



Bari
S.I.C.O.B.

SPRING MEETING

18 - 19 MAGGIO 2023
THE NICOLAUS HOTEL

CONDIVIDERE PER CRESCERE
Strategie di integrazione
in Chirurgia Bariatrica

Presidente del Congresso
ANTONIO BRAUN

EMORRAGIA

INQUADRAMENTO E CLASSIFICAZIONE CLINICA

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Which postoperative complications matter most after bariatric surgery? Prioritizing quality improvement efforts to improve national outcomes

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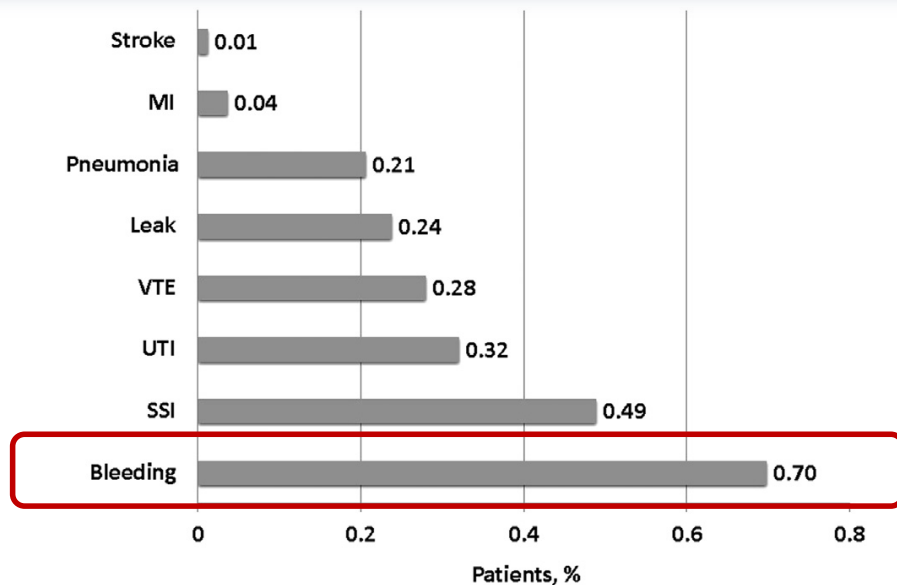
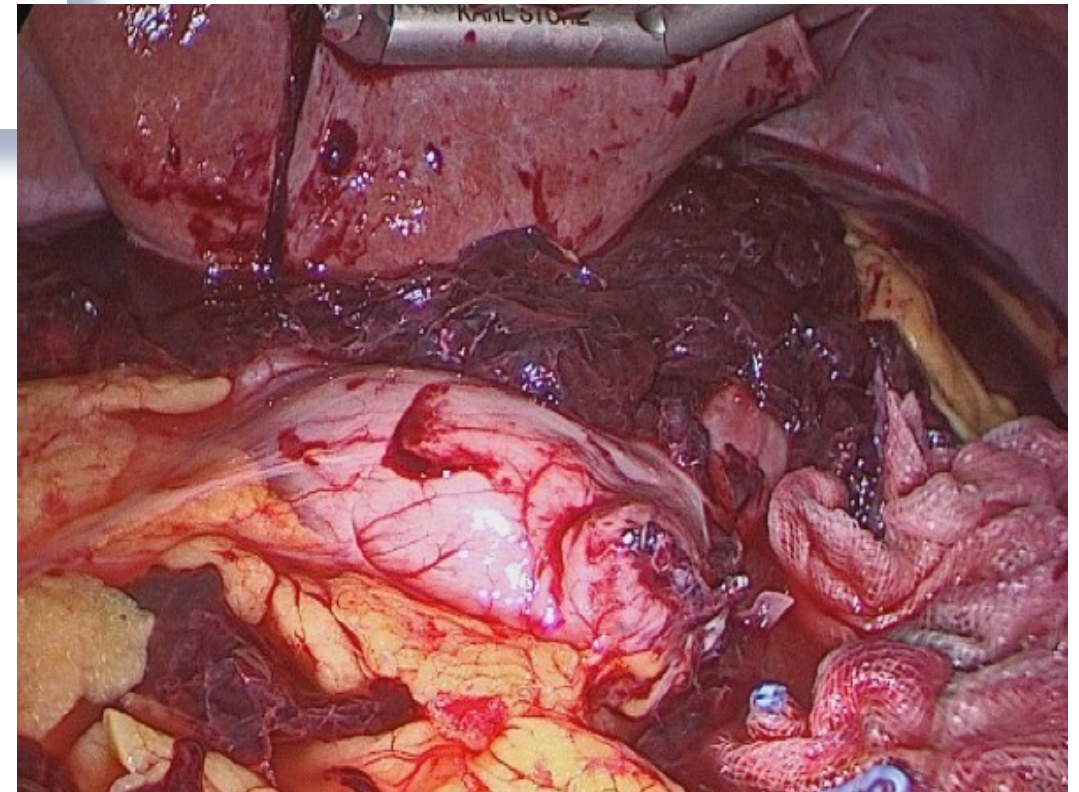


