Staple Line Reinforcement During Laparoscopic Sleeve Gastrectomy: Absorbable Monofilament, Barbed Suture, Fibrin Glue, or Nothing? Results of a Prospective Randomized Study.

Authors: Carandina S, Tabbara M, Bossi M, Valenti A, Polliand C, Genser L, Barrat C

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Abstract:

BACKGROUND: Laparoscopic sleeve gastrectomy (LSG) is associated with serious complications, such as staple line (SL) leaks and bleeding. In order to prevent the occurrence of these complications, surgeons have advocated the need to strengthen the staple line. The aim of this randomized controlled study was to compare the efficacy of three different ways of strengthening of the SL in LSG in preventing surgical post-operative complications.

METHODS: Between April 2012 and December 2014, 600 patients (pts) scheduled for LSG were prospectively randomized into groups without SL reinforcement (group A) or with SL reinforcement including fibrin glue coverage (group B), or oversewn SL with imbricating absorbable (MonocrylTM; group C) or barbed (V lock) running suture (group D). Primary endpoints were post-operative leaks, bleeding, and stenosis, while secondary outcomes consisted of the time to perform the staple line reinforcement (SLR) and total operative time.

RESULTS: Mean SLR operative time was lower for group B (3.4+/-1.3 min) compared with that for groups C (26.8+/-8.5 min) and D (21.1+/-8.4 min) ($p<0.0001$). Mean total operative time was 100.7+/-16.4 min (group A), 104.4+/-22.1 min (group B), 126.2+/-18.9 min (group C), and 124.6+/-22.8 (group D) ($p<0.0001$). Post-operative leaks, bleeding, and stenosis were recorded in 14 pts (2.3 %), 5 pts (0.8 %), and 7 pts (1.1 %), respectively, without statistical difference between

the groups.

CONCLUSION: Our study suggests that SLR during LSG, with an imbricating or non-imbricating running suture or with fibrin glue, is an unrewarding surgical act with the sole effect of prolonging the operative time.