



ASSESSMENT OF THE OCCURRENCE OF MARGINAL ULCERS AFTER MINI GASTRIC BYPASS IN 6 MONTHS

General Surgery

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ABSTRACT

Background: Mini-gastric bypass (MGB) has been shown to be a valuable addition to the armamentarium of bariatric surgery. The present study was conducted to assess the occurrence of marginal ulcers after mini gastric bypass in 6 months. **Materials & Methods:** Results: Out of 200 patients, males were 120 and females were 80. Out of 200 patients, 14 had marginal ulcers. The mean height was 156.2 cm, weight was 67.4 kgs, BMI was 22.6 Kg/m² and Hb1Ac was 5.7%. Risk factors for ulcers were smoking in 5, alcohol in 2, stress in 1, NSAIDS in 2, steroids in 2, bile in 2, coffee in 1 and Helicobacter pylori in 1 case. The difference was significant (P<0.05). **Conclusion:** Common risk factors were smoking, alcohol, stress, NSAIDS, steroids, bile, coffee and Helicobacter pylori.

KEYWORDS

Smoking, marginal ulcers, mini gastric bypass

INTRODUCTION

Mini-gastric bypass (MGB) has been shown to be a valuable addition to the armamentarium of bariatric surgery. MGB has been a low risk surgery, which has a durable weight loss with a high level of patients satisfaction. In addition, MGB is simple to reverse or revise.¹ The Laparoscopic Mini-Gastric Bypass has become a popular bariatric surgery procedure. It is now being done as a routine procedure in most countries around the world.² In India MGB is the 2nd commonest procedure following the sleeve Gastrectomy, outpacing the standard Roux-en-Y Gastric Bypass [RYGB]. MGB was designed to overcome the limitations of RYGB and improve its outcomes. MGB constructs a lesser curvature gastric conduit to or below the "crow's foot" and an anastomosis to an anti-colic loop of jejunum 150–200 cm distal to the trietz ligament.³

The MGB was first performed by Rutledge in 1997 in the era of open bariatric surgery and at the dawn of the era of Minimally Invasive Surgery. The operation is based on sound general surgical principles combining a "non-obstructive" Collis Gastroplasty, which is an esophageal lengthening procedure with a Billroth II ante-colic Loop gastro-jejunostomy.⁴ As the medically accurate name was a bit much; and as it was the dawn of the era of Minimally Invasive Surgery, the simple application of these two routine general surgical procedures was named "Mini" Gastric Bypass.⁵ There is a growing number of publications supporting this operation to be a short and straightforward procedure with low complication rates and excellent outcomes. MGB addresses many perceived limitations of other procedures and offers many features of an ideal bariatric surgery.⁶ It has now been shown in many short and long term studies, as well as in many controlled prospective randomized trials, to result in excellent weight loss, good resolution of associated medical illness and very high levels of patient satisfaction.⁷ The present study was conducted to assess the occurrence of marginal ulcers after mini gastric bypass in 6 months.

MATERIALS & METHODS

This observational study was conducted on 200 patients in the department of General surgery at Mohak Hitech hospital and research centre between 1st April 2021- 30th September 2022. The work was started after the review & approval of protocol of study by Institutional Ethics and Research committees. All patients gave their written consent.

Inclusion criteria were all patients undergoing mini gastric bypass and all patients above 18 years of age. Exclusion criteria were patients not

giving consent for the study. All the patients of Covid 19 were included in the study. After recording a detailed clinical history, these patients were thoroughly examined. Parameters such as age, sex, height, weight, BMI, Hb1Ac, PPI prophylaxis and endoscopic findings were recorded on 3 months and 6 months follow up. Results were analysed statistically.

RESULTS

Table I

Total- 200		
Gender	Male	Female
Number	120	80

Table I shows that out of 200 patients, males were 120 and females were 80.

Table II Prevalence of marginal ulcer

Total	Prevalence
200	14

Table II shows that out of 200 patients, 14 had marginal ulcers.

Table III Assessment of parameters

Parameters	Mean
Height (cm)	156.2
Weight (Kg)	67.4
BMI (Kg/m ²)	22.6
Hb1Ac	5.7

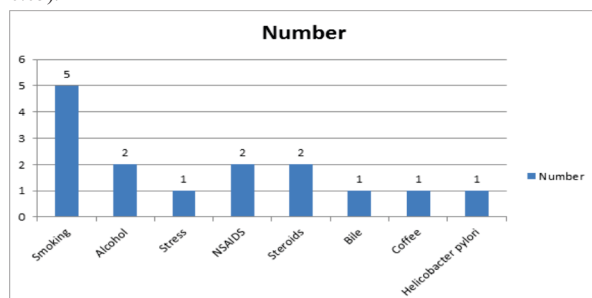
Table III shows that mean height was 156.2 cm, weight was 67.4 kgs, BMI was 22.6 Kg/m² and Hb1Ac was 5.7%.

