



The impact of the bougie size and the extent of antral resection on weight-loss and postoperative complications following sleeve gastrectomy: Results from the Scandinavian Obesity Surgery Registry

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NO CONFLICT OF INTEREST

Objective

To evaluate the influence of bougie size and antral resection distance from the pylorus on postoperative complications and weight-loss results in LSG.

SOReg (Scandinavian Obesity Surgery Registry)

- Laparoscopic sleeve gastrectomy (LSG) 2012-2019
- BMI 35-50
- 9360 Patients
- Follow up
 - 96% at 30 days
 - 79% at 1 year
 - 50% at 2 years

Bougie size 35-36 compared to bougie size 30-32

Antral resection distance of 5 cm from the pylorus was compared to shorter distance 1-4 cm and to extended distance 6-8 cm.

The outcomes

- Weight loss results %TWL, BMI loss, %EBMIL at 1 and 2 years
- Postoperative complications at 30 days, 1 and 2 years.

Patients' characteristics

Number individuals, n	9,360
Age (Years), mean \pm SD	40.9 \pm 11
Preoperative BMI (kg/m ²), mean \pm SD	40.4 \pm 3.7
Sex (female), n (%)	7367 (78.7%)
Comorbidities	
Type-2 diabetes, n (%)	888 (9.5%)
Hypertension, n (%)	2045 (21.8%)
Sleep apnea, n (%)	763 (8.2%)
Dyslipidemia, n (%)	699 (7.5%)
Surgical specifications	
Bougie size 30-32 (%)	1846/9088 (20.3%)
Bougie size 35-36 (%)	7242/9088 (79.7%)
Distance from pylorus 1-4 cm (%)	3703/7934 (46.7%)
Distance from pylorus 5 cm (%)	3652/7934 (46%)
Distance from pylorus 6-8 cm (%)	579/7934 (7.3%)

Bougie size and 2 years weight loss results

	Bougie size 30-32	Bougie size 35-36	Difference
N (%)	659 (14.5)	3867 (85.5)	
%TWL 2 years	27.6 ± 9.8	26 ± 9.5	1.6 *
BMI Loss	11.1 ± 4.2	10.5 ± 4	0.57 *
%EBMIL	75.8 ± 28	70 ± 26	5.8 *

P-values: *p<0.001

Distance from pylorus and 2 years weight loss results

	Distance 5 cm	Distance 1-4 cm	Difference
N (%)	1866 (47.4)	1849 (47)	
%TWL 2 years	25.5 ± 9.3	26.6 ± 9.4	1.1 *
BMI Loss	10.3 ± 4	10.7 ± 4	0.4 *
%EBMIL	69.1 ± 26	72.7 ± 27	3.6 *

P-values: *p<0.001

Subgroup analysis

%TWL 2 years for different subgroups			
	Distance from pylorus 1-4 cm	Distance from pylorus 5 cm	Distance from pylorus 6-8 cm
Bougie size 30-32	28.6 ± 9.2 (N 170)	25.8 ± 9.7 (N 209)	24.5 ± 13 (N18)
Bougie size 35-36	26.4 ± 9.4(N 1636)	25.3 ± 9.2(N 1591)	25.1 ± 10.9 (N 190)

Difference in %TWL at 2 years 3.3

Early and major early complications					
	Bougie size 35-36	Bougie size 30-32	Distance 5 cm	Distance 1-4 cm	Distance 6-8 cm
Early complications	0 (REF)	1.08	0 (REF)	1.46 *	1.27
Major early complications (Clavien 3b or more)	0 (REF)	.90	0 (REF)	1.66 *	1.44
P-values: *p<0.001					

Specific complications within 30 days from surgery stratified by Bougie size and antral resection distance

	Bougie size 35-36	Bougie size 30-32	Distance 5 cm	Distance 1-4 cm	Distance 6-8 cm
Numbers under observation, n	6994	1733	3544	3566	503
<i>Complications, n (%)</i>					
Leak	33 (0.5%)	10 (0.6%)	13 (0.4%)	13 (0.4%)	4 (0.8%)
Abscess	21 (0.3%)	10 (0.6%)	14 (0.4%)	8 (0.2%)	5 (1.0%) *
Bleeding	83 (1.2%)	17 (1.0%)	31 (0.9%)	47 (1.3%)	7 (1.4%)
Stricture	9 (0.1%)	3 (0.2%)	4 (0.1%)	5 (0.1%)	3 (0.6%) *
Wound complication	75 (1.1%)	18 (1.0%)	35 (1.0%)	47 (1.3%)	3 (0.6%)
Cardiovascular complication	4 (0.1%)	0 (0.0%)	0 (0.0%)	3 (0.1%)	0 (0.0%)
Venous Thromboembolism	4 (0.1%)	1 (0.0%)	3 (0.1%)	3 (0.1%)	0 (0.0%)
Pulmonary complication	18 (0.3%)	5 (0.5%)	7 (0.2%)	8 (0.2%)	3 (0.6%)
Urinary tract infection	29 (0.4%)	3 (0.2%)	9 (0.3%)	21 (0.6%) *	1 (0.2%)
Other complication	145 (2.1%)	61 (3.5%) ***	65 (1.8%)	97 (2.7%) *	11 (2.2%)

P-values: * p<0.05; ** p<0.01; *** p<0.001

No significant difference was observed in the risk of developing early or late postoperative complications between different bougie sizes and antral resection distances from the pylorus.

Conclusions

- A narrow bougie and initiating antral resection closer to the pylorus in LSG were associated with greater weight loss.
- A closer resection to the pylorus was associated with an increased risk of early postoperative complications.
- No difference in the leak rate or risk of stricture development was observed between different bougie sizes or varying antral resection distances from the pylorus.

Thank
you!