

ENDOSCOPIC SLEEVE GASTROPLASTY: DIFFERENT SUTURE PATTERNS, SAME VOLUME REDUCTION

AUTHORS AND AFFILIATIONS

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INTRODUCTION

Endoscopic sleeve gastropasty (ESG) is an emerging endoscopic bariatric procedure consisting in the endoscopic placement of multiple full-thickness non-absorbable sutures. Several different stitching techniques have been described to date but data on the impact that each suture pattern has on gastric restriction is lacking. This study aims at objectively evaluating the effect on gastric volume reduction of the 5 most commonly used stitching techniques using 3D CT-scan gastric reconstruction.

METHODS AND PROCEDURES

A single operator performed two series of ESG per stitching pattern U, square, M, N, and Z, on ex-vivo porcine stomachs of similar size and volume. All procedures were performed using the Overstitch system (Apollo Endosurgery, Texas) plicating the greater curvature from the incisura to the fundus, which was spared. Operative time, number of sutures used and gastric volume reduction were recorded for each procedure. CT-scan 3D reconstruction with Siemens Syngovia workstation was performed before and after ESG, to assess gastric restriction and shortening (see image on the right).

RESULTS

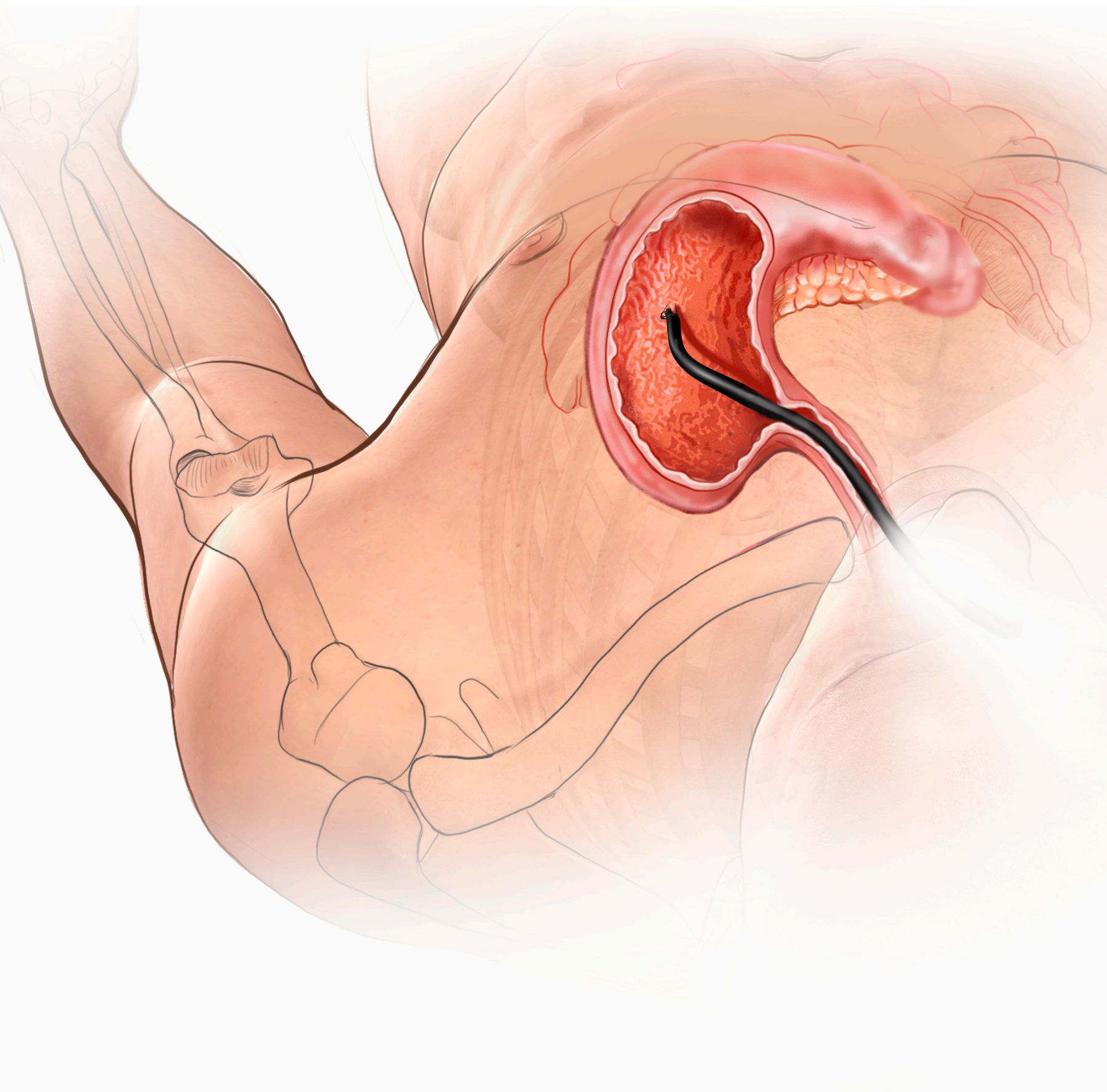
The overall average volume reduction, gastric shortening and procedure time were 70,8±5,7%, 28,5±1,9% and 48,8±11,3 minutes, respectively. The mean residual gastric volume was 330.05 cm³. There were no statistically significant differences between the different patterns in terms of volume reduction, stomach shortening and procedure time. On the contrary differences between the average values of the first and the second series were all statistically significant (p<0.05) (Table 1).

