Graham Patch Is a Reasonable Initial Intervention for Post-Bariatric Marginal Ulcer Perforation or Bleeding

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Background

- The current standard of care prefers a revisional surgery for marginal or gastrojejunal (GJ) ulcer perforation or bleeding following bariatric surgery.
- However, some emerging literature asserts that Graham patch is a safe alternative in the acute setting.
- Herein, we aim to compare the short-term safety profile of Graham patch versus immediate GJ revision.

Methods

- The **National Surgical Quality Improvement Project data from 2017-2019 and 2021-2022** was used to identify all patients presenting with marginal ulcer after bariatric surgery.
- Patients who presented with marginal ulcer without hemorrhage or perforation were excluded.
- Patients were divided into **Graham patch and revisional surgery groups**. Logistic regression analysis was performed using Graham patch as the reference category.
- The primary outcome was mortality. A group of common morbidities was used as secondary outcomes.
- Regression analysis was adjusted for **smoking status, steroid use, pre-operative sepsis, case type (emergent/urgent or elective), and acute vs chronic nature of the ulcer**.

Results

- We identified **345** patients for analysis. Of these, 263 underwent Graham patch and **82** underwent revisional surgery.
- Demographic analysis revealed no significant differences between the two groups relating to age, sex, and ASA score.
- Moreover, the groups were similar concerning comorbidities including hypertension, steroid use, smoking, diabetes mellitus, COPD, and congestive heart failure.
- Logistic regression indicates that patients who underwent revision surgery for gastrojejunal ulcer perforation or bleeding were more likely to have respiratory complications including postoperative pneumonia (**OR 9.396**, **p-value 0.007**) and ventilator dependence for more than 48 hours (**OR 6.31 p-value 0.012**) **(Table 1).**
- The revision surgery group had a significantly greater incidence of organ space infections (**OR 5.226 p-value 0.018**) along with a greater need for blood transfusions (**OR 5.806 p-value 0.006**).
- The groups were similar for the outcomes of unplanned reoperation, wound disruption, hospital length of stay, and 30-day mortality.

Table 1: **Adjusted Logistic Regression of Clinical Outcomes considering Gram Patch as the reference category**

Outcomes	OR	95% CI		p-value
		Lower	Upper	
Unplanned Reoperation	**3.988**	0.775	20.528	0.098
Postoperative Pneumonia	**9.396**	1.824	48.402	0.007
Bleeding Transfusions	**5.806**	1.662	20.282	0.006
Organ Space Infections	**5.226**	1.324	20.636	0.018
Wound Disruption	**5.411**	0.288	101.695	0.259
Hospital Length of Stay	**1.117**	0.42	2.973	0.825
On Ventilator >48 hours	**6.31**	1.512	26.338	0.012
Mortality30days	**8.108**	0.892	73.719	0.063

Variables adjusted for include acute vs chronic disease, smoking status, steroids, case type, and pre-operative sepsis.

Conclusion

- Initially, patients who present with a gastric ulcer perforation or bleeding following bariatric surgery should be managed with Graham patch instead of revision surgery, as the former approach is associated with lower incidence of early morbidity including postoperative pneumonia, need for blood transfusions, ventilator dependence, and organ space infections.
- This may be used to temporize the patient until they are stable enough to undergo the GJ revision shown to be superior in the long-term.