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Krystal Ortiz-Diaz

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Lenox Hill Hospital, Northwell Health

Disclosures

None

Original article

Surgical technique in constructing the jejunojejunostomy and the risk of small bowel obstruction after Roux-en-Y gastric bypass

Suzanne Hedberg, M.D.^{a,b,*}, Anders Thorell, M.D., Ph.D.^{c,d}, My Engström, R.N., Ph.D.^{b,e},
Erik Stenberg, M.D., Ph.D.^f, Torsten Olbers, M.D., Ph.D.^{a,g}

Study Description

Objective: Determine the association of JJ surgical technique and risk of SBO.

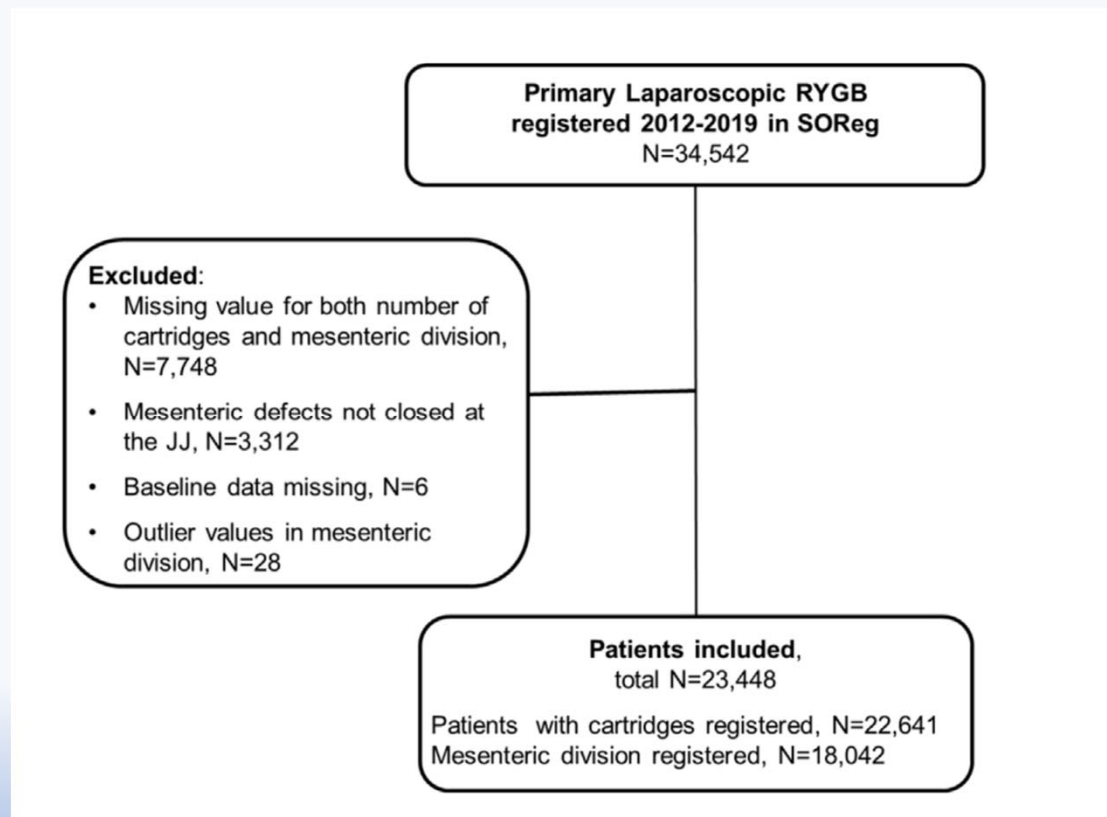
Type of study: Retrospective Cohort

N: 23,448 patients Mean Follow Up: 4.3yrs

Sweden: multi-center, multi-surgeon.

Period of time: 2012-2019

Inclusion Criteria



Methods

- Scandinavian Obesity Surgery Registry (SOReg)
- Swedish National Patient Registry (PAR)
- Inclusion/Exclusion Criteria
- Baseline data analyzed using descriptive statistics.
- Calculations with/without adjustments for: age at time of RYGB, BMI, sex and smoking status.