Fig. 1. Frequency of 30-day postoperative complications from study population of 135,413 bariatric surgery patients. MI = myocardial infarction; VTE = venous thromboembolism; UTI = urinary tract infection; SSI = surgical site infection.





Intraoperative Bleeding

- ✓ Staple line
- ✓ Anastomosis
- ✓ Spleen
- ✓ Liver

Early postoperative Bleeding (< 48h)

- ✓ Staple line
- ✓ Anastomosis
- ✓ Abdominal wall

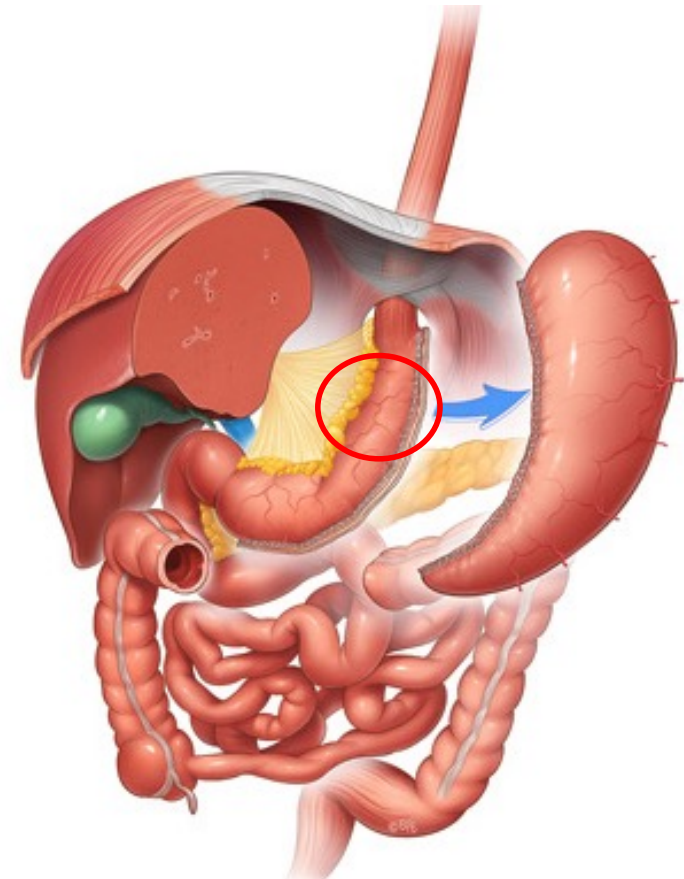
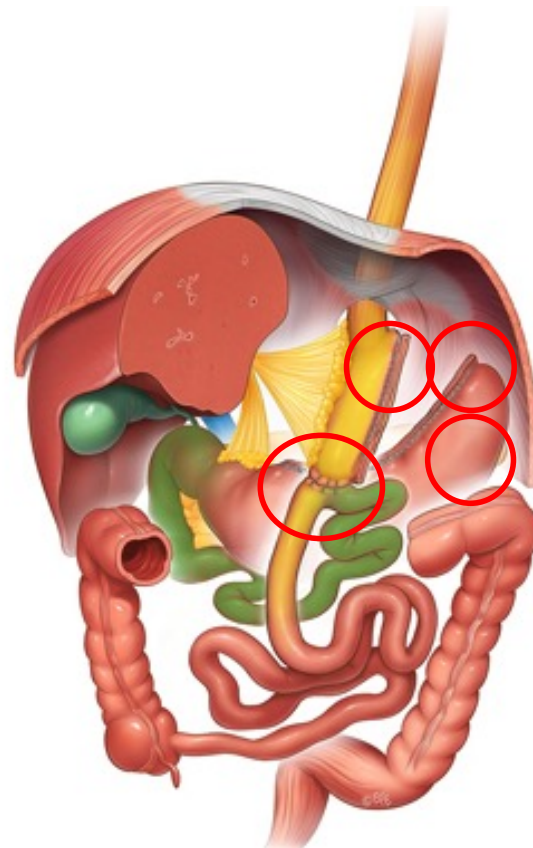
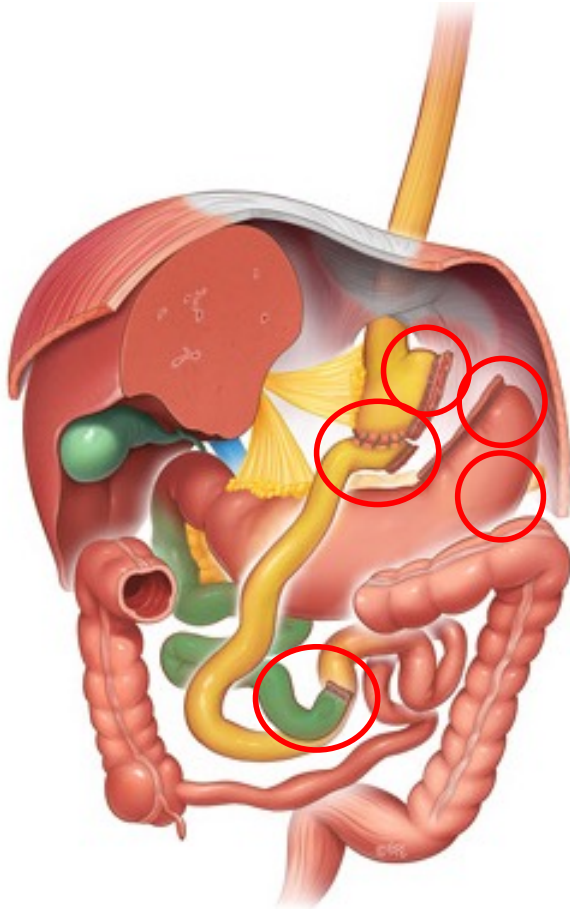
Late postoperative Bleeding

- ✓ Marginal Ulcers

active bleeding versus hematoma

RYGB > OAGB > Sleeve

1-4.4% > 3% > 2%





- ✓ Abdominal pain
- ✓ Dizziness
- ✓ Sweating
- ✓ Oliguria (< 500ml/24h)/Anuria
- ✓ Hypotension
- ✓ Tachycardia
- ✓ Decreased hemoglobin level
- ✓ Drain?

Extraluminal

- ✓ Free intraabdominal liquid

Intraluminal

- ✓ Hematemesis
- ✓ Melena/Hematochezia
- ✓ Chronic anemia



Early Bleeding After Laparoscopic Roux-en-Y Gastric Bypass: Incidence, Risk Factors, and Management — a 21-Year Experience

Maja Odovic^{1,2} · Daniel Clerc¹ · Nicolas Demartines^{1,2} · Michel Suter^{1,2,3}

