Pennington Biomedical Research Center
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Understanding A Rare Event: Early Marginal Ulceration after Primary RYGB in the MBSAQIP

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Introduction

- Early Marginal Ulceration (MU) is a recognized postoperative complication following Roux-en-Y Gastric Bypass (RYGB).
- Late MU development is comparatively better understood, with established risk factors including nicotine use, NSAIDs, and H. pylori infection.
- Early MU, occurring within 30 days post-surgery, is not as thoroughly studied due to its rarer occurrence.
- It is hypothesized that early MU post-primary RYGB could be linked to specific perioperative risk factors that have yet to be clearly defined.

Methods

- Analyzed data from MBSAQIP (2015-2021): 1,346,468 records reviewed.
- Focus on primary RYGB patients: 345,112 initially, 291,625 after exclusions.
- Identified all early MU cases within the study cohort.
- Compared patient characteristics and case details between those with and without early MU.
- Utilizing signifigant bivariate factors early MU and was analyzed in a rare event regression model

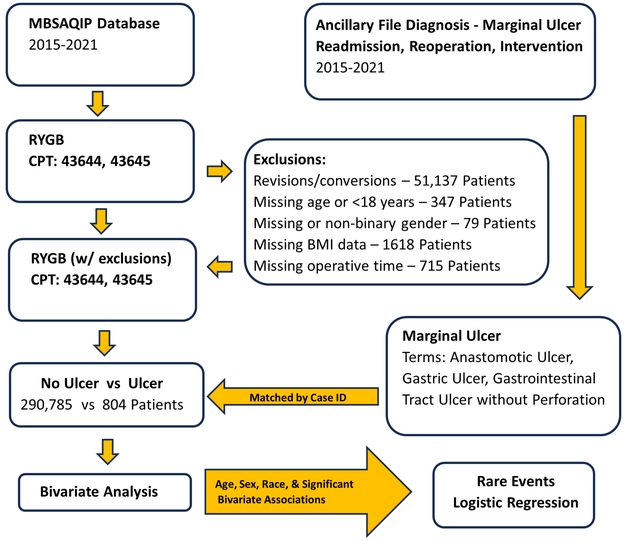


Figure 1 - Methodological flowchart, outlining the data cleaning and statistical analysis process employed in the study. Abbreviations: MBSAQIP, Metabolic and Bariatric Surgery Accreditation

Results

- Early MU occurred in approximately 0.29% of primary RYGB patients, with a higher incidence associated with specific baseline characteristics like higher BMI, race, and certain medical histories.
- Procedural factors such as surgeries not performed by metabolic/bariatric surgeons and extended operative times were linked to increased rates of early MU.
- Age, insulin-dependent diabetes, prior PTC, DVT, immunosuppressive therapy, and anticoagulation status were significant predictors of early MU in logistic regression analysis.

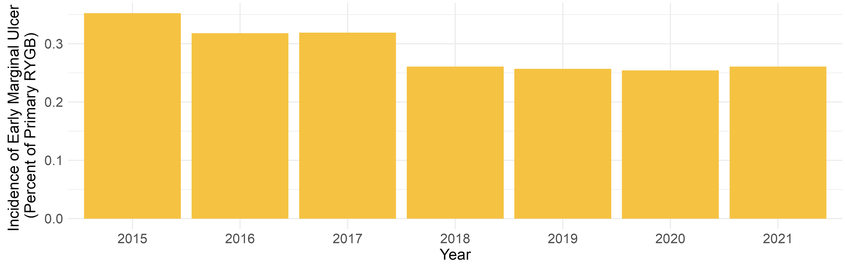


Figure 2 - Percentage of documented cases of early marginal ulcer in primary Roux-en-Y gastric bypass (RYGB) by year, Metabolic and Bariatric Surgery Accreditation and Quality Improvement Program (MBSAQIP) years 2015-2021.

Conclusions

- Early MU after RYGB is uncommon, with recent data indicating a lower incidence than previously believed, pointing to potential advancements in patient preparation and surgical technique.
- Ongoing evaluation of contributing elements to early MU is crucial for enhancing perioperative care for patients susceptible to this complication.

Institutions

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Rare Events Logistic Regression

	OR (95% CI)	p-value
Age, year	0.99 (0.98-1.00)	0.002
Male vs Female	1.02 (0.86-1.22)	0.788
Black vs White	1.60 (1.35-1.90)	<.001
Hispanic vs White	0.84 (0.67-1.06)	0.141
Other/Unknown vs White	0.71 (0.53-0.96)	0.028
BMI	1.01 (1.00-1.02)	0.137
Other vs Bariatric Surgeon	1.24 (1.05-1.48)	0.013
Operative time, minutes	1.002 (1.000-1.003)	0.006
Smoker	1.19 (0.94-1.51)	0.147
Insulin Diabetes	1.39 (1.15-1.69)	<.001
Non-insulin Diabetes	1.07 (0.90-1.27)	0.467
PTC	2.44 (1.78-3.34)	<.001
DVT History	2.03 (1.43-2.89)	<.001
PE History	1.12 (0.72-1.75)	0.625
Immunosuppressive Therapy	1.88 (1.31-2.71)	<.001
Therapeutic Anticoagulation	1.74 (1.27-2.37)	<.001

Table 1 - Odds ratios and 95% confidence limits from multivariable rare events logistic regression models of developing a marginal ulcer after primary RYGB, MBSAQIP 2015-2021. Abbreviations: OR, odds ratio; CI, confidence interval; BMI, body mass index; PTC, percutaneous cardiac intervention; DVT, deep vein thrombosis; PE, pulmonary embolus.