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## Safety of Revision Sleeve Gastrectomy Compared to Roux-Y Gastric Bypass After Failed Gastric Banding: Analysis of the MBSAQIP

Janik MR, et al (2017) Ann Surg. [1]

**Objective:** The aim of this study was to assess the safety of revisional surgery to laparoscopic sleeve gastrectomy (LSG) compared to laparoscopic Roux-Y gastric bypass (LRYGB) after failed laparoscopic adjustable gastric banding (LAGB).

**Background:** The number of reoperations after failed gastric banding rapidly increased in the United States during the last several years. A common approach is band removal with conversion to another weight loss procedure such as gastric bypass or sleeve gastrectomy in a single procedure. The safety profile of those procedures remains controversial.

**Methods:** Preoperative characteristics and 30-day outcomes from the Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program Participant Use Files 2015 were selected for all patients who underwent a 1-stage conversion of LAGB to LSG (conv-LSG) or LRYGB

(conv-LRYGB). Conv-LSG cases were matched (1:1) with conv-LRYGB patients by age ( $\pm 1$  year), body mass index ( $\pm 1$  kg/m), sex, and comorbidities including diabetes, hypertension, hyperlipidemia, venous stasis, and sleep apnea.

**Results:** A total of 2708 patients (1354 matched pairs) were included in the study. The groups were closely matched as intended. The mean operative time in conv-LRYGB was significantly longer in comparison to conv-LSG patients ( $151 \pm 58$  vs  $113 \pm 45$  minutes,  $P < 0.001$ ). No mortality was observed in either group. Patients after conv-LRYGB had a clinically increased anastomotic leakage rate (2.07% vs 1.18%,  $P = 0.070$ ) and significantly increased bleed rate (2.66% vs 0.44%,  $P < 0.001$ ). Thirty-day readmission rate was significantly higher in conv-LRYGB patients (7.46% vs 3.69%,  $P < 0.001$ ), as was 30-day reoperation rate (3.25% vs 1.26%,  $P < 0.001$ ). The length of hospital stay was longer in conv-LRYGB.

**Conclusions:** A single-stage conversion of failed LAGB leads to greater morbidity and higher complication rates when converted to LRYGB versus LSG in the first 30 days postoperatively. These differences are particularly notable with regards to bleed events, 30-day reoperation, 30-day readmission, operative time, and hospital stay.

**Commentaire :** Il s'agit de la première étude, étudiant les risques postopératoires à 30 jours d'une révision en un temps après anneau gastrique. Cette étude, à partir de la database américaine portant sur 2 708 patients, compare les 2 techniques de révision suivantes : la sleeve gastrectomie versus le gastrique bypass. Les patients opérés en 2015 étaient appariés pour éviter tout biais selon leur âge, leur BMI, leur sexe et leurs comorbidités (diabète, hypertension, hyperlipidémie, stase veineuse et syndrome d'apnée du sommeil). Les résultats mettent en évidence dans cette série sans mortalité postopératoire, un taux plus important non significatif de fistule à 30 jours dans le groupe gastrique bypass vs sleeve (2,07 % vs 1,18 %). Ressortait de manière significative, un taux de saignement (2,66 % vs 0,44 %), un taux de réadmission à 30 jours (7,46 % vs 3,69 %), de réintervention (3,25 % vs 1,26 %) et un taux d'embolie pulmonaire (1,33 % vs 0,15 %) plus important après gastrique bypass versus sleeve. Il existait comme attendu un temps opératoire plus long ( $151 \pm 58$  min vs  $113 \pm 45$  min) et une durée d'hospitalisation plus longue ( $2,3 \pm 2,8$  jours vs

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1,8 ± 2,1 jours) après gastrique bypass versus sleeve. Les auteurs concluent sous réserve bien sûr de l'absence dans leur étude de l'analyse de la perte de poids après ce second temps, que la sleeve gastrectomie est une intervention plus sûre à court terme que le gastrique bypass. La question posée est celle de savoir si cette augmentation de cette morbidité est justifiée par une perte de poids plus importante en postopératoire. La méta-analyse de Magouliotis et al. met en évidence une perte de poids plus importante après gastrique bypass versus sleeve gastrectomie à 2 ans dans le cadre d'une conversion d'un anneau gastrique (+ 12 kgs) [2]. Enfin, dans cette étude, seules les chirurgies de révision en un temps étaient étudiées. La question de savoir si cette chirurgie doit être réalisée en un temps ou deux temps reste encore débattue, même si la littérature ne retrouve pas de différence significative en terme notamment de fistule postopératoire [3].