Outcomes to Measure

Main

- Bidirectional stapling and SBO
- Mesenteric division and SBO
- Multivariate analysis of SBO
- Mesenteric division on SBO for unidirectional and bidirectional JJ
- SBO risk on original vs modified JJ

Secondary

- Perioperative complications
- Bleeding
- 30-day complication rate
- Hospitalization for abdominal pain
- Revisional surgery of JJ

Results

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Table 2
Risk of early postoperative small bowel obstruction (within 30 d of surgery)

Surgical technique	OR/HR (95% CI)	P value	Adj. OR/HR (95% CI)*	Adj. P value*
Method of stapling the jejunojejunostomy				
Unidirectional	Ref.	Ref.	Ref.	Ref.
Bidirectional	.51 (.33–.80)	.003	.44 (.27–.74)	.002
Mesenteric division				
0 cm	Ref.	Ref.	Ref.	Ref.
1–4 cm	1.85 (1.32–2.59)	<.001	1.75 (1.22–2.51)	.002
≥5 cm	.91 (.64–1.30)	.603	.97 (.67–1.41)	.877

OR = odds ratio; HR = hazard ratio; CI = confidence interval; Adj. = adjusted; Ref. = reference.

* After adjusting for body mass index, sex, age at the time of Roux-en-Y gastric bypass, and smoking.

Results

Table 3
Risk of late postoperative small bowel obstruction (after postoperative day 30)

Surgical technique	OR/HR (95% CI)	<i>P</i> value	Adj. HR (95% CI)*	Adj. <i>P</i> value*
Method of stapling the jejunojejunostomy				
Unidirectional	Ref.	Ref.	Ref.	Ref.
Bidirectional	1.10 (.93–1.29)	.261	1.17 (.99–1.39)	.066
Mesenteric division				
0 cm	Ref.	Ref.	Ref.	Ref.
1–4 cm	1.10 (.93–1.30)	.263	1.05 (.88–1.26)	.604
≥5 cm	.95 (.82–1.11)	.542	.95 (.81–1.11)	.488

OR = odds ratio; HR = hazard ratio; CI = confidence interval; Adj. = adjusted; Ref. = reference.

* After adjusting for body mass index, sex, age at the time of Roux-en-Y gastric bypass, and smoking.

Results

Table 4
Multivariate analysis of the risk of early small bowel obstruction (within 30 d of surgery)

Surgical technique	HR (95% CI)	<i>P</i> value	Adj. HR (95% CI)*	Adj. <i>P</i> value*
Method of stapling the jejunojejunostomy				
Unidirectional	Reference	Reference	Reference	Reference
Bidirectional	.56 (.33–.94)	.029	.52 (.29–.95)	<.05
Mesenteric division				
0 cm	Reference	Reference	Reference	Reference
1–4 cm	1.81 (1.27–2.57)	.001	1.66 (1.14–2.42)	<.01
≥5 cm	.88 (.61–1.28)	.514	.91 (.62–1.34)	.637

HR = hazard ratio; CI = confidence interval; Adj. = adjusted.

* After adjusting for body mass index, sex, age at the time of Roux-en-Y gastric bypass, and smoking.

