Characterizing Features of Dehydration In Patients With Early Marginal Ulcer After Roux-En-Y Gastric Bypass

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BACKGROUND

- Reported incidence of Marginal Ulcer (MU) after Roux-en-Y Gastric Bypass (RYGB) ranges from 0.6% to 25% and is divided into early (<90-days) and late (>90-days) with most occurring early (eMU)
- Risk factors are multifactorial including surgical technique, pouch size, staple height/diameter, helicobacter pylori infection, diabetes, smoking, acid-suppression therapy, use of NSAIDs.
- Anecdotally, we noticed patients with symptoms of, or intervention for, dehydration developed eMUs.
- We therefore examined the association of eMU formation and dehydration within 90-days post-operatively.

METHODS

Single Center Retrospective Review: Patients who developed eMU (n=43) to those without t (n=316) within 90 days of primary laparoscopic RYGB.

Comparison Across Three Domains:

- *Pre-Operative*: medical and social histories, pre-operative EGD
- *Peri-Operative*: IV and PO fluid intake, anti-emetic use, length of stay (LOS)
- *Post-Operative*: patient reported symptoms at clinic and ED visits, incidence of post-operative hydration

RESULTS

Pre-Operative Phase

- eMU group was less likely to have baseline GERD, more likely to be using a non-selective NSAID, and more likely to be started on a PPI after screening EGD
- Rates of gastric ulceration and H. pylori were higher, though not significantly, on screening EGD in the eMU group

Peri-Operative

- No differences across all examined variables including IV/PO fluid intake, anti-emetic use, ulcerogenic discharge medications, and LOS

Post-Operative

- Post-Op EGD demonstrated a 12% eMU rate detected ~45 days after surgery.
- eMU group was more likely to present to the ED with nausea within 14-days and 30-days.
- eMU group was more likely to receive IV hydration in any setting at 14, 30, and 42-days

	No Ulcer (n=316)	Ulcer (n=43)	P-value
Baseline Medical/Social Hx			
Diabetes	119 (37.8%)	12 (28.6%)	0.2449
GERD	211 (66.8%)	20 (46.5%)	0.0093
Current Smoker	3 (1.0%)	1 (2.3%)	0.4234
Former Smoker	137 (43.6%)	17 (39.5%)	0.6111
Medication Hx			
PPI	141 (67.8%)	13 (65.0%)	0.7992
NSAIDs	133 (42.1%)	15 (34.9%)	0.3679
Non-Selective	32 (10.1%)	9 (20.9%)	0.0366
Pre-Op EGD			
Normal	62 (19.9%)	10 (23.3%)	0.6122
Gastric Ulcer	6 (3.0%)	2 (11.8%)	0.0679
H. Pylori	23 (7.8%)	6 (16.7%)	0.0783
Start PPI After EGD	21 (7.3%)	7 (19.4%)	0.0174

	No Ulcer (n=316)	Ulcer (n=43)	P-value
Perioperative Intake (Median [IQR])			
IV Fluid (L)	3.9 (3.2, 5.0)	3.8 (3.0, 4.4)	0.2867
POD 0 PO intake (mL)	150 (0.0, 320)	120 (0.0, 200)	0.1301
Ulcerogenic Discharge Medications			
Aspirin	35 (11.1%)	0 (0.0%)	0.0214
Carafate	40 (12.7%)	5 (11.6%)	0.8369
Hospital LOS (Days)	2 (2, 2)	2 (2, 2)	0.5392

	No Ulcer (n=316)	Ulcer (n=43)	P-value
Any Incidence IV Hydration Post-Op			
<14 Days	20 (6.33%)	7 (16.28%)	0.0203
<30 Days	33 (10.44%)	14 (32.56%)	<.0001
<42 Days	39 (12.34%)	22 (51.16%)	<.0001

SUMMARY

- ✓ **Early MU after RYGB is still quite prevalent**
  - 12% incidence in this cohort
- ✓ **There were no observed differences in the peri-operative management of these groups**
- ✓ **The eMU group was more likely to present for IV hydration to clinic or the ED within the 60 day post operative period**

CONCLUSION

- **Need for IV hydration in the ED as early as 14-days after surgery is associated with eMU.**
- **There is an opportunity for more aggressive early prophylactic outpatient hydration.**
- **In light of an association with new PPI use and eMU, perhaps earlier gastric "priming" is warranted**

** Univariate analysis was performed using Kruskal-Wallis tests for continuous variables and chi-squared, or Fisher's exact tests for categorical variables. A $p<0.05$ was considered significant **