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3235

Table 2 Clinical presentation of bleeding

	All patients with POB (= 72)	ILB (n = 52)	ELB (n = 20)	p-value
Bleeding onset (days)	1 (0–23)	2 (0–23)	1 (0–7)	0.12
Coagulation status				
- Antiaggregating therapy	11 (15%)	7 (13%)	4 (20%)	0.49
- Anticoagulation therapy	3 (4%)	2 (4%)	1 (5%)	0.83
Clinical presentation				
- Tachycardia	45 (63%)	32 (62%)	13 (65%)	0.79
- Hematochezia	32 (46%)	32 (63%)	0	-
- Abdominal pain	30 (42%)	26 (50%)	4 (20%)	0.02
- Hypotension	23 (33%)	14 (27%)	9 (47%)	0.14
- Hematemesis	18 (25%)	18 (35%)	0	-
Hemoglobin (g/L)				
- Preoperative	141 (108–176)	140 (108–175)	140 (130–176)	0.26
- Postoperative	93 (55–151)	93 (55–146)	95 (60–151)	0.53
- Hemoglobin drop	46 (1–88)	46 (6–86)	41 (1–88)	0.85

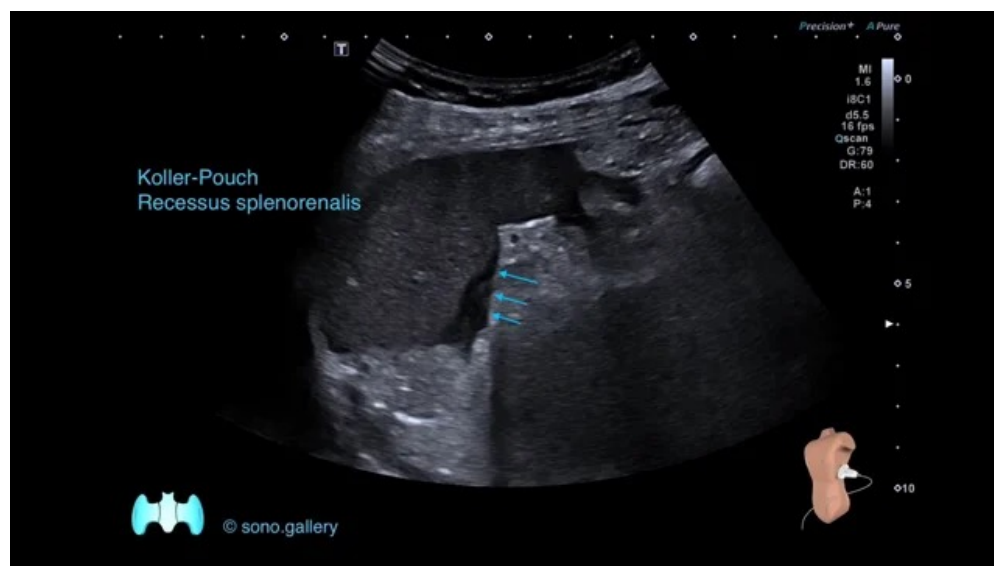
Data is expressed as n (%) or median (range). *POB* post-operative bleeding, *ILB* intra-luminal bleeding, *ELB* extra-luminal bleeding



Morison Pouch



Douglas Pouch



Koller Pouch



ELSEVIER

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SURGERY FOR OBESITY
AND RELATED DISEASES

Original article

Incidence and management of bleeding complications after gastric bypass surgery in the morbidly obese

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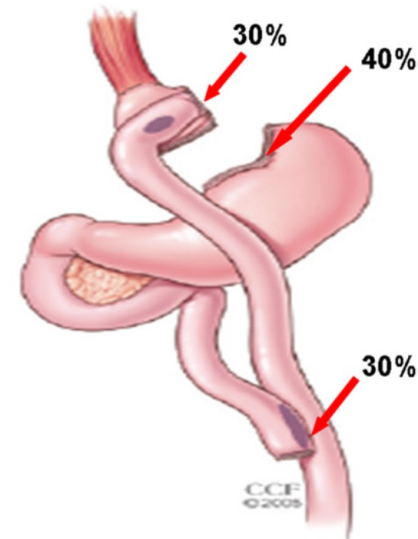
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CT scan with iv contrast/ angiography

