operative blood loss, or length of stay between groups. There were zero leaks and zero post-op bleeding complications.

Conclusion: There was no difference in intra-operative function and surgical outcomes between staplers. The new stapler may positively influence operative costs.

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