CONCLUSION

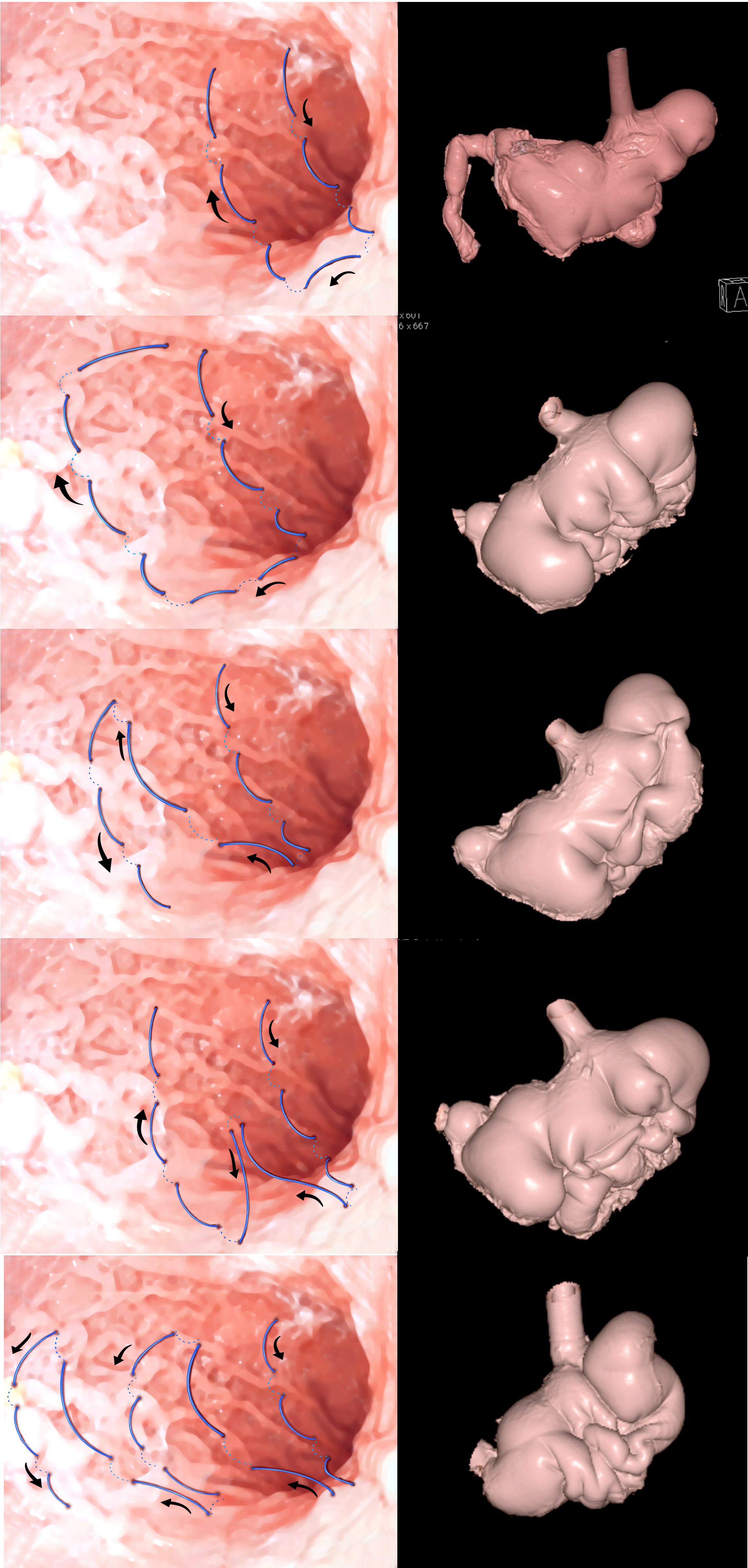
In order to improve the results of ESG, different suturing patterns were arbitrarily proposed with no consensus nor standardization to date. Our study shows that different stitching patterns achieve comparable results in terms of gastric volume reduction and shortening. The effect of training significantly improves gastric restriction and operative time, independently of the stitching patter used, suggesting that experience is more important than suture configuration. Even if limited by the small sample size, this study is the only available objective gastric restriction comparison among the existing ESG patterns.

Pattern	Volume reduction %			Shortening %			Time (minutes)		
	Round 1	Round 2	p	Round 1	Round 2	p	Round 1	Round 2	p
U	67,60	75,50		28,40	31,70		57,00	38,00	
Square	66,60	71,10		27,60	30,30		55,00	39,00	
N	61,40	77,40		25,80	29,10		59,00	35,00	
Z	68,70	77,90		26,20	28,70		64,00	41,00	
M	65,40	76,30		27,10	30,10		61,00	39,00	
Mean	65,94	75,64	0,003	27,02	29,98	0,001	59,2	38,4	0,001

Table 1



Endoscopic view



«U» pattern

«square» pattern

«N» pattern

«M» pattern

«Z» pattern