A



B

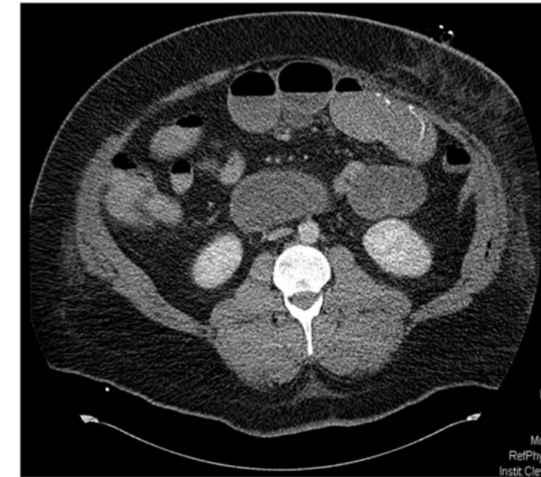


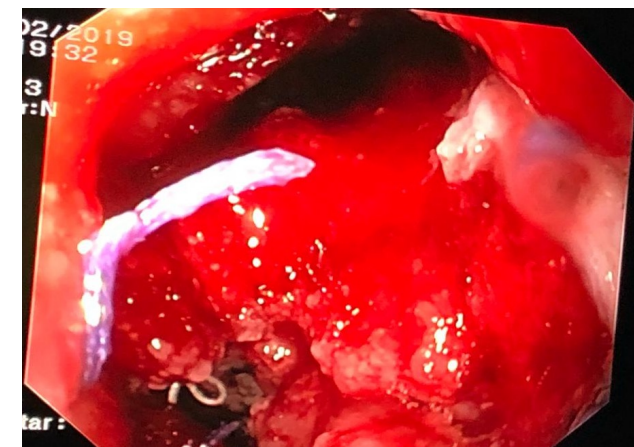
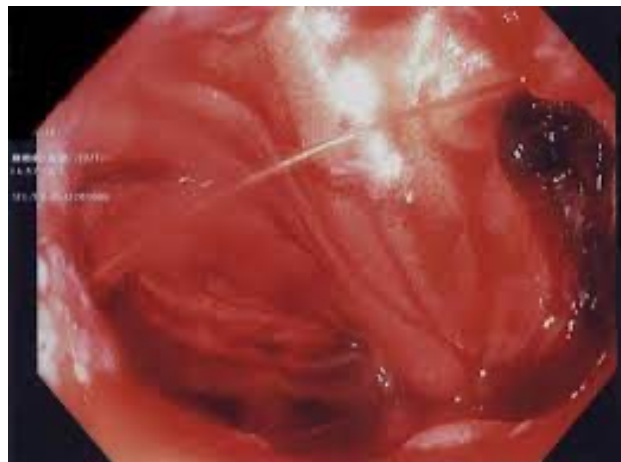
Fig. 1. (A) Sites of staple line bleeding. Of 10 cases in which bleeding was from a staple line, 40% were from the gastric remnant staple line, 30% from the gastrojejunal staple line, and 30% from the jejunojejunal staple line. (B) Abdominal computed tomography scan from patient with staple line bleeding at jejunojejunal staple line. Patient presented with features of bowel obstruction, secondary to intraluminal clot obstructing proximal part of common limb.

UPPER ENDOSCOPY



diagnostic and therapeutic purposes

- epinephrine injection
- thermal coagulation
- endoscopic clips



risk of iatrogenic dehiscence and perforation at the gastrojejunal anastomosis?

→ diagnostic laparoscopy for exploration and treatment?