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

Nielsen AW, et al (2017) Surg Endosc [4]

*Background:* Morbidly obese patients are at increased risk for venous thromboembolism (VTE) after bariatric surgery. Perioperative chemoprophylaxis is used routinely with bariatric surgery to decrease the risk of VTE. When bleeding occurs, routine chemoprophylaxis is often withheld due to concerns about inciting another bleeding event. We sought to evaluate the relationship between perioperative bleeding and postoperative VTE in bariatric surgery.

*Methods:* The American College of Surgeons-National Surgical Quality Improvement Program (NSQIP) dataset between 2012 and 2014 was queried to identify patients who underwent bariatric surgery. Gastric bypass (n=28,145), sleeve gastrectomy (n=30,080), bariatric revision (n=324), and biliopancreatic diversion procedures (n=492) were included. Univariate and multivariate regressions were used to determine perioperative factors predictive of postoperative VTE within 30 days in patients who experience a bleeding complication necessitating transfusion.

*Results:* The rate of bleeding necessitating transfusion was 1.3%. Bleeding was significantly more likely to occur in gastric bypass compared to sleeve gastrectomy (1.6 vs. 1.0%) (p<0.0001). For all surgeries, increased age, length of stay, operative time, and comorbidities including hypertension, dyspnea with moderate exertion, partially dependent functional status, bleeding disorder, transfusion prior to surgery, ASA class III/IV, and metabolic syndrome increased the perioperative bleeding risk (p<0.05). Multivariate

analysis revealed that the rate of VTE was significantly higher after blood transfusion [Odds Ratio (OR)=4.7; 95% CI 2.9-7.9; p<0.0001]. Predictive risk factors for VTE after transfusion included previous bleeding disorder, ASA class III or IV, and COPD (p<0.05).

*Conclusions:* Bariatric surgery patients who receive postoperative blood transfusion are at a significantly increased risk for VTE. The etiology of VTE in those who are transfused is likely multifactorial and possibly related to withholding chemoprophylaxis and the potential of a hypercoagulable state induced by the transfusion. In those who bleed, consideration should be given to reinitiating chemoprophylaxis when safe, extending treatment after discharge, and screening ultrasound.

*Commentaires :* Cette étude à partir de la data base américaine des patients opérés entre 2012 et 2014 a pour objectif d'étudier si la transfusion périopératoire plus ou moins avec l'arrêt de la thromboprophylaxie engendre une augmentation du risque de développer une thrombose veineuse profonde (TVP) en postopératoire d'une chirurgie bariatrique. Actuellement l'embolie pulmonaire représente 40 % de la mortalité post opératoire en chirurgie bariatrique [5]. 59 041 patients ont été analysés. Les procédures étaient la sleeve gastrectomie (30 080 patients), le gastric bypass (28 145 patients), et la diversion bilio-pancréatique (492 patients) et la révision (324 patients). Dans cette série 274 patients (0,46 %) développaient une TVP. 774 patients ont reçu une transfusion en postopératoire, et sur ces 774 patients, 16 (2,07 %) ont développés une TVP. Il n'existait pas de différence significative de développer une thrombose veineuse profonde entre la sleeve gastrectomie et le gastrique bypass. Les risques de développer un saignement en postopératoire étaient : la réalisation d'un gastrique bypass, d'une chirurgie ouverte, un score ASA élevé, un âge plus élevé, un SAS sévère, une HTA, des épisodes de saignement ou de transfusion antérieurs. Les facteurs de risque de développer une TVP étaient la chirurgie ouverte, la chirurgie de révision, la réalisation d'une dérivation biliopancréatique, un score ASA élevé, un sexe masculin, un BMI plus haut et un SAS sévère. La réalisation d'une transfusion pour un saignement augmentait le taux de TVP par 5. Ce risque était augmenté probablement par l'hypercoagulation induite après la transfusion et l'arrêt de la thromboprophylaxie. Le saignement post chirurgie fait partie actuellement des complications les plus fréquentes [6], le matériel opératoire (renforcement ligne agrafes, hémostatiques, etc.) permet de le diminuer [7]. La question posée ici est de savoir si chez les patients à risque de développer une TVP, calculé notamment à l'aide d'algorithmes [8], bénéficient ou non de la reprise précoce après saignement d'une anticoagulation préventive. Les auteurs pour leur part recommandent la reprise de celle-ci rapidement après l'arrêt du saignement chez les patients à risques.