Results

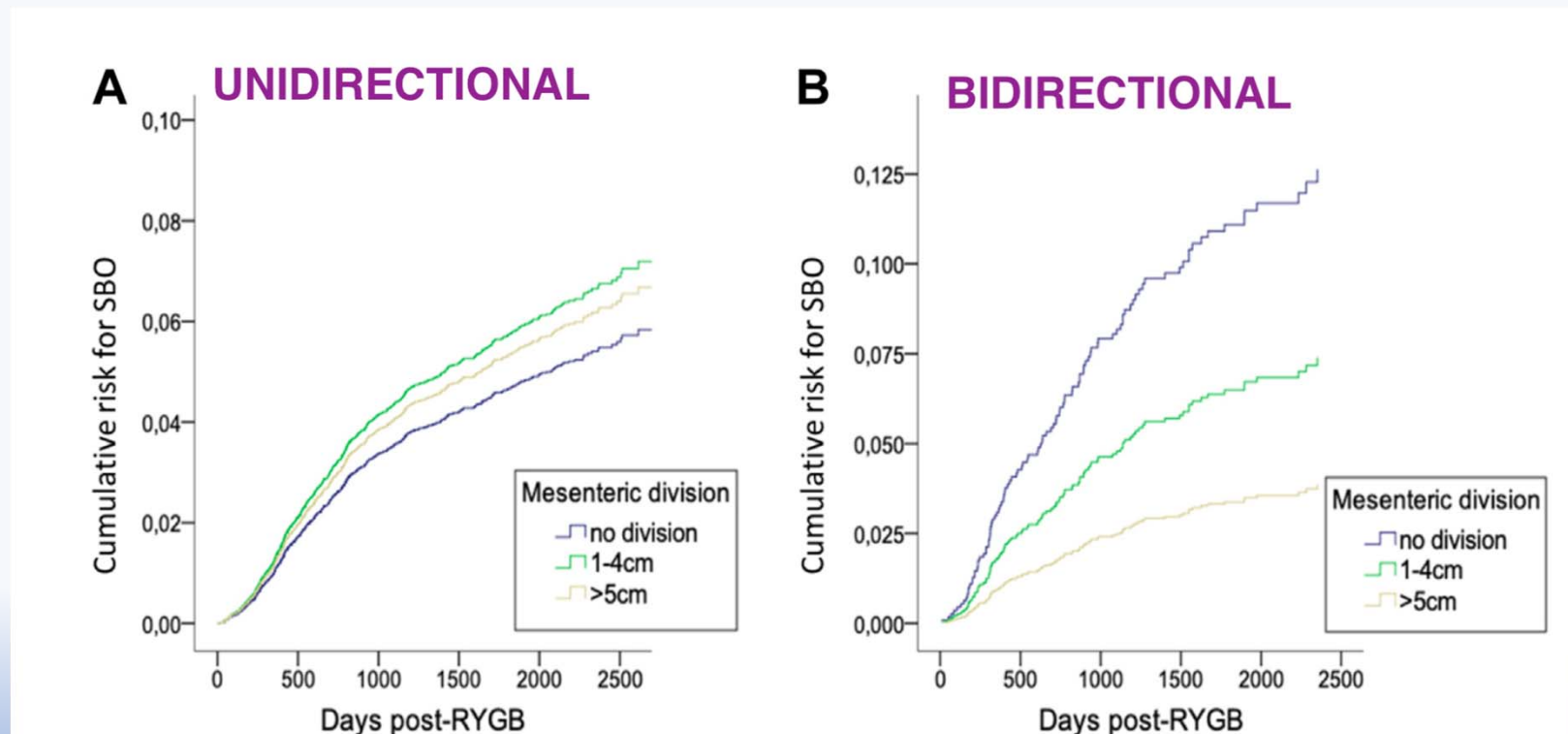
Table 5
 Multivariate analysis of the risk of late small bowel obstruction (exceeding 30 d after surgery)

Surgical technique	HR (95% CI)	<i>P</i> value	Adj. HR (95% CI)*	Adj. <i>P</i> value*
Method of stapling the jejunojejunostomy				
Unidirectional	Reference	Reference	Reference	Reference
Bidirectional	1.22 (1.00–1.48)	.056	1.30 (1.05–1.61)	<.05
Mesenteric division				
0 cm	Reference	Reference	Reference	Reference
1–4 cm	1.19 (.94–1.33)	.210	1.05 (.87–1.27)	.590
≥5 cm	1.01 (.86–1.19)	.918	1.00 (.85–1.19)	.962

HR = hazard ratio; CI = confidence interval; Adj. = adjusted.

* After adjusting for body mass index, sex, age at the time of Roux-en-Y gastric bypass, and smoking.

Results



Discussion

- Data suggests that technique used to create JJ may affect the incidence of SBO after RYGB.
 - Bidirectional stapling reduces risk of SBO in early post-operative period.
 - Increased risk of SBO in mesenteric resection (1-4cm) in early post-operative period.
 - Long term multivariate analysis shows increased SBO risk for bidirectional stapling group.
 - Long term mesenteric division reduced SBO risk in bidirectional stapled JJ's but no significant reduction in unidirectional stapled JJ's.

Discussion

- Larger risk reduction when using modified JJ over original JJ technique.
- Overall similar rate of intraoperative complications with slightly higher incidence for bidirectional stapling and mesenteric resection >5cm groups.
- Bidirectional stapling associated with decreased hospital admissions for abdominal pain.

Discussion

Strengths

- Large number of patients
- Wide variety of settings, patients and surgeons.
- High quality registries used.

Limitations

- Inherent observational studies limitations.
- Complete predominance of antecolic antegastric

Summary

- Bidirectional stapling of JJ for RYGB seems to decrease the risk of early post-operative SBO.
- Addition of mesenteric resection of >5cm to bidirectional stapling of JJ seems to decrease the risk of both, revisional surgery and long-term SBO.

THANK YOU



QUESTIONS ?