Postoperative bleeding after laparoscopic Roux en Y gastric bypass: predictors and consequences

Syed Nabeel Zafar¹ · Kaylie Miller² · Jessica Felton¹ · Eric S. Wise¹ · Mark Kligman^{1,3}

Table 2 Multivariable predictors of postoperative bleed after laparoscopic Roux en Y gastric bypass (only significant variables are listed)

Variable	Categories	Odds ratio	95% CI	P-value
Preoperative hematocrit level	< 21 (reference)	1.00	–	–
	36–45	0.25	0.08–0.78	0.020
	> 45	0.29	0.09–0.97	0.044
History of DVT	Yes	1.62	1.02–2.59	0.043
	No	1.00	–	–
History of renal insufficiency	Yes	2.55	1.43–4.52	0.001
	No	1.00	–	–
Therapeutic anticoagulation	Yes	2.44	1.69–3.53	<0.001
	No	1.00	–	–
Robotic approach	Yes	0.50	0.32–0.77	0.002
	No	1.00	–	–
Revisional surgery	Yes	1.45	1.06–1.97	0.019
	No	1.00	–	–
Converted to open	Yes	3.37	1.42–7.97	0.006
	No	1.00	–	–
Drain placed	Yes	1.40	1.18–1.67	<0.001
	No	1.00	–	–
Assistant level of training	Resident	1.00	–	–
	Attending non-bariatric	0.60	0.38–0.97	0.038

Original article

Predictors and outcomes of bleed after sleeve gastrectomy: an analysis of the MBSAQIP data registry

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Noah Switzer, M.P.H., M.D., F.R.C.P.C.^a, Daniel W. Birch, M.Sc., M.D., F.R.C.S.C.^{a,b},
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Received 9 January 2019; accepted 19 July 2019

Bleeding was associated with a mortality of 1.0% versus 0.1% among patients without bleeding.

Table 2
LSG complications in patients with and without a bleed

	Nonbleed n = 174,237	Bleed n = 1116	P Value
Mortality	122 (.07)	11 (.99)	<.001
Serious complication	3568 (2.1)	-	
Any complication	4366 (2.5)	-	
Cardiac complication	84 (.1)	17 (1.5)	<.001
Pneumonia	198 (.1)	18 (1.6)	<.001
AKI	153 (.09)	33 (3.0)	<.001
Pulmonary embolus	428 (.3)	13 (1.2)	<.001
Deep SSI	275 (.2)	29 (2.6)	<.001
Wound disruption	47 (.03)	4 (.4)	<.001
Reoperation 30 d	1112 (.6)	352 (31.5)	<.001
Intervention 30 d	1582 (.9)	132 (11.8)	<.001
Readmission 30 d	5320 (3.1)	269 (24.1)	<.001

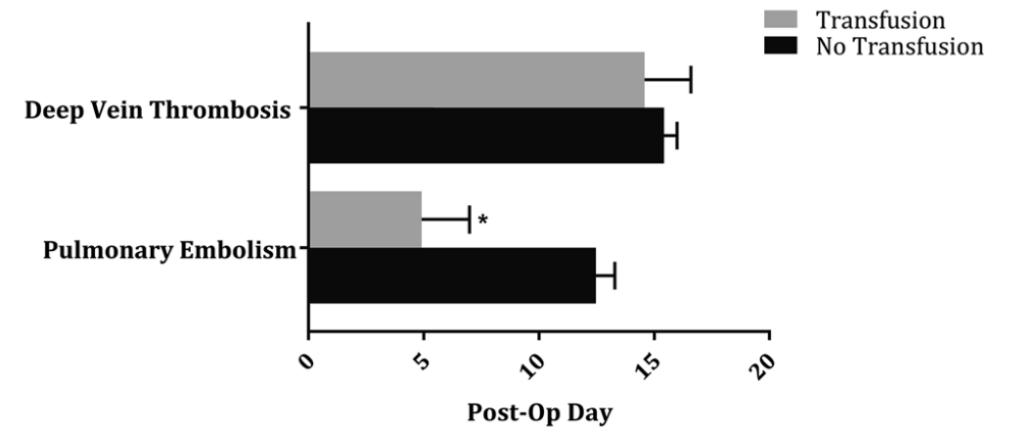
LSG = laparoscopic sleeve gastrectomy; AKI = acute kidney injury; SSI = surgical site infection.