## The First Consensus Statement on One Anastomosis/Mini Gastric Bypass (OAGB/MGB) Using a Modified Delphi Approach

Mahawar KK, et al (2017) *Obes Surg* [9]

**Background:** An increasing number of surgeons worldwide are now performing one anastomosis/mini gastric bypass (OAGB/MGB). Lack of a published consensus amongst experts may be hindering progress and affecting outcomes. This paper reports results from the first modified Delphi consensus building exercise on this procedure.

**Methods:** A committee of 16 recognised opinion-makers in bariatric surgery with special interest in OAGB/MGB was constituted. The committee invited 101 OAGB/MGB experts from 39 countries to vote on 55 statements in areas of controversy or variation associated with this procedure. An agreement amongst  $\geq 70.0\%$  of the experts was considered to indicate a consensus.

**Results:** A consensus was achieved for 48 of the 55 proposed statements after two rounds of voting. There was no consensus for seven statements. Remarkably, 100.0% of the experts felt that OAGB/MGB was an “acceptable mainstream surgical option” and 96.0% felt that it could no longer be regarded as a new or experimental procedure. Approximately 96.0 and 91.0% of the experts felt that OAGB/MGB did not increase the risk of gastric and oesophageal cancers, respectively. Approximately 94.0% of the experts felt that the construction of the gastric pouch should start in the horizontal portion of the lesser curvature. There was a consensus of 82, 84, and 85% for routinely supplementing iron, vitamin B12, and vitamin D, respectively.

**Conclusion:** OAGB/MGB experts achieved consensus on a number of aspects concerning this procedure but several areas of disagreements persist emphasising the need for more studies in the future.

*Commentaires : L'approche Delphi est une technique méthodologique validée permettant d'établir un consensus entre experts. Ce protocole a été utilisé notamment pour établir les recommandations du second Diabetes Surgery Summit (DSS-II) concernant la chirurgie métabolique [10]. En dépit d'un niveau de preuve faible (accord d'expert), cet article a le mérite d'identifier les points d'accord de désaccord et les zones d'ombres de cette technique. Cette étape préalable, est un prérequis essentiel afin de permettre l'évaluation du bypass en oméga dans le cadre d'études randomisées contrôlées telles que le PHRC YOMEGA coordonnée par le professeur Maude Robert.*

## Long-Term Follow-up after Bariatric Surgery in a National Cohort

Thereaux J, et al (2017) *Ann Surg* [11]

**Background:** Lifelong medical follow-up is mandatory after bariatric surgery. The aim of this study was to assess the 5-year follow-up after bariatric surgery in a nationwide cohort of patients.

**Methods:** All adult obese patients who had undergone primary bariatric surgery in 2009 in France were included. Data were extracted from the French national health insurance database. Medical follow-up (medical visits, micronutrient supplementation and blood tests) during the first 5 years after bariatric surgery was assessed, and compared with national and international guidelines.

**Results:** Some 16,620 patients were included in the study. The percentage of patients with at least one reimbursement for micronutrient supplements decreased between the first and fifth years for iron (from 27.7 to 24.5 per cent;  $P < 0.001$ ) and calcium (from 14.4 to 7.7%;  $P < 0.001$ ), but increased for vitamin D (from 33.1 to 34.7%;  $P < 0.001$ ). The percentage of patients with one or more visits to a surgeon decreased between the first and fifth years, from 87.1 to 29.6% ( $P < 0.001$ ); similar decreases were observed for visits to a nutritionist/endocrinologist (from 22.8 to 12.4%;  $P < 0.001$ ) or general practitioner (from 92.6 to 83.4%;  $P < 0.001$ ). The mean number of visits to a general practitioner was 7.0 and 6.1 in the first and the fifth years respectively. In multivariable analyses, male sex, younger age, absence of type 2 diabetes and poor 1-year follow-up were predictors of poor 5-year follow-up.

**Conclusion:** Despite clear national and international guidelines, long-term follow-up after bariatric surgery is poor, especially for young men with poor early follow-up.

*Commentaires: Cette étude épidémiologique évalue pour la première fois la qualité du suivi après chirurgie bariatrique en France. Le contexte de cette étude.*

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