Table IV Risk factors for ulcers

Risk factors	Number	P value
Smoking	5	0.02
Alcohol	2	
Stress	1	
NSAIDS	2	
Steroids	2	
Bile	1	
Coffee	1	
Helicobacter pylori	1	

Table IV, graph I shows that risk factors for ulcers were smoking in 5,

alcohol in 2, stress in 1, NSAIDS in 2, steroids in 2, bile in 2, coffee in 1 and *Helicobacter pylori* in 1 case. The difference was significant ($P < 0.05$).



Graph I Risk factors for ulcers

DISCUSSION

The etiology of marginal ulcer formation has been widely discussed and debated for over 30 years. Mason and colleagues in 1976 described high gastric pouch acidity as the culprit for marginal ulcer formation.⁶ This theory has been supported by others as well as by the strong association between marginal ulcer formation and the presence of a gastrogastric fistula. The procedure subsequently evolved to include a smaller gastric pouch in order to minimize acid production from retained parietal cells.⁷ Despite the trend of creating smaller gastric pouches and the absence of concomitant gastrogastric fistulae, marginal ulcers continue to be problematic after RYGB, suggesting other potential etiologies and risk factors for their development.^{10,11} The present study was conducted to assess the occurrence of marginal ulcers after mini gastric bypass in 6 months.

We found that out of 200 patients, males were 120 and females were 80. Azaguri et al¹² in their study a total of 103 patients with marginal ulcers presented with pain (63 %) and/or bleeding (24 %), a median of 22 months after surgery. Ulcers were located on the anastomosis (50 %) or the jejunum (40 %); sutures were visible in 35 %, and gastrogastric fistulae in 8 %. The mean pouch length was 5.6 cm. Diabetes (odds ratio [OR] 2.5; $P = 0.03$), smoking (OR 2.5; $P = 0.02$), and gastric pouch length were significantly associated with marginal ulcer formation on univariate analysis; diabetes was significantly associated on multivariate analysis. The risk of developing a marginal ulcer decreased with time and was not associated with the use of non-steroidal anti-inflammatory drugs. At first endoscopic follow-up, 67% of ulcers had healed. Recurrence occurred in four patients and nine patients required surgical revision.

We found that out of 200 patients, 14 had marginal ulcers. Mahawar et al¹³ found that the majority of participants (82.4%, $n = 69$) use routine proton pump inhibitor prophylaxis, but there are significant variations in the drugs used, dosage and duration of therapy. The total number of OAGB/MGB procedures collectively reported was 27 672, revealing 622 MU, giving an MU rate of 2.24%. There was no reported mortality associated with marginal ulceration after OAGB/MGB procedures from this survey.

We found that mean height was 156.2 cm, weight was 67.4 kgs, BMI was 22.6 Kg/m² and Hb1Ac was 5.7%. We found that risk factors for ulcers were smoking in 5, alcohol in 2, stress in 1, NSAIDS in 2, steroids in 2, bile in 2, coffee in 1 and *Helicobacter pylori* in 1 case. Kular et al¹⁴ assessed laparoscopic mini-gastric bypass (MGB) in 1,054 consecutive patients (342 men and 712 women). Mean age was 38.4 years, preoperative mean weight was 128.5 kg, mean BMI was 43.2 kg/m², mean operating time was 52 ± 18.5 min, and mean hospital stay was 2.5 ± 1.3 days. There were 49 (4.6%) early minor complications, 14 (1.3%) major complications, and 2 leaks (0.2%). In late complications, one patient had low albumin and one had excess weight loss; MGB was easily reversed in both (0.2%). Marginal ulcers were noted in five patients (0.6%) during follow-up for symptomatic dyspepsia, and anemia was the most frequent late complication occurring in 68 patients (7.6%). Patient satisfaction was high, and mean excess weight loss was 84, 91, 88, 86, 87, and 85% at years 1 to 6, respectively.

CONCLUSION

It is concluded that common risk factors were smoking, alcohol, stress, NSAIDS, steroids, bile, coffee and *Helicobacter pylori*.

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