Perioperative bleeding and blood transfusion are major risk factors for venous thromboembolism following bariatric surgery

Alexander W. Nielsen¹ · Melissa C. Helm¹ · Tammy Kindel¹ · Rana Higgins¹ · Kathleen Lak¹ · Zachary M. Helmen¹ · Jon C. Gould¹

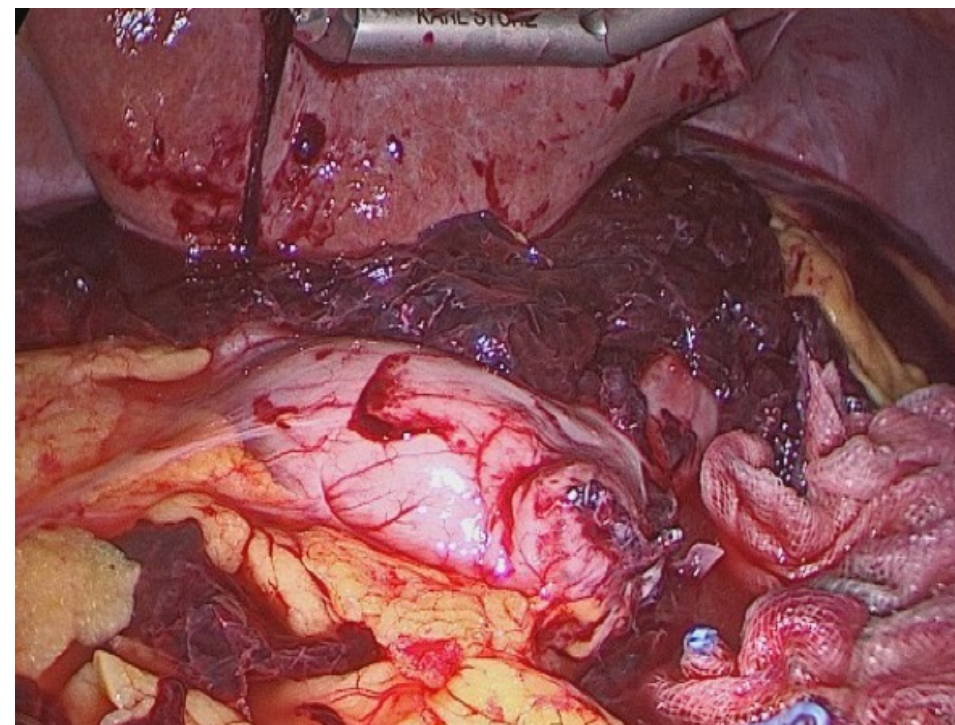
Rate of bleeding and VTE	GBP	SG	Revision	BPD
Bleeding (<i>n</i> = 774)	455 (1.6%)	287 (1.0%)	20 (6.2%)	12 (2.4%)
No bleeding (<i>n</i> = 58,267)	27,690 (98.4%)	29,793 (99.0%)	304 (93.8%)	480 (97.6%)
VTE (<i>n</i> = 274)	130 (0.5%)	129 (0.4%)	6 (1.9%)	9 (1.8%)
No VTE (<i>n</i> = 58,767)	28,015 (99.5%)	29,951 (99.6%)	318 (98.1%)	483 (98.2%)

VTE venous thromboembolism, GBP gastric bypass procedure, SG sleeve gastrectomy, BPD biliopancreatic diversion



CONCLUSION

- ✓ IDENTIFICATION OF RISK FACTORS
- ✓ TIME: EARLY BLEEDING < 48h
- ✓ CLINICAL SIGNS AND SYMPTOMS
- ✓ RISK REGARDING SURGICAL PROCEDURE
- ✓ INTRALUMINAL VERSUS EXTRALUMINAL
- ✓ ULTRASOUND, UPPER ENDOSCOPY, CT SCAN
- ✓ HIGHER PERIOPERATIVE MORBIDITY AND MORTALITY



→ **PREVENTION**

<https://sites.utu.fi/sfbariscore/>



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SF-BARI Score

Scoring system for evaluation of treatment outcome in bariatric surgery.

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