The staple line reinforcement in Davinci Robotic Sleeve Gastrectomy is feasible and safe: first 50 consecutive robotic sleeves

Bao-Ngoc Nasri[1] M.D, Ph.D, Calin Marius, MD, FACS[2]; Karl Strom, MD, FACS[2]; Silvia Fresco, MD, FACS[2]; Kevin Bain, DO[2]; Richard Greco, DO[3]; Jonathan Reich, MD, FACS[3];

1, Richmond University Medical Center; 2, Montclair Surgical Associate/ Hackensack Meridian Health; 3, Montclair Surgical Associates / Seton Hall Medical School

BACKGROUND

The staple line reinforcement in laparoscopic sleeve gastrectomy is the first of choice for many experienced bariatric surgeons. The benefits of DaVinci Sureform Staple Technology combined with Staple Line Reinforcement had not been well evaluated.

AIM

We aim to demonstrate the safety and feasibility of DaVinci Stapling Technology in robotic sleeve gastrectomy combined with staple line reinforcement.

METHODS

Retrospective review of all laparoscopic sleeve gastrectomy (LSG) and robotic sleeve gastrectomy (RSG) between April 2021 and September 2021.

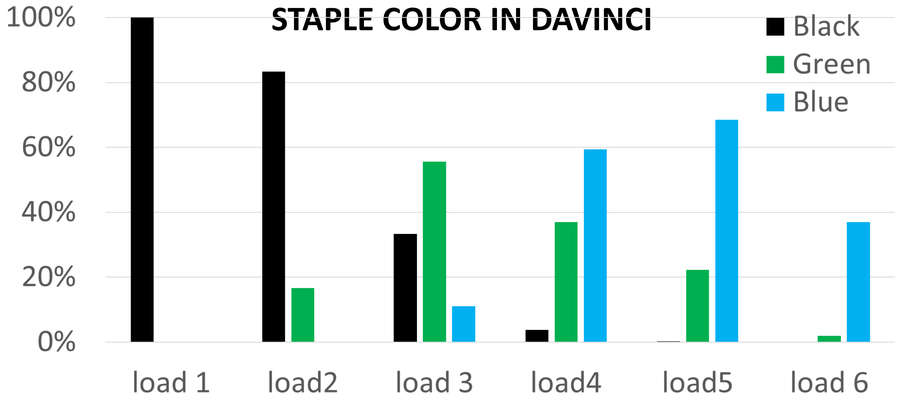
Compare DaVinci stapling technology: Force Fire (SeamGuard with FF) and No FF (Seam Guard only)

- Staple line complications (bleeding, trouble shooting).
- Length of stay, 30-days outcomes (complications, readmission), 30-days BMI, 6-months BMI, 1-year BMI

RESULTS

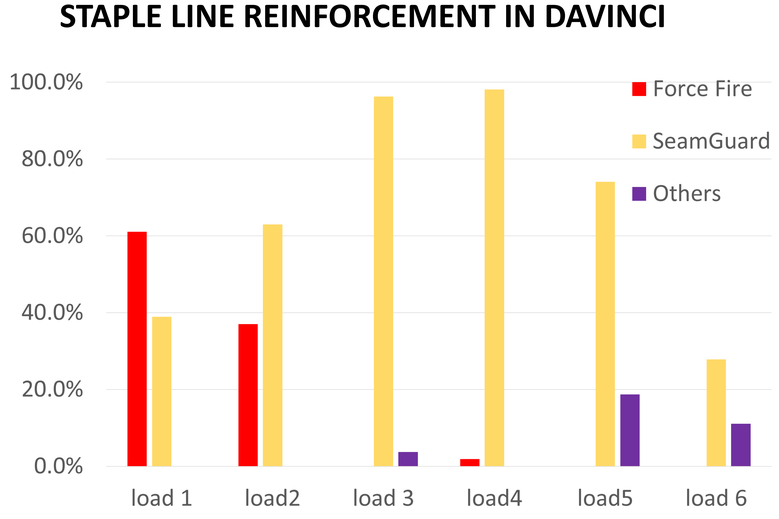
Total 108 cases (54 LSG, 37 RSG with FF, 17 RSG no FF)

- Lap group had the shortest procedure time ($p<0.0001$)
- No 30-day-ER visit in RSG with FF ($p=0.038$)
- No difference in length of stay, post-operative complication, 30-day BMI, 1 year BMI
- 68.5% of RSG required Force Fire
- 98% Force Fire happened at 1st and 2nd load
- 92.6% completed at the 5th staplers
- No difference in intraoperative staple line bleeding, console time, post-operative complications, 30-days BMI, 6-months BMI between RSG with FF vs No FF
- Rate of troubleshooting 1.85%



CONCLUSIONS

Robotic sleeve gastrectomy with staple line reinforcement is a safe and feasible alternative for laparoscopic sleeve gastrectomy. Intraoperative alert when Force Fire was used was not associated with any adverse event. We suggest that the optimal sequence of staple lines with reinforcement material in the robotic platform should start with 2 black loads followed by green load.



REFERENCE

Peter William Lundberg, Jill Stoltzfus, Maher El Chaar. 30-day outcomes of robot-assisted versus conventional laparoscopic sleeve gastrectomy: First analysis based on MBSAQIP. Surg Obes Relat Dis. 2019 Jan;15(1):1-7